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on Photographing Antarctica's Ross Sea

**Inside Story: Covering
the WV Freedom Industries Spill**

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Adélie penguins approach the edge of Antarctic sea ice, from "The Last Ocean," by John Weller (Rizzoli, 2013), a large-format book of photos and text dedicated to "saving the most pristine ecosystem on Earth." To learn more about the author and the Ross Sea Project, see interview p. 12 and book review p. 18. Photo: © John Weller

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Press, Public Thirsty for Information, But Agencies Turning Off Spigot

By DON HOPEY

People care about the information they get.

And, more than ever, they need accurate, factual news delivered as quickly as possible to best assess the risks and threats to their health and the environment.

But the public isn't getting what it needs from federal and state agencies – especially the U.S. Environmental Protection Agency – where, during crisis events and day-to-day operations, agencies work harder at controlling the information that reaches the public than they do at gathering and making it available.

A recent example of that, one of several, is the performance earlier this year of the EPA and the federal Centers for Disease Control following the chemical tank leak in Charleston, WV, which contaminated the Elk River and the drinking water supply for 300,000 people (see “Inside Story” on coverage of the leak, p 6). The EPA refused to speak about the contamination for nearly a week, and took several more days to supply information about water quality to local residents thirsty for news.

Tim Wheeler, chair of SEJ's Freedom of Information Task Force, former SEJ president and long-time environment reporter at the *Baltimore Sun*, said the EPA and the CDC failed in their responsibility to inform the public.

“The EPA didn't just keep a low profile; it refused to talk,” Wheeler said. “And the CDC, while it eventually did talk to (National Public Radio) and some national outlets, ignored the local audience most in need of the information and desperate for news about the contamination during that crisis situation.”

Of course, as many SEJ members know, problems prying information and interviews out of federal and state agencies aren't limited to crisis situations. Although the EPA's own website says part of its mission is to make sure the public has “access to accurate information sufficient to effectively participate in managing human health and environmental risks,” SEJ members' interactions with the agency are more frequently than not marked by response delays and a lack of transparency.

It wasn't always this way. Once upon a time, government public information officers, or “PIOs” for short, lived up to that job title, serving a valuable function. Responding to media requests and questions, PIOs would set up interviews with scientists and administrators. Many PIOs at both federal and state levels were knowledgeable about issues and could respond to questions immediately or in a timely manner, providing factual information that was responsive to questions.

That still happens. But only occasionally. For the most part today, PIOs are not living up to their job title. Not any part of it.

More and more they seem almost afraid to speak, and when they do are often loathe to give out information about research, investigations and on-going crisis management. Often as not we must deal with PIOs who know little about the subject at hand, or have no authorization or expertise to speak of it. What reporters now are most apt to receive are the unresponsive statements contained in written releases they're happy to email to you, as soon as they get clearance. Which could take days.

In short, while there remain a few good ones sprinkled through the agencies – and even those have their hands tied – the PIO job today is much more public relations than public information. As Ken Ward Jr., the *Charleston Gazette* environment reporter and longtime former SEJ FOI Task Force chair, observed, there are fewer and fewer PIOs who are career public servants, and more on the federal and state levels who hail from political campaigns.

“The people handling the PIO jobs were campaign flacks, but we don't need political operatives in those positions,” Ward said during a phone conversation in February. “We need and want someone who believes in the public's right to know.”

But don't get the idea this information flow problem related only to the EPA or the CDC or other federal or state environment or health agencies. Corporations regularly respond to questions by issuing self-serving statements that don't answer the questions asked, and other government agencies also frequently show their disrespect for the media, and by extension, the public. One example is a February story by The Associated Press that reported the head of the U.S. Special Operations Command ordered photographs of Osama bin Laden's corpse destroyed or turned over to the CIA (where they could avoid FOIA disclosure) even though the AP had filed a FOIA request for the photos 10 days earlier.

Such actions, which have accelerated in recent years, show a distinct lack of respect for the role of a free press.

So how do we fix this problem? Well, SEJ's Freedom of Information Task Force has penned letters of protest to the CDC – getting an admission that it could have performed better in Charleston – and the EPA. It's invited administrators from both to discuss the problem, and plans to continue to aggressively press the EPA and other agencies for more transparency, more openness, more timely and responsive communications with government PIOs, and better, more



News Futures 2014: How Many Ways Will Climate Make News?

By JOSEPH A. DAVIS



Veteran journalists at the Wilson Center in Washington, D.C. offer their thoughts on what will be the biggest environment and energy stories of the year. Bloomberg BNA's Larry Pearl (left) delivered the keynote address, followed by a roundtable discussion with (l to r): Douglas Fischer, *The Daily Climate*; Andrew Revkin, *Pace University*; Cheryl Hogue, *Chemical & Engineering News*; Dennis Dimick, *National Geographic*; Suzanne Goldenberg, *The Guardian*; and Coral Davenport, *The New York Times*. Photo by Schuyler Null, Woodrow Wilson International Center for Scholars

Climate change and the myriad conflicts that arise from it will be a dominant story in 2014, a panel of top environmental news media experts predicted at a standing-room-only event co-sponsored by SEJ in Washington, DC.

Many of those conflicts are about energy: coal, oil, gas, wind, solar, and the numerous ways those are regulated at the federal and state level. Within weeks of the event, the panelists' predictions were coming true, and weird weather was wreaking havoc across the country and the globe.

Before the panel of seasoned environmental journalists took turns prognosticating, Larry Pearl, director of environmental news at Bloomberg BNA, offered an overview of the regulatory, legislative and litigative calendar.

A lot of the “set” and predictable decisions Pearl outlined will relate to climate in some way. An example: EPA's finalization of the renewable fuel standard. But even modest legislative efforts to address energy efficiency have a very uncertain outlook – with Congress in partisan deadlock and facing elections – as do almost all other possible actions by Congress.

There are conspicuous exceptions to the gridlock prediction. Pearl noted that a Water Resources Development Act (a pork-barrel vehicle with something for almost everyone) seemed almost certain to pass.

Pearl and the panelists were pessimistic about Congress getting much else done in 2014; he noted that the legislative work session was especially short before election pressures begin. Even something like bills to reform the Toxic Substances Control Act (TSCA)

– which have been inching forward toward a bipartisan, industry-environmentalist consensus in recent years – have little chance of being finished in 2014, and is likely to be held over for a future Congress.

The Jan.9 chemical spill that contaminated drinking water in Charleston, WV, served as an example of how breaking events have a way of challenging prognostications. Panelist Cheryl Hogue, a senior correspondent for *Chemical & Engineering News*, said the spill had reshuffled the odds for a TSCA bill passing, without necessarily making it more likely. But, Hogue said, the Charleston spill could help chances for some more limited measure, like a Senate bill for chemical tank safety and inspection. (See “Inside Story” for more on coverage of the spill, p 6.)

‘Everything always boils down to coal’

Panelist Suzanne Goldenberg, who is the U.S. environment correspondent for *The Guardian*, summed up much of the coming year by saying: “When it comes to climate, everything always boils down to coal.” EPA is expected this year to hand down decisions on carbon limits for coal-burning power plants, both existing and new ones, which will be hotly debated and make news. A key point will be whether carbon capture and storage technology actually works. But, she noted, the fact that 2014 is an election year means “a large chunk of this debate is not going to be on the merits of carbon capture ... it's going to be about politics. It's going to [be] down and dirty.”

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Inside Story

In Covering Chemical Spill, Ward Zags When Others Zig

Ken Ward Jr. is a staff reporter for the Charleston (WV) Gazette, and has been nationally recognized for his reporting on coal mining, the environment and workplace safety. Most recently he has been reporting on the Freedom Industries chemical spill in January 2014 that left up to 300,000 people within nine West Virginia counties without access to drinking water. Ward spoke to SEJournal's "Inside Story" editor Beth Daley about his work on the Freedom Industries spill story.

SEJournal: When you first heard of the Freedom Industries spill, who or what did you turn to first to report? Why? What came next?

Ken Ward Jr.: My first call was to a guy at our Department of Environmental Protection who handles emergency response, who is actually from my hometown and who I have known for years. He's always good for a quick description of what appears to have happened and how the response is going. Hours later, when they announced the "do not use" the water order, I started trying to find out more about the chemical involved, "Crude MCHM," by first circling back to my DEP source for a copy of the "material safety data sheet" or MSDS. Then I called some local toxicologists who had reviewed it to try to find out as much as I could on deadline about the potential effects of this chemical. It turned out that there just isn't much

known, as is the case for most chemicals used in our society.

SEJournal: It's clear from your reporting you have developed critical sources you can rely on to fact-check what government and industry officials are saying – or not saying. How important was this in the Freedom spill and how did you develop those sources?

Ward: It's always critical not to take the government's word for anything. Like I.F. Stone said, "All governments lie." In this instance, it was especially important to have outside sources and independent experts, because state and federal agencies were often not very cooperative in providing much-needed information to answer questions our neighbors had about their water supply. EPA and CDC were especially difficult to get answers from. In this case, I've covered local coal and chemical industries for a long time, so I have a decent collection of sources. I also reached out to several SEJ friends who were very helpful in providing specific experts on particular areas, like the development of a short-term screening level for how much MCHM was acceptable in water. Those sources helped us explain to our readers the kinds of unknowns, data gaps and other questions that existed about the CDC's work on that screening level – absent CDC itself being willing to talk about those issues.

SEJournal: Your Coal Tattoo blog is considered a must-read for the public, industry and government. How do you cut through

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This aerial photograph shows the Freedom Industries tank farm along the Elk River in Charleston, WV. The arrow identifies Tank 396, which leaked the coal-cleaning chemical Crude MCHM into the river on Jan. 9, contaminating the drinking water of 300,000 West Virginians for weeks.

Photo: Commercial Photography Services of WV via U.S. Chemical Safety Board

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Local Meetups Bring Networking Home

By EMILY GERTZ

Even in these days of cheap, globe-spanning, instant-gratification communications, many journalists are discovering that face-to-face gatherings still play a major part in building our careers. Shared experiences in the real world can lay especially strong foundations for professional relationships, as well as personal. Even when the opportunity to meet is infrequent, such as SEJ's annual conference, knowing a colleague in person often makes it easier to continue the relationship online.

But a growing number of SEJers aren't waiting 12 months to recreate that in-the-flesh experience. In the greater Portland, Ore., area, for instance, members Christy George and Terri Hansen have been getting locals together since 2009. Sharon Oosthoek organizes quarterly pub nights in Toronto.

About a dozen people, including from Portland and Vancouver, turned out when Ashley Ahearn organized a book author pitch slam co-sponsored by the University of Washington Press in Seattle late last year. "It's always great to see friends and colleagues, especially at an event like this one that was organized specifically to help SEJ members advance their careers and build connections in the book publishing world," said Ahearn. "This was definitely a win for both members of that partnership and we're looking forward to doing it again next year."

In New York City, I've founded the Society of Environmental Journalists NYC gathering [www.meetup.com/Society-of-Environmental-Journalists-NYC], which attracts anywhere from 2 to 25 people every couple of months. We get active journalists, editors, students and environmental writers out for varied events — from happy hours, to ferry tours, to dinner or drinks with special guests.

"Happy hours give members and friends of SEJ an opportunity to connect outside of our annual conferences and just generally enjoy each other's company," said Kate Sheppard, who last November organized the first casual SEJ gathering in Washington, D.C. She estimates that around 50 people showed up at The Science Club, a DJ bar, over the course of the evening. "Many of us see each other while covering events or rushing around the Capitol, so it's nice to have some time where we can socialize," Sheppard added. "I think the old saying goes, the journalism organization that drinks together, stays together."

Relieving isolation, maintaining energy

Large turnout is not the only measure of success, however, particularly when the environmental beat takes an SEJ member into remote areas. "The tiniest meetup in SEJ history may have been last winter," Cynthia Barnett wrote in an e-mail, "when Bill Souder and I met for lunch in snowy Luck (pop. 1,100) in rural northern Wisconsin. I was traveling in Wisconsin and he was in Minneapolis-St. Paul, and we met halfway LOL."

With more and more environmental journalists working as freelancers, local gatherings can break the isolation of the home office. "The SEJ meeting in Chattanooga was one of the best pro-

fessional events I've ever attended," said Adam Aston. "But it's tough to carry that high into following months, especially working as a freelancer working solo most of the time."

Aston has found that local face time with fellow SEJers helps maintain that energy. "The NYC satellite meeting has been a regular source of revitalization, fun and professional therapy. It's great to share a drink, compare notes and find more time to learn about one other's interests."

He must mean it, because in 2013 he joined me as co-organizer of the NYC group. Said Aston: "Our most catalytic meetings have been informal, small group meet and greets with a guest — the likes of *OnEarth's* executive editor George Black and NYU J-school's Dan Fagin. Now we're talking about bringing in other academic experts, other editors and the like."

Meetup.com a good tool for meetups

To keep the NYC group both organized and growing, Aston and I use Meetup.com to simplify the rote organizing tasks. Meetup's platform (available in web, tablet and mobile phone formats) provides tools that allow us to schedule events and get the word out very easily, without having to manage dozens of email addresses or individual messages one at a time. It's also a centralized "place" for people to find information and RSVP for our next gathering.

To keep people coming back, it's important that local gatherings have the same "high signal-to-noise ratio" as SEJ's annual conference, with as much relevance as possible. But local meetings can also attract potential new members and broaden SEJ's exposure — both key goals for the organization.

To balance these somewhat conflicting aims for SEJ-NYC, Aston and I utilize Meetup.com's closed group option, which keeps logistical details about specific gatherings hidden from the general public while — through the magic of metadata — allowing potential new members to find us and request entry to the group.

Aston likens it to Amazon's book-recommendation engine: "Meetup's robot does a great job recommending SEJ-NYC to folks in the region with kindred interests," he explained. "Some are journalists who didn't yet know about SEJ. Others aren't but are in-

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Last September, Alex Dake (left) and Bobby Magill (right) joined around 20 SEJ-NYC members who gathered at the Flatiron Lounge in Manhattan to toast SEJ Award winner George Black (center). Photo by Emily Gertz

Getting the Most from Conferences

By JENNIFER WEEKS

Like many freelancers, I enjoy working from home for the usual reasons — few distractions, no staff meetings or dress code. But periodically I need an infusion of new ideas and some face time with professional peers. One way to get those is by attending conferences.

Beyond SEJ's annual conference (my favorite after a decade of freelancing), there are plenty of meetings across the United States every year to fill journalists' calendars. I attend two to four conferences annually and consider them a cost of doing business. Conferences offer opportunities to find stories, learn about new topics, and meet sources, editors and other writers. The energy and ideas I bring back from a good conference are well worth the time and money I invest.

Before the meeting

Much of the work I put into conferences takes place well before I leave home. First question: where to go? Many organizations sponsor meetings that may be useful to SEJ freelancers. Some examples:

- **Journalism organizations:** National Association of Science Writers, Association of Health Care Journalists, Investigative Reporters and Editors, American Society of Journalists and Authors.
- **Scientific organizations:** American Association for the Advancement of Science, American Geophysical Union, Ecological Society of America.
- **Advocacy groups:** National Trust for Historic Preservation, U.S. Green Building Council.
- **Trade groups:** Industries ranging from home building to seafood.

These meetings serve different purposes, so it's important to think carefully about what you want. Journalism groups typically offer a mix of sessions focused on skills, such as pitching or digital reporting, and others delving into topics that attendees cover. Panels at scientific meetings present and discuss current research, either in a specific field or across many disciplines. Advocacy groups want to build awareness of their issues and support for their policy agendas. Trade shows present broad samples of what's trending in the sponsoring industry.

In choosing where to go, consider your goals. Do you need to know more about an industry that's important in your state or region? Learn about current research in a particular scientific discipline? Make contacts with editors and writers? To find conferences that meet your needs, talk to other journalists and research the meet-



A conference attendee between sessions during the annual American Association for the Advancement of Science meeting in Boston in 2013.

Photo: © Roger Archibald

ings in advance to see what they'll cover and who will be speaking. Once you choose a conference and start making travel plans, there are many ways to keep costs down. Journalism groups (including SEJ, National Association of Science Writers and Association of Health Care Journalists) often offer fellowships that cover attendees' registration fees and/or travel costs. Others offer free conference registration to working journalists, either as policy (one example is AAAS's annual meeting) or case by case. Check the meeting's press registration guidelines, and if they don't say any-

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News Innovation an Essential Skill for New Journalists

By EMILIA ASKARI

Welcome to the new EJ Academy column, a place for environmental journalism educators and students to explore current research on environmental journalism, best practices and models for teaching and insights into the state of EJ education today. Send tips and submissions to academic member and column editor Sara Shipley Hiles, Missouri School of Journalism, at saraship@gmail.com.

I have never won the Knight News Challenge, but I felt like I snagged the teaching equivalent of a million-dollar prize in late 2012 when Knight Challenge Director John Bracken flew in to hear my journalism students pitch their news innovation ideas.

We lured the man with the \$150-million grant program to the University of Michigan campus with enticing student posts on our course blog (link: dissectingthenews.wordpress.com/category/news-innovation-ideas). I told Bracken that if he came to hear my students talk about their ideas – a Kleenex-box news delivery system, an app for tracking disease outbreaks in dorms, an app for sharing info about school cafeteria food – why, they’d be so happy they would dance!

Indeed, there was some excited hopping around on the morning of our end-of-term News Innovation Pitchfest. One of my students, a member of an a capella choir, even prepared a song and slide show highlighting the big Bracken moment.

The giddy morning concluded with Bracken and two other judges choosing a winning pitch team, whose members took home candy and some extra credit. In addition, Bracken encouraged the students who dreamed up the winning idea, called Health Radar, to apply to the Knight Challenge.

Their application didn’t make it out of the first Knight Challenge round, but it was still an incredible experience for those students and the entire class.

This successful teaching moment came many years after I first began assigning news innovation exercises in the environmental



SEJ member Julie Halpert (left), instructor at University of Michigan, listens as students (l. to r.) Emily Jaffe, Casey Wasko and Lauren Dudley pitch an innovation idea entitled Healthy Circle to the panel of judges last December.

Photo by Emilia Askari

and public health journalism class that I co-teach with Julie Halpert, another long-time SEJ member. In fact, it was SEJ’s founding president, Jim Detjen, who inspired me to teach news innovation. He asked me to visit his class at Michigan State University one day while his students were discussing ideas for the Knight Challenge.

Making innovation assignments work in the classroom

Over time, it became obvious that the ability to think creatively about gathering and sharing news was an essential skill for new journalists, and my news innovation assignments became more elaborate and more successful.

Here is how the process works:

Organizing Teams and Creating Plans: I like to set up the teams myself, using a background information form that students fill out on the first day of class. I try to make the teams diverse, considering factors such as gender, international experience, journalism experience, science background, visual skills and business experience.

The first thing I ask each team to do is come up with a written agreement about how members will divide the work for this assignment and how they will resolve conflicts. I tell them that complain-

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Tips for Teaching News Innovation

- Don’t be afraid to connect your classroom to the real experience of writing a proposal for an actual grant competition. We ask students to follow a slightly modified version of the Knight News Challenge rules. Because our course is focused on environmental and public health journalism, we also ask our students to make sure that their innovation ideas include information related to those two topics.
- Make sure that students think very openly about what is news. Push them to consider types of information that aren’t now collected by traditional news organizations.
- We do not require any prototyping that would require programming or other technical skills – just a well-reasoned description of how the idea would work.
- Before your students jump into sketching out a cool app or

other innovation, ask them to find a news-related problem that needs to be solved. The next step is for the students to interview a range of people about that problem. Students should not focus too much on their solution at first. First, students need to explore multiple perspectives, so they don’t design a solution that’s too customized to their own tastes.

- Encourage students to think about how their ideas can be financially sustainable. They need to think about the size of the potential market and figure out how to create their product so it will survive beyond grant funding.
- News innovation should be a team assignment, because it helps to discuss things in a group. Most work outside of school is not done in isolation anyway. In fact, I encourage students to brainstorm about this assignment with everyone they know.

Good Audio Gives Life to Environmental Storytelling

By KAREN SCHAEFER

In these multimedia days, many reporters are not only expected to write stories, but to take photos, even capture video (see “Photo-journalism Upheaval Heralds Multimedia’s Rise,” Winter 2014 issue). But many reporters shy away from gathering audio that could also enhance their print or photographic storytelling. Even if you’re not trying to break into radio, getting good audio doesn’t have to cost an arm and a leg – and it doesn’t have to be complicated, either.

Why add sound? If you’re writing a piece about birds or wolves, imagine the emotional impact for your audience if you could offer them that actual call of the wild. If you’re doing a photo slide show, picture how much more effective it could be with an audio track recorded at the scene running underneath it. And never underestimate the power of the human voice. That catch in the throat, that telling pause – human vocal qualities tell the listener something that print alone can’t replicate.

Recording then – and now



This was the author’s first ‘portable’ recording device—a Telefunken Magnetophon—back in the 1960s—a 30-pound reel-to-reel tape recorder with no external microphone. Photo: Wikimedia Commons

I’ve been recording voices and sound since I was a teenager in the 1960s. My first recording device was a secondhand 1955-era Telefunken reel-to-reel “portable” recorder, which weighed 30 pounds and used 7-inch magnetic tape reels. It was big, clunky, and had no external microphone. I loved it.

Fast forward through the cassette and DAT (digital audio tape) eras to the all-digital present. These days I pack a standard NPR-style media kit: a Marantz PMD660 digital recorder, an Electrovoice RE50 omni microphone, an Audio-Technica short shotgun mic (which gives me close-up sound), a pair of Sony folding headphones, plus all the necessary cables, connections and windscreens.

It’s all solid stuff, known for long life and durability. But even though I bought some of the equipment used, the total package was over \$1,000. Ouch.

Fortunately, audio newbies don’t need to open a vein to buy audio equipment good enough for broadcast on networks as fussy about sound as NPR or PRI.

Audio hardware basics

Case in point. Since 2013 I’ve been mentoring an SEJ radio newbie, Lana Straub, who caught the radio bug at her first SEJ conference in Lubbock, Texas, near her West Texas Permian Basin home. For her first trial run at recording audio, she used equipment culled from her husband’s home music recording studio.

“I started out with an Olympus DS-30 hand-held digital recorder with the mic on top, and a pair of ear buds. This is actually

what I used in a press conference with Laura Bush,” Straub wrote in an email. “It got a lot of snickers from the group of seasoned radio and TV journos.”

But it got the job done. After recording a few more stories for her local public radio station, KXWT, Straub learned the basics of good recording, miking both herself and her subjects up close (a fist’s distance between the mic and the subject’s mouth), and using her headphones while gathering ambient sound. She also learned to improvise. At one event, too far away from her subject for good audio, she cut the bottom off a plastic water bottle to create a boom around her mic. And she added a sock as a mic screen to combat the Texas wind.

But Straub knew her equipment wasn’t broadcast quality. It could record only in MP3 format, so-called ‘lossy’ sound that means that some of the data is lost in order to compress the file. That’s fine for iPod listening. But when you start manipulating the MP3s in an audio editing program, you can get mistakes, called ‘artifacts,’ that can lead to loud noises and drop-outs. And why start out in a poorer-quality format, when higher quality doesn’t cost that much more? So Straub decided to invest in a new kit that records in ‘loss-less’ WAV files.

“My next set of equipment was an IRig that I ordered for \$39.99 to be used with my iPhone and a spare PG 58 mic that I had lying around the house from our music gear,” wrote Straub. She used it for a few months, but when an incoming call interrupted a recording session one day, she knew it was time for a more professional kit.

Lower prices, many options

Straub invested in a Zoom H4N Digital Audio Recorder, along with two external mics, including an AT-897 short shotgun mic from Audio Technica. Her total package was about \$600. But there are even cheaper technologies out there for both high-quality broadcast and online applications.

For example, the Tascam DR-05 recorder that records in WAV files, with a couple of cables, a tripod and earbuds, can be had for around \$100. The Tascam DR-07 with accessories sells for around \$160. And BSW (BSWUSA.com) has a brand called Alesis that records in WAV format for around \$80. It also has the Zoom H1 for about \$100.

Some radio reporters are now exclusively reporting using an iPhone or other smart phone. Neal Augenstein of WTOP in Washington, D.C. profiled his transition to iPhone reporting in PBS’s MediaShift: (<http://to.pbs.org/1n8SWzb>). NPR has a tutorial on how to record a good-quality phone interview using an iPhone: (<http://to.pbs.org/11L9Y1g>). Others are using Skype to record long-

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Tascam’s hand-held digital recorders have become a favorite among radio journalists for low cost and high quality. Photo: Courtesy Tascam

Saving the Last Ocean



The Ross Sea landscape is a synthesis of fire and ice. A series of volcanoes extends from the southwestern corner of the Ross Sea in a north-south line. Extinct domes (right) rise high above the water to form the black rock cliffs of Beaufort and Franklin Islands. Photo © John Weller

Like many outdoor and nature photographers before him, John Weller, author of the recently released *"The Last Ocean: Antarctica's Ross Sea Project"* (Rizzoli, \$50; see review on p. 18), has embraced the belief that the camera can serve as a powerful tool to advance environmental protection. But unlike many of his current and past colleagues, his efforts aren't limited solely to the production of pictures, but rather to using his photography, writing and media to promote marine conservation around the world.

Shortly before departing for Indonesia on his most recent project, which will focus on protecting marine diversity in the Raja Ampat Islands, Weller spoke to SEJournal photo editor Roger Archibald and offered insights about how a Stanford economics major contemplating an academic career evolved into a global advocate for marine conservation with interests stretching from the tropics to the poles.

SEJournal: Describe your journey from your first encounter with a camera to where you are today.

Weller: I started taking photographs when I was four years old at my sister's first birthday party, and somehow it suited me. That became my passion all the way up through college. But I was basically having my mid-life crisis when I was 22 years old. I was really thinking about photography, and how much I absolutely loved that medium. At that point, I made a decision to move into photography that was not lightly taken, but I made a single call to [photographer] William Neil in Yosemite and started a conversation with him. I ended up as his apprentice for the next two years, and learned the ropes in the Yosemite area.

What brought me back to Boulder was the chance to exhibit my work at NCAR [National Center of Atmospheric Research]. The right person walked past that show and bought an outrageous number of prints. The sale was worth enough to float me for two years, which was amazing. And so I bade adieu to Bill [Neil] in Yosemite, and I moved back home into my parents' basement to extend my money.

During the next three years, I produced the Sand Dunes book (*"Great Sand Dunes National Park: Between Light And Shadow,"* Westcliff, 2004). So I was hiking out for a week at a time by myself into the wilderness to photograph every month for three years. It was a wonderful experience and I got some very beautiful imagery. But what was happening behind the scenes was a very analogous situation as in the Ross Sea. A developer had bought a big chunk of land, and was going to pump all the water out from under it up to Denver. Of course, the dunes system is completely dependent on that aquifer. And what ensued was this movement in the San Luis Valley to protect the dunes. The real drivers were the ranchers who realized conservation was a means to an end. For them, it wasn't about protecting a pretty dune system, it was about protecting the San Luis aquifer. And what that showed me was conservation in that situation was not a luxury, but a human necessity. This place was worth more alive than dead. And I wanted to tell that story.

SEJournal: At one point you planned to get an economics Ph.D. Did you find economics to be something really helpful in understanding ecosystems?

Weller: Aside from continually informing me exactly how broke I am, economics has been very useful as a tool to look at understanding how humans interact with ecosystems. That's really where the meat of this work lies. We're trying to change human behavior. And that's what we need to do if we're going to protect the resources that we have left.

I was impassioned by economics to a large extent because of one particular precept of economics: You can prove that conservation is efficient. That kind of flies in the face of the way that we think about economics and environment, where it's very often presented as a trade-off — either you protect your environment or you maintain your economy. And in the long run that's not at all true. That's something that I really connect with in economics, and it was in part responsible for the path that I've taken.

SEJournal: What was your initial impetus to embark on the Ross Sea project?

Weller: I wanted to tell the Sand Dunes story again, and I was looking around for a place to tell that story. A friend of mine from high school who had been working in Antarctica came through town in 2004, and when I met her, she literally thrust this paper into my hands. And she said, "You have to read this right now. This is a story everybody needs to know. This is the last pristine ecosystem." It was a very obscure scientific paper about the Ross Sea by (ecologist) David Ainley. Basically, he lays out the Ross Sea story. It's this last intact place; it's being threatened by a fishery that's expanding.

And it kept me up at night, this idea that there was one place left in the entire ocean. I couldn't sleep, and I ended up calling this ecologist and flying out to meet him in California. We committed to try to tell the story. He sent me home with an armful of reading material to start building my knowledge about the area. Then I started to work on getting

money to do the work. It took me thousands of phone calls to start this project off. The scientists didn't bring money to the project. I brought money to the scientists. So actually a fair amount of the fundraising was not for the photography, it was about organizing the scientists. Because the purpose of the project was to highlight the Ross Sea and promote protection, it turned out that in many cases, photography was not the right tool for the moment, and so I would engage in other parts of the process. I was able to find funding to bring everybody to the International Marine Conservation Congress in Baltimore [in 2009], and run a symposium on the Ross Sea. I'm really proud of that part of the work. Nobody had ever collated all of the different scientific angles so that you could look at the problems and really give an estimate of the Ross Sea. That was a really useful piece of work, and didn't really have anything to do with the photography.

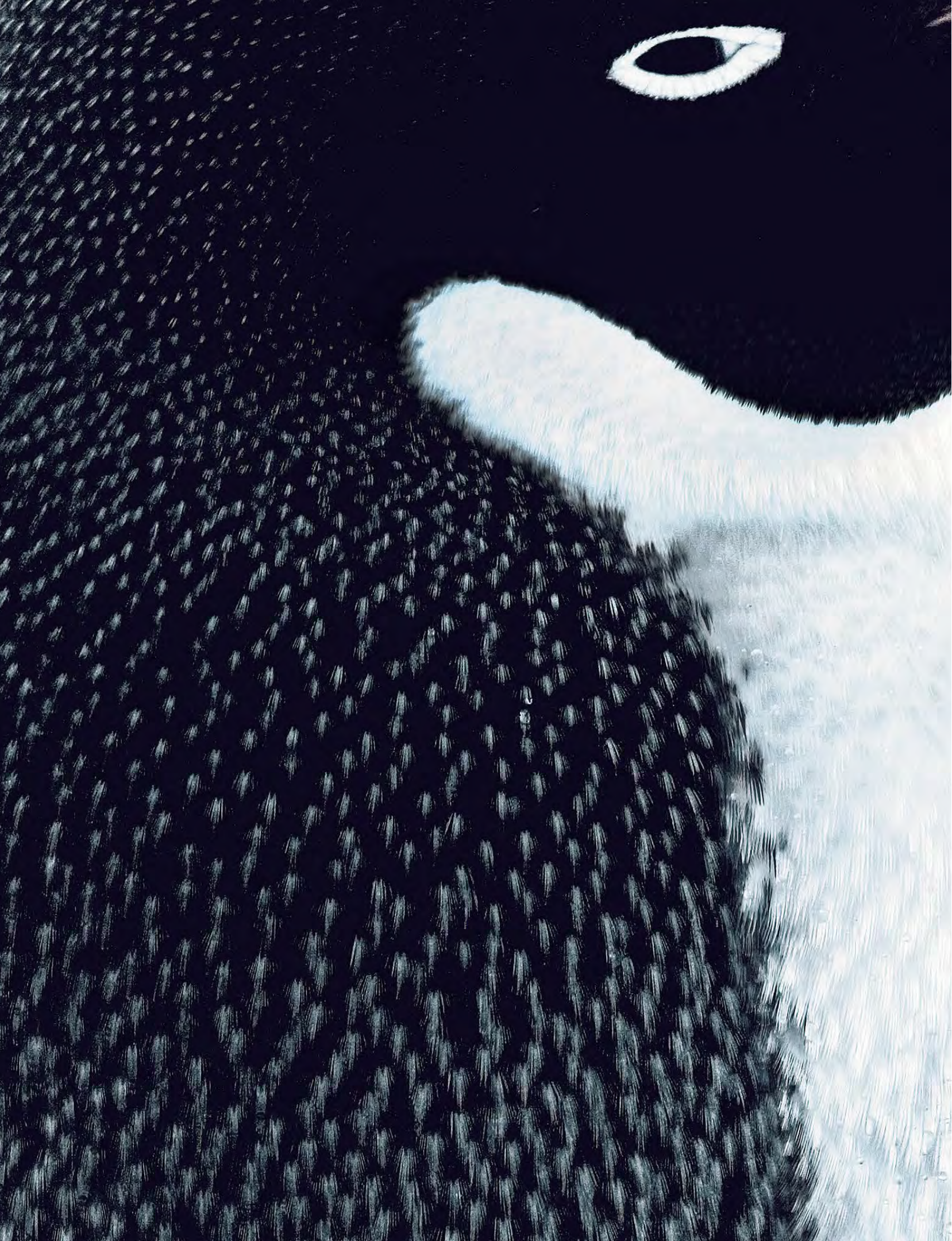
The Ross Sea project cost something like a million dollars to do all those trips. For months on end I literally would kind of wander around my back yard, pacing with my cell phone, trying to think, 'Who do I call next?' I cold-called the manager of [tour operator] Quark Expeditions, and basically asked him, 'Hey, can you take me to the Ross Sea?' And sure enough, he gave me passage on several different ships. Most of that money was collected through private donors. I got a fiscal sponsorship through SeaWeb to collect money as a 501(c)(3). And I was able to fund the project. We were not eating filet mignon on the road, but we were able to get the photography done.

SEJournal: Did having the Great Sand Dunes book in print make a big difference in your later efforts to promote your Ross Sea project?

Weller: That was definitely a key, like a calling card, and I could say, "Look, this is what I did in the Great Sand Dunes; here's what I want to do in Antarctica." Without that book, I wouldn't have gotten the support, for sure. Having the support of the scientific community was also key in opening the first doors. But the real meat of Quark's support came not in any way because I was a great photographer, but because I had a great story. So I think that photographers



Some icebergs stretch hundreds of kilometers, altering ocean currents and weather, and can be tracked by satellites. Over the course of many years they melt back into the ocean. Photo: © John Weller



Closeup of a penguin, left, one of several that approached Weller fearlessly, waddling up to within a few feet and surrounding him before settling down and puffing out newly manicured feathers against the cold and falling asleep. At right, Weddell seal and underwater photographer Rob Robbins.

Photo: © John Weller

who are looking to do good work, if you have the right story, and you have the right content partners — because by that time I had a team of biologists that were acting as my mentors in trying to tell this story — once you have your brain trust in place, and you have a legitimate story to tell, you're in good shape.

SEJournal: Has writing been as important as photography in getting your conservation message out?

Weller: It's definitely equally as important, if not more so. For the most part, you need interpretation, you need words around the photograph to maintain context and to tell a deeper story. Where I was able to separate myself a little bit and maybe bypass some of the complexity of working as a photographer and having to make a living and pursue these projects, is that I was able to write. I'd say that my main activity is writing, and developing a project and then writing grants to try to support it. Most of the funding has come through foundations like the Pew Fellowship [which was] three years' worth of money. I have another fellowship actually — it just started — with the Blue Ocean Institute, Carl Safina's group in New York. He's done me the honor of giving me a fellowship to pursue work in Indonesia.

SEJournal: Do you have a particular target audience that you're trying to reach with this book?

Weller: Absolutely. We've been trying to find every creative angle we can to enter into the political process with the arts and with the messaging, and trying to get this in front of the right crowd. And there are really two audiences that we're trying to reach: obviously the political powers that are in charge of deciding whether the Ross Sea is going to be protected or not — that was our first big audience — but then one of the reasons (and I'm still convinced of this) is that people care about these things if they know about them. The main issue in our society is that people don't know what the real issues are, and so they can't act on them. So getting the message to the public, and getting a broader understanding of the value of these areas, these last pristine places, that's a very pertinent thing for me. ♦



A misty cloud drifts across the ice when a Minke whale breaks the surface, exhaling a salty spray and then filling its huge lungs with another breath. These whales follow the seams and breaks in the pack ice, finding pockets of water to feed on phytoplankton and tiny shrimp-like krill. Photo: © John Weller

SEJ President's Report...continued

SEJ conference also to address info access

And SEJ's annual conference, earlier than usual this year on Sept. 3-7 in New Orleans, will also target the issue of information availability, kicking off with a day-long workshop, "Disasters and Extreme Weather: Gathering the News and Keeping Safe," organized by Nancy Gaarder of the *Omaha World Herald*. Sessions will cover industrial infrastructure, sourcing, protecting our own psyche, the common classes of contaminants, and also how to navigate information sources often as chaotic as the unfolding crisis.

"A key part is teaching reporters where to find stuff when the people who are supposed to tell you stuff, aren't," said Mark Schleifstein, chair of this year's conference and environment reporter at NOLA.com and *The Times-Picayune*.

A strong conference lineup of nine tours on Thursday, Sept. 4, will also call attention to the ebbs and flows of information. Among the tours are trips exploring the aftermath of the BP oil well spill in the Gulf, wetland and barrier shoreline restoration, impact of Louisiana's industrial "chemical corridor," impacts of increased hydraulic fracturing ("fracking") in oil and gas exploration, storm surge risks and rebuilding after disasters.

And EPA Administrator Gina McCarthy, who has said EPA's goal is to be as transparent as possible, has been invited to be a keynote or plenary speaker. If she accepts, we can be sure that topic will come up.

Although the conference sessions lineup hasn't been finalized as I write this, Jay Letto, SEJ's conference director, said there would be at least one session devoted to how to file FOIA requests, which should be helpful to younger and new members.

It's an educational opportunity that is much needed because all of us need to do a better job letting the public know we are asking the hard and important questions. We can't control what the agencies are doing. We can only change our own behavior. So in addition to printing the non-responsive releases we are handed, journalists need to also tell readers the questions we've asked that aren't getting answered and why they're important.

"It's not 'inside baseball.' People care about our ability to get answers especially in situations where there are public health questions and risks," said Ward. "The people need the information. That's what it comes down to."

Don Hopey covers environment at the Pittsburgh Post-Gazette, and teaches at the University of Pittsburgh and the Pitt Honors College Yellowstone Field Course.

Inside Story...continued

what can be emotion and rhetoric on both sides of the issue to get to the truth? What and who do you rely on?

Ward: I'm not sure that I do cut through the emotion and rhetoric. And I would say there's absolutely nothing wrong with people being emotional about issues that affect both their health and safety and their ability to provide for their families. Journalists or government officials or industry lobbyists who pretend emotion has no place in these discussions are sending us down the wrong path in covering environmental stories. On my blog, I require everyone to be respectful of those they disagree with, and to provide links or citations to scientific articles or other sources to support their claims. These requirements have lost me many readers — who believe the Internet should be a place for them to pontificate without being held accountable for what they say. But I'd rather have a smaller group of commenters who provide a higher level of discussion. My blog doesn't always get there, but I try to push it in that direction. I'm a very hands-on moderator of Coal Tattoo.

SEJournal: You've been quoted as saying when other reporters zig — covering a big mining disaster, for example — you zag. What do you mean by that? Can you give some examples?

Ward: I heard that at an IRE conference many years ago — I wish I could recall who said it first. It's not my line. But for example, when the pack of journalists was chasing the Sago Mine Disaster story, my paper stepped back and wrote a project about how most coal miners who die on the job die alone, not in big disasters that get a lot of TV coverage. In the early days of the Freedom Industries spill, lots of folks were focused on the same old stories about the coal industry and lax regulation. I decided to focus more on the lack of emergency planning and accident prevention more broadly in all industries, and that produced some stories nobody else had.

SEJournal: You've written about the Appalachian Research Initiative for Environmental Science (ARIES) and its lack of transparency in disclosing its financial backing from the coal industry. What turned you onto that story and how did you pursue it? Do you ask questions of every study you read or report on?

Ward: I got into writing about ARIES because I heard a coal

industry lobbyist praising it — and talking up his own involvement in the project — during a West Virginia Coal Association conference a few years ago. I've tried to pursue it by talking to the Virginia Tech folks, who were running the project, about their goals, and by keeping up with what papers are (and aren't) published by researchers with ARIES funding. Journalists should be asking hard questions about every study they use in their reporting.

SEJournal: What advice can you give to environmental journalists just starting out in the field, knowing some may not be assigned to one specific industry or even beat?

Ward: Find a small, community-based and locally owned newspaper in your home state and work there. Avoid Washington and New York. Smaller communities need good journalism, and the stories you find will be much richer — so will your life. Think especially about reporting in and on the place you came from — a sense of place is all too rare in journalism these days. And try to stick around a while, so you can include a sense of history and context in your reporting. That's not necessarily the popular career path these days, but I think it works.

Ward, 46, a native of Mineral County, WV, has worked at the Gazette since 1991, and is the author of the popular Coal Tattoo (link: blogs.wvgazette.com/coalattoo), a blog on the mining industry. He has received numerous regional and national reporting awards, including being a three-time winner of the Scripps Howard Foundation's Edward J. Meeman Award for Environmental Reporting and a medal from the Investigative Reporters and Editors organization. He's covered the Upper Big Branch Mine, Sago and Darby Mine disasters and, in 2006, was an Alicia Patterson Fellow where he researched and reported on mining deaths. Ward was formerly long-time chairman of the Society of Environmental Journalists Freedom of Information Task Force. Follow him at @Kenwardjr.

"Inside Story" editor Beth Daley is reporter and director of partnerships at the New England Center for Investigative Reporting, a nonprofit newsroom based at Boston University and affiliated with WGBH News.



State officials gathered for a news conference in early February where Dr. Tanja Popovic, director of the Centers for Disease Control and Prevention's National Center for Environmental Health (at podium), joined EPA Regional Administrator Shawn Garvin and WV Gov. Earl Ray Tomblin (to her left) in trying to convince West Virginia residents that their water was safe from the coal-cleaning chemical Crude MCHM.

Photo by Lawrence Pierce, *Charleston (W.Va.) Gazette*

BookShelf



The Last Ocean: Antarctica's Ross Sea Project: Saving the Most Pristine Ecosystem on Earth

By John Weller
Rizzoli, \$50

Reviewed by JENNIFER WEEKS

Few Americans have probably heard of the Ross Sea, which is a deep bay of the Southern Ocean next to Antarctica. But many know about Chilean sea bass, a mild white fish that has been popular in high-end restaurants for more than 15 years.

That's the problem for SEJ member John Weller and conservationists working to protect the Ross Sea. "The Last Ocean" is a visually stunning tour of the Ross Sea, written by Weller and illustrated with his photographs.

This stretch of ocean covers 1.9 million square miles, much of it above a long, shallow continental shelf. It accounts for only 3.2 percent of the Southern Ocean, but is home to a huge share of the Antarctic's animals, birds and sea creatures.

"The Ross Sea is one of the most, if not the most, untouched parts of the world ocean. It is the best we have left, the cream of the crop," marine conservationist Carl Safina writes in the book's forward.

Antarctic toothfish, which can grow to more than 6 feet long and weigh up to 300 pounds, are the largest predators in the Ross Sea. Those fish and their slightly smaller cousins, Patagonian toothfish, are sold worldwide as Chilean sea bass (marketers invented the alias to make the fish sound more appealing).

Very little is known about their life cycles or how abundant they are, but longliners are already catching 3,000 tons of Antarctic toothfish in the Ross Sea every year. Weller and his colleagues fear that this growing fishery will disrupt the ecology of the Ross Sea.

Weller traveled to the Ross Sea four times and learned scuba diving and underwater photography to document how diverse and unspoiled this region still is, at least for now.

"The Last Ocean" is packed with arresting images taken on land, at sea, and underwater. The book's large format and the broad perspective of many of the photos convey this region's vastness. They also show very effectively how beautiful it is.

The images are interspersed with narrative describing Weller's travels and explaining the complex science of Antarctic life. Here is an explanation of the structure of sea ice, which looks barren from above but is the base of the food chain in polar regions:

"The solid layer of sea ice is sandwiched between a thick layer of loosely packed ice platelets below and a layer of snow above. The assemblage of platelets provides a haphazard complex of tiny caves and passages, protected from rough water by the weight of the ice, and from harmful ultraviolet rays by the snow above. Fertilized and sheltered, phytoplankton blooms in the platelets . . . Displaced by the ship's passage, overturned rafts of sea ice release a dark brown soup of tiny plants into the icy water."

And a description of the physical adaptations that enable Emperor penguins to dive 500 meters deep for up to 20 minutes: "Just before a dive, a bird races its heart rate to 250 beats per minute, saturating its body with oxygen. As soon as it hits the water, the Emperor drops its heart rate back to 60 beats per minute, and continues to slow its heart over the course of the dive . . . as it explodes from the water, it again accelerates its heart, flooding oxygen back into its system. Physiologically, the bird endures the equivalent of a human heart attack on each dive with no ill effects."

Weller also shows how difficult it is to operate in Antarctic conditions. Divers will appreciate his descriptions of cold-water logistics and operating under sea ice.

In one episode Weller is stunned underwater when a Weddell seal delivers a sonic blast straight into his ear (the seals may use sound to communicate, and perhaps to stun prey.)

Weller and conservationists want the Ross Sea to be declared a no-take Marine Protected Area to shield it from overfishing. Most readers will never go to Antarctica, but this book makes a powerful case that everyone should care about what happens there.

Jennifer Weeks is a Boston-based freelancer and a former SEJ board member.



The War on Science: Muzzled Scientists and Willful Blindness in Stephen Harper's Canada

By Chris Turner
Greystone Books, \$19.95 (paperback)

Reviewed by TOM HENRY

There's been talk about how this book should be read by all Canadians. I'd expand that by suggesting it be read by all North Americans.

Surely, it's not a new theme: Journalists, by nature, kick the tires around almost every state and federal administration, every political party, every PAC, industry lobby, labor union and (hope-

fully) environmental group to see who's delivering on the promises they make and who's being disingenuous – as they should.

It's called accountability.

What separates veteran journalist Chris Turner's "The War on Science: Muzzled Scientists and Willful Blindness" is his gut-hitting prose.

Turner's book is a harsh indictment of ultra conservative Prime Minister Stephen Harper's administration and the anti-science movement in general. It cites the impact of savage budget cuts on morale and in practical terms. It shows how forced silence has driven away some of the Canadian government's best scientists.

Turner distills and weaves his meticulous research into a hard-hitting narrative that reads almost like a detective story or a eulogy to science for his beloved country.

The book's only 170 pages – 134 of those pages are the actual narrative, followed by a chronology of Canadian history and 16 pages of source notes in small type. But it's chock full of insight into how administrations can both influence science and stifle it.

My interest in this book came following a tip from former SEJ member Craig Saunders of Toronto, a co-fellow on the week-long Institutes for Journalism and Natural Resources expedition around Lake Erie in 2008 who's become a good friend and, like me, someone who likes broadening his horizons and helping others do the same.

My newspaper, *The (Toledo) Blade*, is somewhat unique in how it tries to offer the Canadian perspective in its Great Lakes coverage from time to time, certainly not in any great detail but in a way that gives its Toledo-area readers at least a flavor of how cross-boundary issues are perceived on the other side of the border.

To give you an idea how Americans can become oblivious to Canada, consider that a mutual water agreement among Great Lakes governors in 1985 – one that became a framework for policy and planning issues for the next quarter century – had no input from the two Canadian provinces which also border the lakes.

But I digress.

What I expected was a Canadian version of books that have appeared in recent years critical of the former Bush administrations, the current Obama administration, and so forth. What I got was a compelling read that blew away the long-overplayed and much exaggerated perception of Canadian politicians being so much more attuned to environmental issues than those in the United States.

Turner offers an aggressive, repugnant assessment, one that left me wondering why U.S. residents spend so much time complaining about George W. Bush's spotty views on science, President Barack Obama's failure to provide the access to records and experts he promised – and not more time learning about the near-180 de-

gree reversal in the Canadian government's faith in science.

Canada's dramatic political shift not only has ramifications for boundary waters, such as the Great Lakes, but also could serve as a chilling blueprint for what could happen in the United States under the right set of circumstances – not a far-fetched idea, given how longtime Republicans themselves bemoan the direction of the party and how it has strayed from Ronald Reagan principles.

After taking readers through a stunning odyssey of Canada's growing contempt for science in the high-level political arena – from the closure of Arctic research stations to slashed budgets and power for agriculture and fisheries, while at the same time promot-

Canada's dramatic political shift not only has ramifications for boundary waters such as the Great Lakes, but also what could happen in the U.S.

ing more drilling in the Arctic and other sensitive areas – Turner holds nothing back in his summary of the situation.

"Stephen Harper's Canada is a country that has become a global system of callous, profit-driven hostility to sound environmental stewardship, a pariah state that lays ruin to international climate talks and abandons its sworn commitment to greenhouse gas reductions and opposes any measure that appears to take the planet's ecological health seriously," Turner wrote.

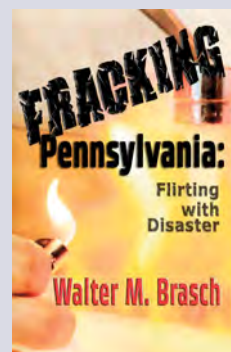
He adds: "Stephen Harper's Canada is a country, alone among the democratic nations, that bars its scientists from discussing their work in public and sends spin doctors to ensure that message discipline trumps scientific fact even at academic conferences. It is a country where environmental advocacy is foreign and dissenting opinion treated as treasonous, a country where scientists march in the streets to reassert the primacy of the scientific method and doctors need to disrupt press conferences if expert analysis is to be heard in discussions of health-care policy."

The book could have been better if there had been more cooperation from the Harper administration for a meaningful dialogue.

One gets the impression that what's happening in Canada goes well beyond the soft-pedaling and sugar-coated public relations efforts that have emerged in the United States.

It makes a case for how power has been corrupted and legitimate science – or, at least, whatever aspects of it emerge as inconvenient truths or barriers to industry – is mocked and muzzled. There are, indeed, lessons to learn for the United States, especially when one examines how quickly things have apparently unraveled in Canada.

Others with SEJ ties are in support of this book. Famed activist-journalist David Suzuki, a keynote at SEJ's 2000 conference in East Lansing, MI, is quoted on the book cover as saying it should



"Fracking Pennsylvania:

Flirting with Disaster"
by Walter M. Brasch

Greeley and Stone, Publishers
<http://www.walterbrasch.com>

Dr. Brasch combines scientific evidence, extensive interviews with those affected by fracking throughout America, and an investigation into the collusion between politicians and Big Energy.



"The Melting World: A Journey Across America's Vanishing Glaciers"

by Christopher White

St. Martin's Press
<http://bit.ly/MeltingWorld>

"An urgent wake-up call to nations across the globe that share responsibility for climate change and a heartbreaking elegy to a vital component of ecology." — BOOKLIST

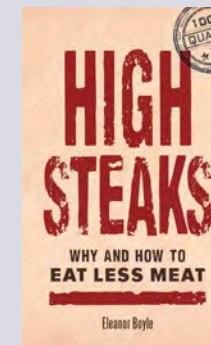


"How to Raise Poultry"

Everything You Need to Know
by Christine Heinrichs

Voyageur Press
<http://bit.ly/HowToRaisePoultry>

This book gives detailed history and breed information for the beginner, the experienced poultry keeper and those for whom poultry dances in their dreams. Revised and updated from the 2009 edition.



"High Steaks: Why and How to Eat Less Meat"

by Eleanor Boyle

New Society Publishers
www.newsociety.com/Books/H/High-Steaks

Timely and compelling, "High Steaks" offers powerful environmental evidence for producing livestock more sustainably and compassionately, and for eating less and better meat.

BookShelf

be required reading, as is Andrew Niki-foruk, whose book, "Tar Sands: Dirty Oil and the Future of a Continent," won SEJ's 2008-2009 Rachel Carson Environment Book Award.

Turner, who lives in Calgary, is author of two other books, "The Leap: How to Survive and Thrive in the Sustainable Economy" and "The Geography of Hope: A Tour of the World We Need."

Tom Henry is SEJournal's book editor and a former SEJ board member. He has been associated with SEJ since 1994.



The Science Beneath the Surface: A Very Short Guide to the Marcellus Shale
By Don Duggan-Haas, Robert M. Ross, and Warren D. Allmon
Paleontological Research Institution,
\$18 (paperback)

Reviewed by
SUE SMITH-HEAVENRICH

If you are looking for a quick reference to shale, this is it.

"The Science Beneath the Surface" presents information about the geology of shale as well as that of drilling, water, risk and climate change in language the average reader can understand in a non-partisan way.

One point the authors make is there are still significant gaps in basic knowledge, and there are significant disagreements about how to interpret data about gas extraction from Marcellus shale.

The biggest challenge: combing through the vast amount of information and wrestling it into one thin volume. While shale science is grounded in geology, research on gas extraction includes environmental studies, land use, agriculture, water, air, human health, engineering – each of which could demand an entire book.

The authors look at the geology of Marcellus shale and the deposition of marine life that, upon decomposition, produced the methane and other hydrocarbons trapped in the rock.

This is not permeable stone; to release the gas you need to break the rock apart.

Besides discussing the geology and natural fracturing of the formation, they get into math: How much gas is trapped in the shale?

Those estimates, ranging from a high of 516 trillion cubic feet, or tcf, to 85 tcf lie at the heart of some arguments about whether drilling is viable, especially given costs to comply with environmental regulations.

Geology matters. The properties of the sediments deposited 390 million years ago affect how that gas is extracted and potential environmental risks.

For example, there are naturally occurring radioactive materials trapped in the shale, and volatile organic compounds released during gas extraction and production.

Readers who have never been on a drill site will get an up-close-and-personal introduction to the technology of shale gas extraction.

First, the authors settle the debate on just how "old" fracking is. It's been done for decades. But the modern advancement that led to the current boom came after traditional hydraulic fracturing was combined with horizontal drilling in the late 1990s in the Barnett Shale. That showed how previously untapped reserves could be reached and extracted.

After providing a literary tour of well pad construction and drilling rigs, the authors talk water. More than 20 million people get their water from areas potentially affected by Marcellus gas development, so this is a hot issue in the drill zone.

One point they emphasize is that not all water withdrawals have equal impact on watersheds and the environment. Just as important is the question of how to dispose of drilling waste fluids, which contain heavy metals, radioactive materials, volatile organic compounds, and dissolved solids.

Water quality isn't the only concern; the heavy construction on drill sites can create erosion problems.

Shale gas drilling creates air quality problems as well, contributing particulates, ozone and greenhouse gases into the atmosphere.

There are solid waste issues, too. Cuttings not buried correctly can impact soil and groundwater, as well as wildlife.

Fracturing the shale also creates the potential for human-induced earthquakes. A few earthquakes have been documented as a result of injecting fluids into a well during drilling.

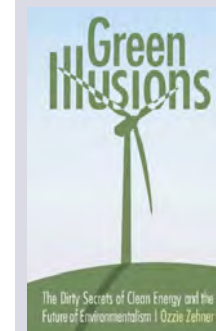
But injecting fluid into disposal wells has caused a lot of seismic activity, including earthquake "swarms" of a thousand or more quakes over short periods of time.

One chapter is devoted to a life-cycle analysis of drilling and the impacts of gas extraction on climate change.

The question isn't whether gas is "better" than coal. It is whether changing to gas will reduce climate change enough to offset the increased risk of water and air pollution to the people living near wells, compressor stations, pipelines and other infrastructure.

It doesn't matter whether you are writing about Marcellus shale – or the Bakken, Haynesville, Fayetteville or Barnett deposits – this book is useful. It does a great job explaining the basic science.

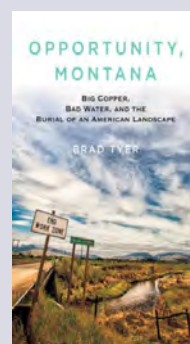
Sue Smith-Heavenrich writes about science and environmental issues from atop the Marcellus Shale in upstate New York.



"Green Illusions: The Dirty Secrets of Clean Energy and the Future of Environmentalism"
by Ozzie Zehner

University of Nebraska Press
www.greenillusions.org

Green Illusions delivers a backstage tour of solar, wind, hydrogen and electric cars. Are these technologies the solution to growth and productivity, or the problem?



"Opportunity, Montana: Big Copper, Bad Water and the Burial of an American Landscape"
by Brad Tyer

Beacon Press
http://bit.ly/11560vB

A memoir exposé examining our fraught relationship with the West and our attempts to redeem a toxic environmental legacy.

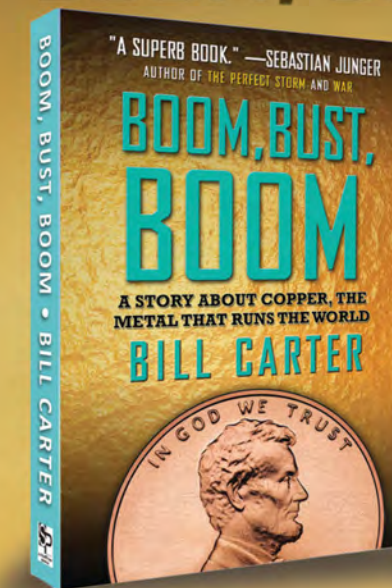
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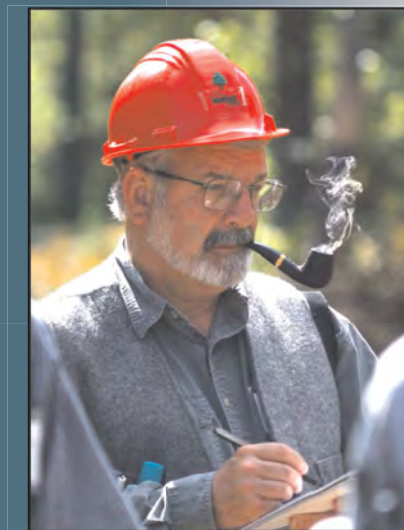


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Sundance Festival Sparse on Enviro Themes

By JoANN VALENTI

Perhaps it's no huge surprise — with climate change coverage seeming to falter on broadcast news over the last year — that even indie filmmakers' interest in environmental themes has waned. The January 2014 Sundance Film Festival in Park City, UT, the 30th, was a case in point — short on environmental topics, despite more than 12,000 submissions, with 123 feature-length films and 66 shorts selected for screening.

Of the two dozen or so films in the science category, which overlaps with nature/climate, none referenced climate change or global warming. Some addressed health issues (disease, blindness, diet), while industrial pollution, resource extraction disasters and resulting jobs/culture crises served as the backdrop for several others.

Of 24 recent projects supported by the Sundance Institute itself, half a dozen are environment or science themed. The 2014 Alfred P. Sloan Award for science in film, "I, Origins" from director Mike Cahill, came through the labs. Cahill is the first two-time winner of the prestigious award. His first film, "Another Earth," received limited distribution. I, Origins, a drama featuring a molecular biologist researching eye evolution, was picked up by Fox Searchlight. Sloan awards only feature narratives, not documentaries, in their effort to go beyond "preaching to the choir."

Documentaries at past Sundance festivals have been the go-to for tackling key environment issues. Only a few this year added depth to the stories behind the news. "Marmato" follows mountain village Columbians using traditional methods to mine rich deposits of gold under siege by a Canadian company, in cahoots with the government to strip mine and level their homes, culture and history. "Fishing Without Nets" tells the Tom Hanks' "Captain Phillips" story from a Somali fisherman's perspective. Waters polluted by nearby passing oil tankers have forced sustenance fishers into



The documentary film "Marmato" follows mountain village Columbians using traditional methods to mine rich deposits of gold under siege by a Canadian company in cahoots with the government to strip mine and level their homes, culture and history. Photo: courtesy of Calle Films



The documentary film "Vanishing Pearls: The Oystermen of Pointe A La Hache" details the impact and devastation of the BP Deepwater Horizon oil spill on a primarily African American fishing community. Photo: courtesy of Perspective Pictures

piracy to feed their families. They're not all lovable pirates, but their desperation is clear.

"Vanishing Pearls: The Oystermen of Pointe A La Hache" is a gem from the Slamdance fest celebrating its second decade — across on Main Street — in conjunction with the larger Sundance. "Vanishing Pearls" details the impact and devastation of the BP Deepwater Horizon oil spill on a primarily African American bayou fishing community. Still recovering from Katrina, then hit by Hurricane Isaac, hard working oystermen fight to preserve their independence from sharecropper status. The group's spokesman laments, "Generations of [oyster fishermen] were taught to never abuse the land." Shut out of negotiations for fair compensation by a hired gun for BP, federal agency acceptance of a doctored report on the Gulf's recovery and an adversary with limitless resources, the once proud community ceases to exist. "We used to say there were no grocery bills on the bayou," one fisherman says. Now food stamps fend off starvation.

"Young Ones," a feature premiere on both potentially relevant genre lists, dramatizes a future barren Earth where water is the top commodity resource. As with gold and oil, whoever controls the water supply holds power and will drain the soul from anyone confronting their greed. Whether in Columbia, Louisiana or the future, indie filmmakers see the loss of natural resources as the loss of life for communities, the demise of heritage so others can get rich.

That's a message consistent with festival founder and cultural icon Robert Redford's aim to support independent voices, although he said at the opening press conference, "I try not to blend my environmental work with our film programming." Still, he also lamented, "We haven't left the next generations much to work with."

JoAnn Valenti is an emerita professor, former SEJ Board member and SEJournal Editorial Board member. Go to www.sundance.org/festival for more information.

News Futures 2014...continued

Panelist Coral Davenport, a reporter who recently moved from *National Journal* to *The New York Times*, said the coming EPA power-plant regulations would offer Republicans a new opportunity to accuse the Obama administration, and by implication Democrats, of waging a "war on coal." GOP political operatives, she said, viewed such attacks as the party's "right hook" going into elections.

But Davenport also noted that in the 2012 elections, despite large efforts and big spending, "the 'war on coal' campaign didn't work." She said she thought the Obama administration, seeing this, would be encouraged to push its efforts to regulate carbon emissions from coal.

Dennis Dimick, an executive editor at *National Geographic*, which had scheduled a major piece on coal for March, reminded the audience that on a global level, coal use was growing faster than use of any other energy source, including renewables. "This is a problem that is not going to go away."

Several other panelists agreed with Dimick's assessment. Andrew C. Revkin, a *New York Times* blogger (Dot Earth) and a Pace University fellow, had recently talked with China's top climate strategist. Revkin said the hunger for cheap energy was changing coal from a once-local commodity to a global one.

Keystone pipeline, fracking, water on the news agenda

Most panelists agreed that the Keystone XL pipeline (really a proxy for the issue of Canadian oil sands development ... and ultimately a proxy for the climate issue) would make more news in 2014. (And since the January crystal ball session, it has — with a major State Department environmental statement intensifying but not ending debate.)

But panelists did not agree that settling KXL would settle the tar sands debate. Pearl thought the Canadian oil would reach market no matter whether the pipeline was built or not. Goldenberg, however, said pipeline approval did matter: "Every day that the

oil stays in the ground ... is another day the oil stays in the ground. And for the environmental movement that's a small victory."

Panelists also generally agreed that fracking would keep making news in 2014. The combination of horizontal drilling and hydraulic fracturing of shale formations has spurred a boom in U.S. production of both oil and gas in recent years — with attendant environmental controversies. That is a story likelier to unfold at the state-by-state, rather than the federal, level.

Dimick made the point that water was likely to be a key focus of the climate story in the coming year. California's drought, he said, was merely an example of a broader West-wide drought. While news outlets are likely to focus on drought's impacts on cities and agriculture, Dimick said it was a mistake to ignore drought's environmental impacts.

What 'should' make news

Panelists tried to distinguish between stories that should be news and stories that would actually make the headlines. Revkin, for example, said a key part of the sustainability story was demographic change — people building or moving into harm's way. That was the case in November's super typhoon Haiyan, he noted. The unusual violence of the storm had eclipsed the fact that in recent decades large populations had moved to the area where it did the most harm.

In the U.S., he said, the media seemed to be missing the tax incentives for second homes in wildfire zones or Congressional reluctance to use flood insurance costs to urge people out of areas at risk for flooding. Nobody thought this would inspire major media coverage.

Pundits and savants know that some things are always sure to make news. The panel discussion was moderated by Douglas Fischer, editor of *The Daily Climate*. He asked whether 2014 would be the year of celebrity invasion of environmental news. Examples were plentiful. Revkin noted that Chinese celebrities had gotten the government to stop serving shark-fin soup. Efforts by Neil Young, Mark Ruffalo, and Yoko Ono to stop fracking were another example. Because so many celebs lived in the Catskills, Davenport observed: "There still isn't fracking in New York State."

The Jan. 24 event was organized under the leadership of SEJ board member Meaghan Parker and hosted by the Wilson Center, a nonpartisan academic nexus established by Congress but funded by both public and private funds. The center's Environmental Change and Security Program has been a leader in connecting the dots between environmental issues and geopolitics.

Joseph A. Davis has written about environment, energy and natural resources in various capacities since 1976. He currently edits SEJ's Watch-Dog newsletter and curates SEJ's daily EJToday Headlines.

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Networking...continued

volved in related fields: academia, urban planning, or are general journalists curious to learn more.”

The closed-group format allows us to ask a few questions before admitting a new person to the group. If he or she is already an SEJ member, easy-peasy; if not, we typically follow SEJ’s membership eligibility guidelines in making a decision.

Similarly, Christy George and Terri Hansen use a closed group on Facebook to keep the metro Portland SEJ group on track.

At this writing, SEJ members across the country are planning local events. If you’re interested in doing the same, contact SEJ at sej@sej.org. SEJ staff can give you a hand with contacting SEJ members using online tools such as Facebook or Meetup.com, and other facets of organizing face-to-face gatherings.

And SEJ staff and board thank the members who have volunteered to organize local and regional gatherings. At press time that list included:

- Central Pennsylvania & Delaware: John Messeder
- Colorado: Rachel Cernansky
- Ohio, Lower Great Lakes: Karen Schaefer
- New Mexico: Jennifer Rabinowitz
- New York metro area: Adam Aston, Emily Gertz
- Northern New England: Madeline Bodin
- Seattle: Ashley Ahearn, Brett Walton
- Southern California: Hilary Sloane
- Texas: Lana Straub
- D.C. metro area: Meaghan Parker, Kate Sheppard

Concluded Ahearn: “It’s really inspiring to see members coming together across the country. SEJers are awesome, and we’re all doing hard work. Sometimes the best support any organization can give is good company. We want to do more regional gatherings just like this.”

Emily Gertz is a freelance journalist and author based in New York City. Her work has appeared in Popular Science, Popular Mechanics, OnEarth, Grist, Scientific American, Rolling Stone, and many other publications. Gertz joined SEJ in 2006 and is in her first term on the SEJ board.

Reporter’s Toolbox...continued

distance interviews.

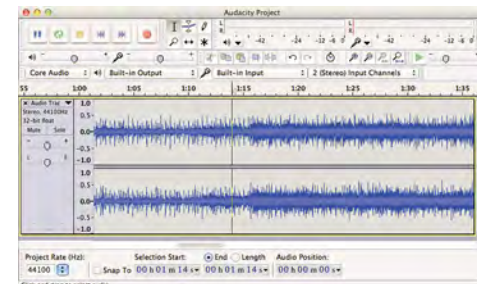
Many of these less expensive digital recorders have built-in mics that are perfectly adequate for recording good sound. But if you want to get up close and personal with the sounds of nature, you may want to invest in a shotgun mic. You’ll find in-depth comparisons of audio recording devices and microphones at Transom.org (www.transom.org). There’s also information about how to edit your audio once you’ve collected it.

Easy audio editing programs

Audio editors allow you to easily remove long pauses, shorten sound bites, even layer sounds for a richer montage. They work in much the same way as a video editing program, allowing you to visually cut, paste and move audio around from one place to another, and save as files you can then add to your text, podcast or slide show.

Some of the simplest audio editing programs have been around

for years, like the free, open-source Audacity (audacity.sourceforge.net), which many stations still use for pulling basic soundbites. Some freelancers favor the free version of WavePad, which works with pretty much all audio formats, including WAV files: www.nch.com.au/wavepad/index.html?gclid=CNm667brx7wCFWxo7Aod0F4Aag. And many radio reporters have moved from costly ProTools or Adobe Audition to Hindenburg, a new set of low- to medium-cost audio editing programs designed specifically for radio: hindenburg.com. Most if not all of these programs are available for both Mac and PC.



Audacity is one of several free or inexpensive audio editing programs that let you manipulate your sound and create audio files for podcasts, online use, even slide shows. Photo: Courtesy Audacity

Using audio without investing a dime

Finally, you don’t have to invest a penny to use audio in your storytelling. There are a surprising number of open-source audio recordings out there that can be used in part or in toto without violating copyright.

For example, I’ve used snippets of the 1969 moon landing broadcasts recorded by NASA that I found on YouTube. Some institutions have audio libraries, like the Cornell Laboratory of Ornithology’s thousands of recorded bird calls (www.birds.cornell.edu/AllAboutBirds/studying/birdsongs) or the vast audio archive at the Library of Congress (www.loc.gov/tr/record).

Whatever your investment of time or money, using audio can enhance your storytelling. And SEJ’s Lana Straub says it can also change the way you report.

“It’s amazing what you can hear with a set of headphones and amplification,” says Straub. “It’s made me a better listener, a better talker and a better journalist.”

Karen Schaefer is an independent public radio producer based in Oberlin, Ohio. Her work has appeared on NPR, PRI’s The World, the BBC, the CBC, and Pulse of the Planet.

Teaching...continued

ing to Julie and me isn’t a good plan. I also tell students that each of them will turn in a team evaluation at the end of the term. Students have to distribute 10 points among the three team members based on the amount of work that each one does. I think this also helps head off complaints about people not doing their fair share.

Teams work on their ideas from about the third week of the term until the end. We find that forming teams before the third week is a mess because there’s too much fluctuation in enrollment early in the term. Around the middle of the term, we have each team post their ideas on our class website for feedback. Journalists who like to scoop the competition often resist the idea of sharing their business ideas so publicly. I tell them that entrepreneurs take the opposite approach. They need to talk to as many people as possible before anyone will give them development money

We also require each student to comment on the blog about an-

other team’s idea. These comments have to include a suggestion for improvement. We share the blog link widely and encourage anyone who’s interested to offer feedback. Your comments would be much appreciated! We keep the amount of writing that students do about their news innovation ideas relatively short. Instead, we encourage students to revise their ideas based on feedback they receive on the blog, in preparation for our final pitchfest.

The Pitchfest: A week before the pitchfest, we require each team to record a three-minute pitch video and post that to YouTube. This assignment has a rubric that forces students to polish their pitches before they stand before the judges. Modeled after the SEJ conference pitch slams, our News Innovation Pitchfest is a public, festive occasion held in a special gathering space that’s got lots of screens and comfy chairs. We invite everyone at the university to watch students pitch for a panel of judges that includes local editors, entrepreneurs and sometimes business professors.

Members of each team have three minutes to pitch and are allowed just one slide visualizing their idea. We ask the team to designate one lead pitcher. The other two team members stand up beside the pitcher and help field questions from the judges.

We allow about 10 minutes for discussion with the judges. This is the most important part of the pitch experience. To keep students engaged even when their team isn’t pitching, I set up a google spreadsheet and require all students to give each team feedback on their pitch.

When the last pitch has been made, we send the judges to a quiet spot where they can deliberate in confidence before returning to unveil their choice and explain how they arrived at it. This discussion usually takes at least 10 minutes. While the judges are deliberating, we have some low-key discussion about how students’ opinions about news and themselves as journalists have changed over the three-month term of our course.

At the end, we announce two Knight Challenge winners – a Judge’s Choice pick and a People’s Choice winner, chosen by anyone in the audience using poll.everywhere.com, an online polling site.

Lessons Learned: So, that’s how we teach news innovation and end our University of Michigan course on a high note. We feel that this experience has value to students on multiple levels. They learn to work in teams, to be creative in a different way, to problem-solve, to think entrepreneurially, to give and receive public feedback, to practice iterative design, to record and post a professional-ish YouTube video, to think on their feet and field questions. I love this process, because it engages students in a positive, empowering way with the opportunities created by revolutionary change in the ways we define news.

I have even tried a similar approach to teaching news innovation with 8th grade Arab American journalists at a public school in Dearborn, MI. <http://bit.ly/1kiFELV>

In May, I’m heading to China as part of a delegation of doctoral students from Michigan State University to talk with Chinese educators about teaching news innovation. If you have suggestions about how to approach this subject with the Chinese, and if you know of people in China I should meet, I am eager to hear from you.

Emilia Askari is a former SEJ president who has taught environmental and public health journalism as an adjunct at the University of Michigan for almost two decades. She is now a doctoral student studying educational technology and game design at Michigan State University.



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Freelance Files...continued

thing about complimentary media registration, contact the organization and ask. Some groups may require an assignment letter from an editor, while others will say yes once they see evidence (typically a website or clips) that you're a working journalist.

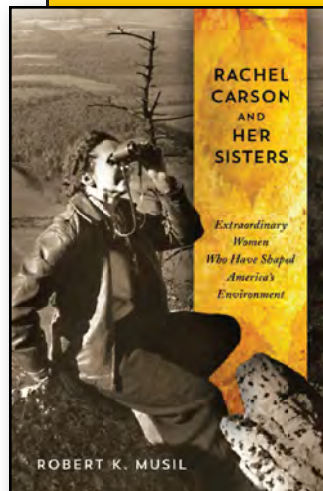
Placing stories based on the conference in advance is another good way to cover costs. Read the program carefully and contact editors who may be interested in particular sessions. Keep in mind that some outlets routinely publish stories that are straightforward meeting reports ("A study presented at the annual American Geophysical Union meeting documents that Arctic sea ice is melting at a record pace,") while others want stories that put information from the conference into a larger context ("When will the Arctic be ice-free in summer?").

Stories from outside of the conference can also pay for your trip. I attended a National Association of Science Writers conference in Spokane, WA, partly because I knew it was a few hours from Hanford, where plutonium for nuclear weapons was manufactured from the 1940s through the late 1980s. I sold a story about preserving Hanford's historic B reactor (the world's first full-scale plutonium production reactor) to *High Country News*, and another to *Backpacker* magazine about turning land around former military sites into public recreation areas. The side trip added an extra day to my time in Washington state, but *Backpacker* paid for my car rental and a night's stay near Hanford, and fees for the articles more

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By Robert K. Musil



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—Bill McKibben, author, *Oil and Honey: the Education of an Unlikely Activist*

ROBERT K. MUSIL is President and CEO of The Rachel Carson Council, Inc., senior fellow at the Center for Congressional and Presidential Studies, American University, and author of *Hope for a Heated Planet*. He is the former CEO of the Nobel Peace Prize-winning Physicians for Social Responsibility and an award-winning journalist.

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<http://bit.ly/1iimG61>

than covered my conference costs.

Other preparation tips: Find out what people wear at the meeting so you can dress appropriately, especially if you're going on field trips, planning to do interviews or hoping to chat up editors. Update your website and social media pages before you go, and bring business cards. And if you'll be using gear at the meeting, such as a digital recorder or camera, make sure you're comfortable with it in advance.

At the scene

Once I get to a conference, I've read and marked up the most current version of the program, highlighting my high-priority sessions and alternate choices in case some sessions fill up. I also try to block some free time during each day of the meeting to wander the halls, browse exhibits and catch up with friends who are also attending. Well-timed breaks help me stay focused through long days in windowless meeting rooms, especially if I can get out of the building. (Buying souvenirs for my kids is a good excuse to sneak away for an hour.)

If the meeting has a press room, check there daily to pick up papers from panelists and see whether any sessions or speakers have canceled or rescheduled. Press rooms often offer space for journalists to do onsite interviews; if you have any arranged, reconfirm the time and place with your source and check out the room so you'll know what to expect.

Some journalists file stories directly from conferences, but my deadlines are usually longer. However, at the end of every day I review my notes from all of the sessions I've attended, especially if I'll be using them for a story, and make a list of follow-up tasks to do from home. This is especially important if I'm writing a complex story based on presentations at the conference, and may be able to catch a speaker to ask more questions while he or she is still at the meeting.

Socializing at conferences can be just as important as the information that you take away from panels and tours. But that doesn't have to mean plunging into huge crowds at receptions. If you're an introvert (like me), small meetups for drinks or a meal with a few people can be more rewarding and enjoyable. And if it's your first time at a particular conference, you've got a ready conversation topic – ask your companions how long they've been coming to the meeting and what they've found most interesting so far.

Post-conference

Tasks after a meeting are pretty straightforward. Turn in any stories that are due immediately. Review your materials for any longer-term assignments while the meeting is still fresh in your mind. Next, if you have any new story ideas from the meeting, get those pitches out. Finally, collect all of your receipts for meals and travel, and store them for tax time. And start thinking about where to go next.

Jennifer Weeks is a freelance writer and editor specializing in environment, energy, science and health, and a former SEJ board member. She lives near Boston, Mass. and has written for Slate, Discover, Popular Mechanics, Boston Globe Magazine, Science News for Students, Congressional Quarterly Press and many other outlets.

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Jason Fillhart of the West Virginia Water Research Institute collects a water sample from the Elk River in Charleston, W.Va., after thousands of gallons of a chemical used to clean coal escaped from a tank located farther upstream on Jan. 9, and threatened the water supply of close to 300,000 people living in the nine counties around the state's capital. One of those directly affected by the spill was *Charleston Gazette* staff writer Ken Ward, who not only reported on the environmental disaster but was also forced to live with its consequences daily. He shared some of his experiences with *SEJournal* starting on page 6.

Photo by Raymond Thompson, West Virginia University