

River Crossings

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Impacts of Navigation Traffic on Riverine Fishes

Recently published work of several scientists at the USGS-Upper Midwest Environmental Sciences Center in La Crosse, WI sheds new scientific light on the impacts of navigation traffic on riverine fishes. Much of this information was intuitively known through the expert opinion of biologists and resource managers who developed recommendations for the Upper Mississippi River Environmental Management Program in the early 1980's. Some 26 years later it is gratifying to know that those recommendations are now supported by science.

What follows are excerpts from the recent paper published in the *Canadian Journal of Fisheries and Aquatic Sciences*.

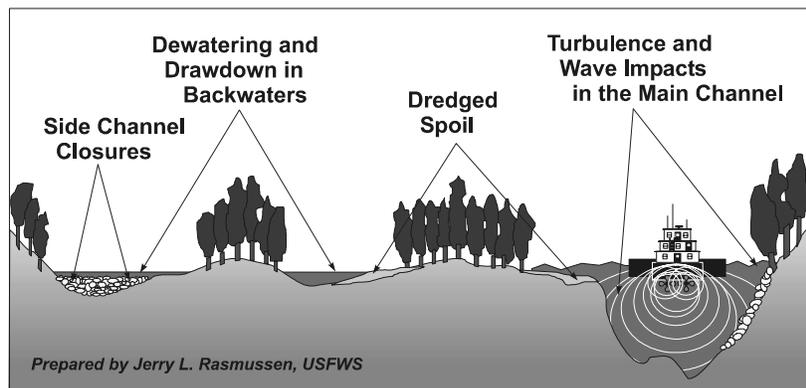
Some taxa differed in abundance between large secondary channels and the navigation channel in ways that suggest management strategies for large rivers. For example, species density and the relative abundances of channel catfish, the buffaloes, redbones and sauger tended to be distinctly greater in the secondary channels than in the navigation channels, at least over some intervals of traffic-disturbance frequency. Those results suggest that maintenance and

enhancement of relatively free-flowing secondary channels, especially where traffic intensity is high, may benefit the production of those and perhaps other species.

Large woody debris is undeniably important to some lotic fishes because it structures predator-prey interactions and provides shelter and substrate for the production of food organisms. For those

reasons restoration of large woody debris may provide means to increase production. Snag (principally large woody debris) prevalence was the most obvious distinguishing physical difference between channel types that the researchers were able to measure.

Rheophilic fishes are likely to be responsive to spatial patterns in flow velocity. River bedforms and flow interact to create variable but predictable patterns in near-bottom flow velocity. For example, the leeward



Navigation projects are generally maintained by directing most of the flow into the main channel in order to keep it deep enough for commercial tow traffic. This leads to loss of habitats through closure of side channels, dewatering of flood plains and backwaters, and filling of habitats with material dredged from the navigation channel.

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faces of sand dunes that approach the angle of repose create areas of flow separation that may provide bioenergetic refuges for fish. Further, the researchers hypothesized that the same forces that result in flow separation and the selective sorting of sediment particles based on mass may also create hydraulic traps that allow the accumulation of macroinvertebrate drift within bedform troughs and that any such trapping may increase the foraging efficiency of invertebrate-feeding fishes.

Changes in relative abundance due to disturbances from tows have at least three plausible causes. First, disturbance by towboats may induce transient avoidance reactions. Such transient avoidance reactions occur in channel catfish, but the energetic costs of those reactions are unknown. Second, mortality may result when some fish are entrained through the propellers of towboats. In the Upper Mississippi River, non-zero entrainment mortality rates have been estimated for shovelnose sturgeon, gizzard shad, skipjack herring, and smallmouth buffalo. Last, high-frequency disturbances may result in persistent partial abandonment of otherwise suitable habitat. That abandonment might occur as a direct result of avoidance reactions that have a higher energetic cost than can be met within the navigation channel or as an indirect result of alterations to food quantity or availability.

The energetic costs of high-frequency disturbance may be ecologically consequential. For example, the metabolic costs of elevated activity may result in reduced somatic growth rates even when more food resources are available to highly active populations. Elevated activity costs may have broader indirect effects on populations and communities where early growth influences the flux of juveniles to the adult stock.

If physical resources are limiting to populations, then river rehabilitation efforts may be an effective way to enhance biological production and biodiversity. If another resource (e.g. food) is limiting, then rehabilitation efforts that fail to substantially augment that resource are unlikely to yield measurable returns. Frequently, there is too little scientific information about ecosystem function and limiting factors to predict which management strategies are likely to maximize the return on investment.

The increased species density and relative abundance in large secondary channels certainly suggests better environmental quality there than in the navigation channel for some fishes. If limiting resources are more abundant in large secondary channels than in the main channel, then rehabilitation of occluded secondary channels or creation of new ones would increase the production of rheophilic fish populations and perhaps increase species evenness at small spatial scales. Results of the study also clearly suggest that high-frequency navigation disturbance alters at least the spatial distribution and perhaps population size and production of some species. Unfortunately, the researchers could only pose hypotheses about the underlying mechanisms of those biological responses to disturbance. Given the present uncertainty about any population-level consequences of entrainment mortality, they hypothesized that production of shovelnose sturgeon and perhaps other rheophils would benefit from any rehabilitation strategies that exploit hydraulic

cues to attract them out of the navigation channel and into main-channel borders or secondary channels.

The feasibility of any such rehabilitation strategies requires a far better knowledge of the specific factors that attract and support those species. For other species (e.g. channel catfish and sauger), there is no evidence of entrainment mortality. Their patterns of abundance were likely the consequence of sublethal behavioral responses to tow traffic. Those species tended to be more abundant in the secondary channels. The researchers hypothesized that expenditures on active metabolism of these species are lower in secondary channels than in navigation channels having high tow-disturbance frequencies. Further, the researchers hypothesized that production of food resources for these species is also greater in secondary channels than in frequently disturbed navigation channels. Finally, they hypothesized that experimental restoration of permanent flow in a sufficiently large, occluded secondary channel,

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Mississippi Interstate Cooperative Resource Association
(MICRA)
P.O. Box 774
Bettendorf, IA 52722-0774

MICRA Chairman

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Bill Reeves, Tennessee River Sub-basin Representative, Nashville, TN

Michael Mac, USGS, Biological Resources Division, Columbia, MO

Mamie Parker, U.S. Fish and Wildlife Service, Washington, D.C.

Coordinator for Large River Activities

Jerry L. Rasmussen, U.S. Fish and Wildlife Service, Rock Island, IL

MICRA email: ijrivers@aol.com

MICRA Web Site: <http://www.waux.cerc.cr.usgs.gov/MICRA/>

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within a reach otherwise devoid of flowing secondary channel, would result in measurable increases in populations size and production of those species.

Source: Gutreuter, S., J.M. Vallazza, and B.C. Knights. 2006. Persistent disturbance by commercial navigation alters the relative abundance of channel-dwelling fishes in a large river. *Canadian Journal of Fisheries and Aquatic Sciences* 63(11):2418-2433.

Groups Ask Congress to Close MRGO Shipping Channel

Louisiana officials and environmental groups in early December urged Congress to close the controversial Mississippi River-Gulf Outlet (MRGO) shipping channel and restore surrounding wetlands to prevent future flooding disasters. A report released by Louisiana State University (LSU) scientists supports this recommendation. The shortcut between the Mississippi River and the Gulf of Mexico (see diagram below) is seen as a major contributor to levee failures in New Orleans and St. Bernard Parish after Hurricane Katrina.

But while the U.S. Army, Corps of Engineers (Corps) agrees that closing the MRGO would save money and help the environment, their preliminary report on the issue concludes that the MRGO does not contribute significantly to peak storm surge during severe storms. But the report does say that “Additional measures to provide opportunities for hurricane storm surge protection and ecosystem restoration may complement the MRGO channel closure, including wetland shoreline protection, freshwater diversion, and dedicated dredging for coastal habitat creation.”

Rep. Charlie Melancon (D/LA) said that he was encouraged that the report included specific recommendations for restoring the coastal wetlands and recreating the wildlife habitat degraded by MRGO. Sen. Mary Landrieu (D/LA) said the report affirms that “the MRGO canal is an open wound that needs to be closed in an intelligent way before it exposes our coastal communities to further destruction.” “There is an overwhelming consensus that the MRGO channel contributed tremendously in the destruction of the region,” she said, and “We actually have money in several bills to help the closure.”

Environmental groups said the Corps’ report is inadequate in light of New Orleans’ continued vulnerability to hurricanes. They say the Corps should use already-appropriated funds to begin closing the channel. “The Corps often says that it doesn’t make the big decisions, Congress does,” said Mark Ford, director of the *Coalition to Restore Coastal Louisiana*. But he said, “Congress has made the decision that \$75 million is available to start closing the MRGO. Now all the Corps has to do is listen.”

Environmentalists also say the report does not take steps to address storm surge or wave attacks on vulnerable levees. “Instead of fixing the problem, the Corps has decided to ignore science, in favor of taking baby steps,” said Melissa Samet of *American Rivers*. “This half-hearted approach leaves thousands of people who live in New Orleans and St. Bernard Parish at risk and calls into question just how serious the Corps is



Diagram showing how the MRGO would look if its banks and the cypress swamps near its levees were restored. *Environmental Defense image.*

about providing real hurricane protection to the area.”

But business and shipping groups oppose the channel’s closure. They say it is the only viable alternate route when there are problems with the New Orleans lock. They argue that gates could be built to prevent flooding and boost the channel’s economic potential. While barges do not use MRGO unless there is heavy traffic or problems with the industrial locks in New Orleans, some say MRGO’s continued availability is key given that the 85-year-old Industrial Lock on the Inner-Harbor Navigation Canal (IHNC) has outlived its design life by 35 years.

“We’re not surprised but somewhat disappointed,” said Raymond Butler, who heads the *Gulf Intracoastal Canal Association*. “It’s understandable the conclusions they reached, but we are hoping that through the coming study period the importance of the Inner-Harbor lock to the closure of MRGO will become apparent. ... Once the Inner-Harbor lock is addressed and a replacement is imminent, we don’t have a problem at all.”

According to the Corps report, maintaining the MRGO costs an average of \$12.5 million per year, while maintaining the authorized dimensions only produces approximately \$6.2 million per year in transportation efficiencies. But the Corps also acknowledged that a total navigation closure of the MRGO “could be of national significance due to the effect it would have on industries and national security.” “Without an alternate route, inland navigation would be affected for routine IHNC Lock closures



Map of the MRGO project.

as well as by a possible failure of the aging lock,” the report notes.

In a letter to outgoing House Speaker Dennis Hastert (R/IL), Army Assistant Secretary John Paul Woodley explained that a final decision requires time because the Corps needs to comply with a federal law that forces the agency to first consider possible environmental impacts of closing the MRGO. He added that the agency needs to confirm the closure costs before going ahead with any plan. Congress has ordered the Corps to close the channel to deep draft navigation. The Corps must submit its final recommendations by December 2007. Some groups and lawmakers are criticizing the agency for not providing a full plan for closing the shipping channel and for delaying a final decision until next December. But Rep. Melancon said he is concerned about safety. “There is no reason to put people in St. Bernard Parish and even New Orleans in jeopardy in the future just because a few businesses and a couple of barge owners are opposed,” he said.

The 76-mile MRGO accounts for an estimated 3% of all shipping traffic in southeastern Louisiana, according to the *American Society of Civil Engineers*. It was authorized by Congress in 1956 and built between 1958 and 1965 at a cost of \$92 million. Last year the Corps spent an estimated \$17 million to dredge the channel. The LSU report estimates that 922 square miles of wetlands have eroded since its construction — an area almost three times the size of New York City.

Source: Lucy Kafanov, *Greenwire*, 12/6 and 12/18/06

Hurricane Recovery Permit Procedures Questioned

A U.S. Army Corps of Engineers’ (Corps) plan to speed up rebuilding in coastal Mississippi has sparked a battle between environmentalists and homebuilders over the proposal’s effect on wetlands that serve as critical buffers for flooding along the Gulf of Mexico. At issue are proposed “general” permits for Hancock, Harrison, Jackson, Pearl River, Stone and George counties, which were hit hard by Hurricane Katrina. The permits would allow builders to fill as many as five acres of wetlands per project.

Under Section 404 of the Clean Water Act, discharge of dredged or fill material into “navigable waters” requires a Corps permit — either a nationwide general permit that allows a landowner to fill up to a half acre or an individual permit that applies to wetlands larger than a half acre. If activities are expected to have minimal environmental impact, the Corps can issue a general permit, or a blanket authorization, without the usual opportunity for public input required for individual permits.

The *National Association of Home Builders’* (NAHB) Susan Asmus said requiring individual permits would hamper rebuilding efforts. The Corps’ general permit proposal “is a huge help because of the economics associated with wetlands permitting,” Asmus said. “There is a lot of risk involved in trying to get [an individual] permit and it takes a long time. The more streamlined you can make that process, with all of the environmental considerations taken into account, the more likely people are going to invest in the rebuilding effort.”

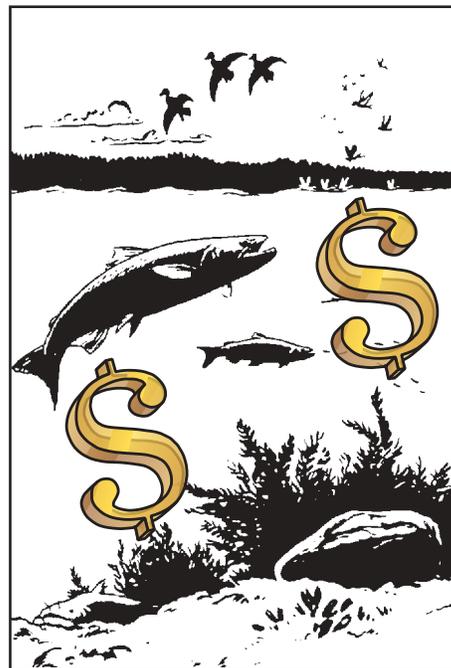
But development in the flood-prone coastal Mississippi area needs more protection and oversight, not less, said Jeff Grimes of the *Gulf Restoration Network*. “Five acres of wetland is a pretty substantial size. The nationwide permit limit is half an acre, so this plan allows for an area 10 times larger,” Grimes said. “Coastal Mississippi is a very flood-prone area and really the limit should be stricter here than the rest of the country.”

One safeguard built into the permits by the Corps to ensure that environmental degradation does not occur is that permits can only be used in a “low quality” wetland. In comments filed on behalf of NAHB, Asmus urged the Corps to clearly define the term. Corps spokesman Pat Robbins said general permits would not apply to tidal wetlands or non-tidal wetlands that are adjacent to tidal waters. Those are considered higher quality wetlands, he said. The Corps will review comments on the proposal in the next 45 days. “We may decide the permits aren’t necessary, we may decide to decrease the number of acreage, or we may decide to exclude a lot more areas,” Robbins said.

Source: Lucy Kafanov, *Greenwire*, 12/12/06

Ecology in EPA’s Cost-Benefit Analyses

The Bush administration, which has long emphasized economic valuation in weighing new regulations, announced in late December plans to add another consideration to its cost-benefit calculations at U.S. EPA. The agency’s new “Ecological Benefits Assessment Strategic Plan,” says EPA will develop tools to assess how policies affect “ecosystem functions and services” — and in turn measure how healthy ecosystems contribute to social welfare. “Instead of asking, ‘How does this ecosystem fare if we reduce this insult of pollution?’, we ask, ‘How does a particular policy or rule enhance the ecosystem, and how does that benefit society?’” said Al McGartland, director of EPA’s *National Center for Environmental Economics*. As EPA sees it, ecosystems provide a suite of goods and services that have measurable value. Among them: drinking water supplies, commercial and game fish, food crops, timber, natural pollination and pest control, outdoor recreation, energy and nutrient cycling, pollutant filtration and property protection in fierce storms.



McGartland and other agency officials described the plan as “evolutionary, not revolutionary.” The goal, they say, is to provide policymakers with new scientific tools and strategies to inform their decisions across all regulatory programs. Outside experts described EPA’s effort as “a very positive vision,” but some questioned whether the agency could harness the leadership and money it

needs to implement the strategic plan. And they caution that cost-benefit approaches are inherently controversial because they attempt to place a value on nature.

Resistance to such analysis could come from both environmentalists, who maintain that ecosystem protection is a moral imperative and therefore cannot be valued, as well as from some conservatives who believe the approach lacks scientific rigor and will rely on “soft interpretations” of cost-benefit factors. “Obviously, that’s a challenge. How do you put a price on something like aesthetic beauty?” said Matt Madia, a policy analyst with the advocacy group *OMB Watch*. He noted that it may take several years for the agency to work through such questions, as well as reach solid definitions for ecological concepts.

Yet even with its limitations, experts say the approach will address a long-standing shortcoming with EPA analyses — an inability to see the big picture. “The first step to making progress is figuring out where the problems are,” said Jim Boyd, a senior fellow and environmental economist with *Resources for the Future*. “People would be surprised at how little true ecological assessment goes on within the agency right now.”

As for the debate over valuing nature, both EPA officials and independent experts say such approaches are necessary because they allow regulators and scientists to measure progress in real terms. “Economists rely on markets to give us data on how well we’re doing, but the natural environment doesn’t provide us with that kind of information,” Boyd said. “It may be hard to put a dollar value on things, but at the very least the agency should be encouraged to start tracking outcomes and measure the impact of policy decisions on the larger ecology.” Moreover, they say, such approaches could prove highly useful in addressing well-documented ecosystem woes in places like the Chesapeake Bay, the Everglades and Yellowstone National Park, as well as more mundane problems in suburbia.

“One of the things that’s exciting about this ... is that it relates what you see in your backyard to what’s happening in the creek that runs behind your house to what’s happening in the lake or bay where that creek eventually drains,” Boyd said.

Ben Grumbles, EPA’s assistant administrator for water, echoed that notion, saying the plan will “boost environmental protection by advancing knowledge of ecosystem benefits.” “Understanding the value of a clean stream or a healthy coast informs decisions and improves environmental results,” Grumbles said.

But EPA officials acknowledge they face major challenges in pursuing their strategy — chiefly, a “limited understanding of the linkages between ecological and economic systems.” To improve understanding of that link, the new plan proposes 33 actions to improve ecological benefits assessment. Among them: fostering better communications among environmental experts; revising EPA monitoring programs to assess ecological benefits; developing models to account for ecosystem health and functions; and increasing coordination with other federal agencies, states and non-governmental organizations. Overall, the report says, “Improving agency ecological benefits assessments will require a new approach that emphasizes interdisciplinary teamwork.

“Traditionally,” the report continues, “natural scientists at EPA have focused primarily on assessing risks, while economists have focused primarily on assessing the costs and benefits of regulations.” By working more closely together, ecologists and economists will be better equipped to identify environmental “stressors” as well as determine the “appropriate ecological endpoints” that come from sound policy decisions. But *OMB Watch’s* Madia cautioned against what he termed “paralysis by analysis,” whereby new policies can become so bound up in internal debate that the final outcome is a weak or ineffective rule. “That’s a valid concern,” he said, “and something we always keep an eye on with cost-benefit analysis.”

Source: Daniel Cusick, *Greenwire*, 12/22/06

Mining and Faulty Permitting Problems

Inaccurate water quality predictions have allowed regulators to approve mines that pose significant pollution problems, according to a 300 page report by the

advocacy group *Earthworks*. The report featuring case studies of 25 mines says water quality standards were exceeded at 76% of those sites and that mitigation measures aimed at protecting water failed at 64% of the mines.

The group said the study is the first look at the reliability of pre-mining water quality predictions at hardrock mining operations. The group used environmental impact statements (EIS) and other documents to prepare its report. “In some cases, people making the predictions didn’t do a good job of collecting data about the site or they didn’t do a good job of analyzing the data,” said Jim Kuipers, an engineer who coauthored the report. “In most cases, a contributing factor is that regulators failed to ... improve their predictions based upon past experience. “Another contributing factor in many cases is that the consultants making the predictions for a prospecting mining company are biasing their results to satisfy their client.”

National Mining Association spokeswoman Carol Raulston disagreed with the group’s assertions. “I think the general view that runs through the report is that the models used in EIS’s are static and that there has been no evolution, change. That’s just not accurate,” she said. “Most mines, as part of their permitting, have to go back every two years and recalibrate their groundwater models. ... It is a very dynamic process.” Raulston said a quarter of the 25 case-study mines are abandoned, which explains why they never fully met terms of impact statements and why mitigation efforts were not completed.

But another of the report’s authors, geochemist Ann Maest, said older mines were studied because they help analysts understand mines’ long-term effects on water quality. She said three of the case-study mines were historic while the rest were permitted between 1974 and 1997. “You need about a 10-year history to see if acid drainage and contaminant leeching is going to develop,” Maest said. “We don’t know what will develop over time with some of these mines.”

Newmont Mining Corp. hydrology manager Paul Pettit said mining technology has changed in recent years and that newer mines have smaller impacts. He added that *Newmont*

updates hydrological information on groundwater models in Nevada every two years, and files monthly reports on groundwater levels with the Bureau of Land Management. "Leak detection reporting and monitoring is very advanced compared to 25 years ago, and the regulations have increased dramatically," Pettit said. "Environmental protection is how we do business." While the industry still has a way to go, it is better at detecting pollution earlier with enhanced monitoring wells and other technology, Raulston added.

However, Maest said, "If you compare the mining now to the mining at the turn of the last century, yes there is no question that methods have improved," she said. "We're not dumping tailings in streams, for example. But I lined up the 25 mines we studied by year of the start of operations and we did not see any obvious trends in improvement of predictions or in water quality."

Source: Lucy Kafanov, *Greenwire*, 12/8/06

Stormwater Case Goes to Supreme Court

In early January the Supreme Court began considering whether state regulators must consider endangered species when issuing stormwater discharge permits. In the case, *EPA v. Defenders of Wildlife* (DOW), EPA and the *National Association of Homebuilders* (NAHB) have petitioned for a *writ of certiorari* on the case. The groups are appealing a 9th U.S. Circuit Court of Appeals ruling that said EPA broke the law when it allowed Arizona to issue water permits without federal consultation on the Endangered Species Act (ESA).

Attorneys working on the case have said it could have implications for other federal programs administered by states, including Clean Air Act and Clean Water Act permitting. Attorneys for DOW and NAHB said that they are in a "wait and see" mode as to whether oral arguments will be heard. The preferred outcome for environmentalists would be a court decision not to hear the case, leaving the 9th Circuit's ruling intact, said Jason Rylander, an attorney for DOW.

The circuit court sided with environmentalists, who had sued over Arizona's

stormwater discharge permits. The groups said EPA violated the ESA when it gave its permitting authority to Arizona in 2002. Developers must obtain the permits for stormwater that passes through pipes, ditches or other channels into waterways. In Arizona, the permits have allowed thousands of housing units that environmentalists say could harm habitat for the southwestern willow flycatcher, minnows, pupfish and other imperilled plants and animals along the San Pedro River Basin.

If EPA issued the permits, it would have to complete a formal consultation process with the U.S. Fish and Wildlife Service over whether any species might be affected. But state agencies do not have the same stringent consulting requirements as the federal government. The EPA and NAHB argue that the Supreme Court should overturn the circuit court's ruling, because Congress gave EPA the authority to transfer permits to the states with instructions that do not include ESA consultations. In petitions filed before the Supreme Court, federal attorneys also argued that the 9th Circuit decision conflicts with decisions of two other courts of appeals.

Source: Allison Winter, *Greenwire*, 1/4/07

Enviro Group Pays \$600,000 in Defamation Damages Suit

An Arizona appeals court in early December upheld a jury's \$600,000 judgment in favor of a rancher in a defamation lawsuit, rejecting an environmental group's argument that documents it posted on the Internet were shielded by the First Amendment. The Court of Appeals upheld a Pima County Superior Court jury's award of compensatory and punitive damages to Jim Chilton in his lawsuit against the *Center for Biological Diversity* (CBD), a nonprofit with offices in AZ, CA, NM, OR and Washington, D.C.

A lawyer for the rancher said the appellate court had stood up for a person wrongly defamed, while an attorney for the CBD said the ruling trampled citizens' right to petition for redress of grievances. Chilton contended he and his business, *Chilton Ranch and Cattle Co.*, were defamed by the false postings the CBD made on its Web site. The postings referred to alleged overgrazing on Chilton's grazing allotment, issued by the

U.S. Forest Service for 21,500 acres in the Arivaca area northwest of Nogales, AZ.

The CBD unsuccessfully opposed the 10-year renewal granted for Chilton's grazing permit, and the group subsequently posted links to the their appeal and related photographs on its Web site. The environmental group argued that the documents were shielded by state and federal constitutional protections for the right to petition the government over grievances because the appeal and photographs submitted with it were public records related to official proceedings. However, a three-judge Court of Appeals panel in Tucson said the CBD did not raise the issue of constitutional protections until too late in the case.

The CBD asked for extra leeway on that point, but the court refused, saying that the jury found evidence of "actual malice" that indicated that the center knew that some of the material was false. The court also declined to rule on whether past Arizona court rulings provide a blanket protection against defamation claims arising from official proceedings. Chilton's suit challenged the posting of the documents on the Internet, not their submission in the Forest Service appeal proceeding in which the public comment period was already completed by the time the postings were made, the court said.

The trial jury found that the CBD made false statements in photo captions, including one that implied that grazing by Chilton's cattle was responsible for damage actually caused by hundreds of people, including the photographer, who attended a May Day festival. Kraig Marton, a lawyer for Chilton, said he was pleased by the ruling. "We hope that this sends a message to anyone who would wrongly defame any good person," he said.

Susan Seager, a lawyer for the CBD, said it would ask the Arizona Supreme Court to accept an appeal. At stake is important legal protection for citizens who want to republish documents they've already filed in appeals and petitions with the government, Seager said. "This court held that they lost that privilege," Seager said. "It's the Internet age colliding with the very old right to petition. Seager said the center has already paid the judgment of \$100,000 of compensatory damages and \$500,000 of punitive damages plus interest.

Sources: *AP/Arizona Daily Star*, 12/7/06; and *Greenwire*, 12/8/06

Enviro Group Seeks to Force PA Farmers to File Control Permits

Citizens for Pennsylvania's Future, or *PennFuture*, announced in early January that it will sue five Lancaster County hog and chicken farmers to force them to file state and federal water pollution control permits as part of a larger effort to keep manure pollution out of the Chesapeake Bay. *PennFuture* said that the farms are among 250 livestock operations in Pennsylvania that do not have federal Clean Water Act water pollution control permits for their operations.

The farms produce almost 8 million gallons of waste per year from 10,000 pigs, 170,000 chickens and 330 cows, *PennFuture* said. And their proximity to the Susquehanna River, which is the largest source of fresh water to the Chesapeake Bay, makes them prime nitrogen pollution suspects, *PennFuture* staff attorney Kimberly Snell-Zarcone said. "These farms have refused to comply with the laws protecting water from farm pollution, despite the fact that they have known of the laws' requirements for some time," she said.

Lancaster County is one of the "hot spots" for manure runoff into waterways that feed the Chesapeake Bay, *Chesapeake Bay Foundation* senior scientist Beth McGee said. *PennFuture* wants the farmers to obtain National Pollutant Discharge Elimination System (NPDES) permits, which are designed to prevent rain from washing manure into waterways by requiring farmers to keep fertilizer away from streams and by allowing state inspectors to examine waste lagoons to make sure they will not leak.

Marietta, PA, farmer Gary Lefever — one of the five being sued — said that obtaining the water pollution control permits is "definitely too much paperwork," but he plans to comply with the regulations nonetheless. Mark Ebaugh, a Martic Township hog farmer who is also being sued by *PennFuture*, said that his farm is not large enough to be classified as a concentrated animal feeding operation and therefore does not require an NPDES permit to operate. "We knew we were close to the limit," but not

quite over it, he said. "We're a family farm. We live on the farm. We always test our water, and it's always clean".

Sources: Tom Joyce, *York Daily Record*, 1/9/07; Tom Pelton, *Baltimore Sun*, 1/9/07; Bill Hannegan, *Lancaster [PA] Intelligencer Journal*, 1/9/07; and *Greenwire*, 1/9/07

Battle of the Bighorn River

U.S. Sen. Max Baucus said in mid January that he will introduce legislation to ensure the world-renowned trout fishery along the Bighorn River is protected from low-water conditions that could kill off fish. A prolonged dry spell in Wyoming and Montana since 2000 has meant less water flowing down the Bighorn River below Bighorn Lake, threatening both the fish and a local economy highly dependent on recreational anglers.

Meanwhile, Wyoming officials have been pushing the U.S. Bureau of Reclamation to further rein in that flow to keep Bighorn Lake from falling below historic levels. Baucus' legislation, the Bighorn River Protection Act, would force the bureau for the first time to incorporate downstream fish management into its operation of the lake. The river would be ensured a minimum sustained flow of 1,500 cubic feet of water — a figure state biologist Ken Frazer said is critical to maintaining a trout fishery that attracts anglers from around the world.

The legislation also would set a "preferred" water flow of 2,500 cubic feet per second. "This will light a fire under the bureau," Baucus said after hosting a town-hall style meeting on the issue. "It's putting pressure on the bureau to start figuring out how to preserve water upstream." But Dan Jewell, area manager for the Bureau of Reclamation, said his agency already tries to keep flows above 1,500 cubic feet per second whenever possible. As the drought lingers, he said, that is becoming harder. To keep the flow at 2,500 cubic feet per second, he added, is even more difficult. "For somebody to make any gains, someone else is going to have to give something up," Jewell said, predicting that interests in Wyoming will fight against Baucus' measure.

Source: Matthew Brown, *AP/Denver Post*, 1/14/07; and *Greenwire*, 1/17/07

Dam Removal Cheapest Option

Removing four hydroelectric dams on Oregon's Klamath River to allow salmon to reach their historic spawning grounds would save ratepayers more than \$100 million dollars over the next 30 years, according to a new government report. The report, funded by the Interior Department and the California Energy Commission, says decommissioning the dams and building new power plants would cost between \$152 million and \$277 million over 30 years. Relicensing the dams under rules that require the installation of fish ladders and other environmental measures would cost between \$230 million and \$470 million in 2005 dollars.

The report estimates electricity generation would drop by 23% for 70,000 households served by the dams. "It's now official, the Klamath hydro project is an economic loser," said Steve Rothert of *American Rivers* in a statement. In March, the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service demanded a change in Klamath management because salmon runs had plummeted. The Klamath was once the third-most productive salmon river in the country, but now coho salmon are listed as endangered and Chinook are at record lows.

FWS officials suggested *PacifiCorp* could either spend up to \$175 million on two-mile fish ladders or spend at least \$100 million to remove the four dams, making it the country's largest dam-removal project ever. The company, owned by *Berkshire Hathaway*, has already agreed to demolish three other hydroelectric dams. A draft environmental impact statement released in November by the Federal Energy Regulatory Commission (FERC) estimated that removing the four dams would cost \$77 million dollars if sediment excavation could be avoided. Capital costs of fish passage facilities at the four dams exceed \$220 million. FERC estimates that *PacifiCorp* would lose more than \$28 million each year when the cost of fish ladders and other mandatory conditions are accounted for.

A coalition of environmental groups filed comments with FERC applauding the agency's finding but calling for more stringent measures to mitigate for the project's effect on the Klamath River. "FERC failed to consider the most obvious

alternative — taking the dams out,” said Charlton Bonham of Trout Unlimited. Friends of the River spokeswoman Kelly Catlett said that FERC also neglected to incorporate the results of an August ruling that calls for a \$220 million investment in fish ladders. A federal administrative judge had ruled that the PacifiCorp dams have had a serious effect on the river’s salmon and other fish and that fish ladders or passages must be installed to allow the fish to return to 350 miles of river that they have been cut off from for more than 50 years.



A View of Valle Vidal.

PacifiCorp submitted comments to FERC in which it suggests augmenting protection measures above what they had originally proposed in 2004. The company proposed providing facilities to assist juvenile fish as they migrate to the ocean. It also proposed increasing monitoring and research efforts and the creation of a panel to include federal and state agencies, Indian tribes and other stakeholders to provide scientific recommendations on reintroduction plans.

“The company’s proposal underscores both its willingness to compromise and its desire to reach a common understanding with the federal agencies on these important issues to ensure successful reintroduction of fish in the project area,” said Bill Fehrman, president of PacifiCorp Energy, in a statement. “We understand that PacifiCorp’s revised alternative proposal will not satisfy all parties, particularly those interested in having PacifiCorp remove all the project dams; however, this alternative addresses our desire to be environmental stewards and allows the company to continue to generate clean, reliable power for its customers.”.

Source: Lucy Kafanov, *Greenwire*, 12/4/06

Drilling Restrictions for Valle Vidal Become Law

President Bush signed legislation in mid December prohibiting oil drilling and mining in the Valle Vidal area of New Mexico’s Carson National Forest. Valle Vidal lies on the very edge of the Mississippi River Basin in the headwaters

of the Arkansas River near the New Mexico-Colorado border.

Protecting the 102,000-acre Valle Vidal has been a major focus of New Mexico’s political leadership, environmentalists and outdoors groups over the past year. H.R. 3817 ensures that the Forest Service would keep Valle Vidal off-limits as it develops a new land-use plan. The Forest Service was considering allowing energy development on about 40,000 acres. The Carson forest plan amendment is scheduled to be completed by early 2007, with any leasing decision made by fall 2008.

Valle Vidal was donated to the Forest Service in 1982 by *Pennzoil Co.*, which never allowed drilling in the area, and New Mexico politicians including Gov. Bill Richardson (D) fought to protect it, including the area in his roadless rule petition to the Agriculture Department earlier this year. A roadless designation would prohibit energy development and associated activities.

Source: Dan Berman, *Greenwire*, 12/13/06

Financial Incentives Key to Endangered Species

Farmers must be offered financial incentives to encourage habitat protection for endangered species on their land, the Government Accountability Office (GAO) said in mid December. The report, which assesses why farmers enroll in farm bill conservation programs to help species, concludes that the bottom line is money. “As might be expected, survey respondents most frequently identified financial benefits as the primary incentive for landowners to participate in ... conservation programs,” the report says. Main disincentives are lack of funding

and farmers’ concerns about paperwork and production curbs, the report says.

The report comes as Congress is preparing to write a new farm bill, and some senators are promoting a separate measure to create more voluntary incentives for landowners to protect endangered species.

Endangered species advocates say the GAO report backs those legislative efforts. “This is the direction we’re headed now,”

said John Kostyack of the *National Wildlife Federation*. “It’s a new direction: looking at giving farmers and other landowners financial help when they want to do something positive on their land for endangered species.”

The incentive bill by Sens. Mike Crapo (R/ID) and Blanche Lincoln (D/AR) would give landowners tax breaks when they conserve species on their land. Crapo and Lincoln said they drafted the legislation with the farm bill in mind, in an effort to expand incentives to the tax code.

The GAO report assessed six of the largest farm conservation programs, surveying participants and agency employees in 19 states. Some programs pay farmers to idle cropland to create wildlife habitat. Others give cost-share assistance for farmers to make environmental improvements. The main roadblocks for landowners, besides lack of funding, were concerns about paperwork and federal regulation of their land. The study recommended better education and outreach to farmers. The report did not examine the effectiveness of programs for species conservation once implemented.

Sen. James Inhofe (R/OK) requested the report as part of his interest in finding voluntary ways to protect endangered species. In a statement, Inhofe said he would work with the Senate Agriculture Committee to try to address landowners’ regulatory and paperwork burdens. None of the farm programs were written to specifically target endangered or threatened species, but agency officials said states sometimes concentrate enrollment to benefit particular species. The report said that USDA and the U.S. Fish and Wildlife Service (FWS) should coordinate better on those plans. The two agencies are finalizing a “memorandum of

understanding” on endangered species in farm bill programs. GAO said the agencies should include mechanisms for monitoring and reporting in that agreement. USDA and FWS expressed agreement with most of the GAO findings.

Source: Allison Freeman Winter, *Greenwire*, 12/13/06

EPA to Study Lakes, Ponds and Reservoirs

U.S. EPA announced plans in early December for a three-year environmental survey of the nation’s lakes, ponds and reservoirs — the first such assessment in 33 years. The agency will examine more than 900 water bodies that it considers representative of all U.S. lakes. The survey will be done jointly by the agency, states and Indian tribes and will be funded by EPA.

“EPA’s national state-of-the-lakes study will measure lake health, map priorities, and motivate grass-roots stewardship,” said Ben Grumbles, EPA’s top water administrator, in a statement. The research will examine water clarity and color, shoreline habitat, pathogen indicators and the condition of various water organisms. Scientists will measure nutrients levels, solids, fecal bacteria, toxic metals, pesticides and organic compounds.

The last EPA lake survey was done in 1972, when the agency evaluated 815 lakes. The new study will resample 113 lakes from the earlier survey.

Lucy Kafanov, *Greenwire*, 12/7/06

NAS Panel Says OMB Risk Assessment Guidelines Flawed

Proposed federal guidelines on assessing risks are “fundamentally flawed” and should be withdrawn, a National Academy of Sciences (NAS) panel said in early January. At issue are draft Office of Management and Budget (OMB) guidelines on how agencies should assess risks to human health, safety and the environment. If enacted, the draft policy would standardize risk assessment across agencies, which now follow no uniform policy.

As a result of the NAS review OMB will rewrite their guidelines. The NAS review found that, “One size does not fit all.” The panel — which includes representatives of industry and a former administrator of OMB’s Office of Information and Regulatory Affairs (OIRA), which would administer the risk guidelines — took issue with several elements of the three-and-a-half page guidelines, which it said would institute sweeping changes in government risk management practices with little or no benefit.

The NAS report takes issue with the OMB guidelines for “its presentation of a new definition of risk assessment.” Moreover, the guidelines “move standards for risk assessment into territory that is beyond what previous reports have recommended and beyond the current state of the science,” the NAS report concludes. Other concerns outlined by the panel include agencies’ costs in implementing the proposed guidelines and OMB’s failure to assess the current quality of risk assessment at agencies. In the end, the NAS panel recommended OMB scrap its guidelines and formulate a new, more general document that would include more input from individual agencies.

That the NAS panel ultimately recommended withdrawing the OMB bulletin came as a surprise to its members, said committee chairman John Ahearne, director of the ethics program at *Sigma Xi*. “When the committee began its work we had expected that we would review the bulletin in detail and recommend some modifications and improvements,” he told reporters. But after “extensive review ... the committee concluded that the bulletin is fundamentally flawed and should be withdrawn.” The conclusion was unanimous, Ahearne said, “not even close to disagreement.” The committee based its conclusions on presentations from public interest groups, scientists and public policy experts, industry and the government at a daylong information-gathering meeting in May, as well as questionnaires submitted to federal agencies that conduct risk assessments. “We believe that OMB should put out overall guidance,” Ahearne said. “Detailed guidance is best developed by agencies that have experience and knowledge.”

OIRA acting Administrator Steven Aitken said his agency was pleased that NAS “supports OMB’s goal of increasing the

objectivity and quality of risk assessment in the federal government.” Moreover, “OMB will not finalize the proposed [risk management] bulletin in its current form,” Aitken said. The agency will rely on the NAS report recommendations, public comments on the original guidelines and information it collected during an interagency review to introduce a new policy, he said.

In general, reaction to the NAS report was mixed — though many sources on both sides of the issue said they were surprised by the blunt recommendation to scrap the OMB guidelines. “It’s a really good development,” said Bob Shull of *Public Citizen*, which opposed the OMB guidelines. “What I expected at the outset [of the NAS review] was something like the panel chairman apparently described in the press conference, something slightly more ambiguous,” rather than a recommendation to scrap the OMB guidelines. Shull said he was pleased that NAS singled out OMB’s definition of risk assessment as problematic. “OMB decided to single-handedly redefine a term that’s been pretty defined for 10 to 20 years,” he said.

On the other side of the issue, Angela Logomasini of the *Competitive Enterprise Institute* said she was surprised and disappointed by the NAS report’s conclusions. “I think that it’s overly critical,” she said. Logomasini said she believed modifying, not throwing out, the OMB guidelines would be a prudent approach. “The idea that we should just rely on agencies is problematic, because agencies have not been doing the best science,” Logomasini added. “The idea of doing this is to create accountability and create scientific standards across the board. Why should [the Transportation Department] use more lax standards than the U.S. EPA? Why should EPA be so stringent beyond belief?”

Source: Lauren Morello, *Greenwire*, 1/11/07

USGS Publication Review Procedure Controversy

The Bush administration is clamping down on scientists at the U.S. Geological Survey (USGS), the latest agency subjected to controls on research that might go against official policy. New rules require screening of all facts and

interpretations by agency scientists who study everything from caribou mating to global warming. The rules apply to all scientific papers and other public documents, even minor reports or prepared talks, according to official documents.

Top officials at the Interior Department's scientific arm say the rules only standardize what scientists must do to ensure the quality of their work and give a heads-up to the agency's public relations staff. "This is not about stifling or suppressing our science, or politicizing our science in any way," said Barbara Wainman, the agency's director of communications. "I don't have approval authority. What it was designed to do is to improve our product flow."

But some agency scientists, who until now have felt free from any political interference, worry that the objectivity of their work could be compromised. "I feel as though we've got someone looking over our shoulder at every damn thing we do. And to me that's a very scary thing. I worry that it borders on censorship," said Jim Estes, an internationally recognized marine biologist in the USGS field station at Santa Cruz, CA. "The explanation was that this was intended to ensure the highest possible quality research," said Estes, a researcher at the agency for more than 30 years. "But to me it feels like they're doing this to keep us under their thumbs. It seems like they're afraid of science. Our findings could be embarrassing to the administration."



The new requirements state that the USGS's communications office must be "alerted about information products containing high-visibility topics or topics of a policy-sensitive nature." The agency's director, Mark Myers, and its communications office also must be told — prior to any submission for publication — "of findings or data that may be especially newsworthy, have an impact on government policy, or contradict previous public understanding to ensure that proper officials are notified and that communication strategies are developed."

Patrick Leahy, USGS's head of geology and its acting director until September, said that the new procedures would improve scientists' accountability and "harmonize" the review process. He said they are intended to maintain scientists' neutrality. "Our scientific staff is second to none," he said. "This notion of scientific gotcha is something we do not want to participate in. That does not mean to avoid contentious issues."

Under the policy, a USGS employee must submit any scientific document for a peer review that may involve scientists either inside or outside the agency. A supervisor oversees the process, making sure the reviewers are qualified and looking at how the scientist in question responded to any criticism raised by the reviewers. Rama Kotra, a senior scientist in Leahy's office, said the review might take just one week for a simple document, but in the case of a complex scientific study "it would take much longer than that," possibly six months. From now on, USGS supervisors will demand to see the comments of outside peer reviewers' as well as any exchanges between the scientists who are seeking to publish their findings and the reviewers.

The controversy over the peer review process surfaced a day after the *Union of Concerned Scientists* announced that 10,600 scientists have signed a statement complaining that the Bush administration has undermined the "scientific integrity" of federal policymaking. Michael Halpern, the group's outreach coordinator for scientific integrity, said USGS scientists at the annual meeting of the *American Geophysical Union* in San Francisco had approached him to complain about the new peer-review rules.

The Bush administration, as well as the Clinton administration before it, has been criticized over scientific integrity issues. In 2002, the USGS was forced to reverse course after warning that oil and gas drilling in Alaska's Arctic National Wildlife Refuge would harm the Porcupine caribou herd. One week later a new report followed, this time saying the caribou would not be affected. Then earlier this year, a USGS scientist poked holes in research that the Interior Department was using in an effort to remove from the endangered species list a tiny jumping mouse that inhabits grasslands coveted by developers in Colorado and Wyoming.

Federal criminal investigators are now looking into allegations that USGS employees falsified documents between 1998 and 2000 on the movement of water through the proposed Yucca Mountain nuclear waste dump in Nevada. The USGS had validated the Energy Department's conclusions that water seepage was relatively slow, so radiation would be less likely to escape.

At the Environmental Protection Agency, scientists, advocacy groups and Congressionals alike are worried about closing libraries that contain tens of thousands of agency documents and research studies. Also in Congress, democrats have investigations going on into reports by *The New York Times* and other news organizations that the Bush administration tried to censor government scientists researching global warming at NASA and the Commerce Department.

House Democrats have taken the further step of forming a new subcommittee to investigate allegations of GOP science and policy abuse. The new Science Oversight and Investigation (I & O) Subcommittee will report to the House Committee on Science and Technology. The parent committee has jurisdiction over non-defense Federal spending. That includes agencies such as NASA, DoE, EPA, NOAA, and the National Institute of Standards and Technology, just to name a few.

Sources: John Heilprin, *AP/Seattle Post-Intelligencer*, 12/13/06; Juliet Eilperin, *Washington Post*, 12/14/06; *DarkSyde*, 1/24/07; and *Greenwire*, 12/14/06

Federal Biologist Faces Firing Over E-Mail Issue

The U.S. Bureau of Reclamation (BOR) has proposed to fire a biologist after finding e-mails he had sent to environmentalists and to other agencies, according to documents released in mid December by *Public Employees for Environmental Responsibility* (PEER). In its letter of proposed termination, the agency alleged the "subversive" activity of communicating with "environmental organizations which are opposed to Reclamation generally and adversarial in nature" justifies immediate removal.

Charles (Rex) Wahl, a GS-12 Environmental Specialist, has been on

paid administrative leave for the past three months while the agency continues to ponder his fate. Shortly after Wahl was notified of his proposed firing on September 18th, the BOR also dismissed his wife Cherie from a temporary clerk-typist position. Ironically, Wahl's main duty in Reclamation's Yuma Area Office was to keep stakeholders, including environmentalists, abreast of agency "actions and initiatives" as required under National Environmental Policy Act (NEPA).

In addition to his contact with environmentalists, Wahl is also charged with revealing "administratively controlled information" to other federal agencies. "These charges are both insulting and illegal," stated PEER Senior Counsel Paula Dinerstein, who is leading Wahl's legal challenge against any proposed disciplinary action. "Public servants cannot be fired simply for telling inconvenient truths."

In May, Wahl (who had earned excellent performance evaluations) had transferred to BOR's Albuquerque Office. In August, the agency discovered the emails Wahl had sent months earlier as it cleared the hard drive of his computer. Wahl's disclosures concern an array of proposed BOR projects on the Lower Colorado River. He also revealed that the agency had falsified material in a permit it submitted to the U.S. Army Corps of Engineers. In addition, Wahl suggested to environmentalists that they obtain certain agency reports through the Freedom of Information Act.

"Federal employees are not required to swear bureaucratic omertà – silence at the expense of the public interest," Dinerstein added. "Part of the Bureau of Reclamation's problem is that it apparently regards environmentalists as enemies. Contrary to its paranoid posture, Reclamation is required to be forthright about the implications of what it is doing."

BOR is under no deadlines to act on Wahl's case. Facing a short statute of limitations on filing complaints, however, PEER has initiated an investigation into the matter by the U.S. Department of Labor under the whistleblower provisions of the Clean Water Act, Clean Air Act and Solid Waste Disposal Act.

Source: *PEER News Release*, 12/19/06;
Contact: Carol Goldberg (202) 265-7337

Labor Unions Join Forces With Conservation Group

In a first-of-its-kind alliance that could fundamentally reshape the environmental movement, 20 labor unions with nearly 5 million members are joining forces with a Republican-leaning umbrella group of conservationists — the *Theodore Roosevelt Conservation Partnership* (TRCP) — to put pressure on Congress and the Bush administration.

The *Union Sportsman's Alliance*, rolled out in mid January after nearly three years of quiet negotiations, is to be a dues-based organization (\$25 a year). Its primary goal is to increase federal funding for protecting wildlife habitat while guaranteeing access for hunters and anglers. The unlikely marriage of union and conservation interests comes at a time when the Bush administration, with its push for oil and gas drilling in the Rocky Mountain West, has limited public access to prime hunting and fishing areas on federal land. This has triggered a bipartisan backlash from sportsmen and conservation groups, as well as from Western politicians in both parties.

The strength of that backlash is making bedfellows of blue-collar workers and old-guard conservationists, who historically have shared little but suspicion and disdain. "We can make the union movement and environmentalism compatible and not antagonistic," said Tom Buffenbarger, president of the *International Association of Machinists*. "As of late, an awareness has grown that our goals are the same. We want good air, clean water and access to the outdoors.

"Jim Range, chairman of the board of the TRCP, which includes most of the nation's mainline hunting and fishing groups, said his organization forged an alliance with the unions in large measure because of their manpower, money and lobbying savvy. "It opens up a tremendous amount of territory for us to work on the both sides of the aisle," Range said. He predicted that the alliance will create a sudden and historically unique influx of millions of new people to the cause of land conservation.

The American environmental movement, created and run by upper-middle-class professionals, has tended to look down its nose at blue-collar workers and their

tastes in outdoor recreation, said Thomas R. Dunlap, a professor of history at Texas A&M University and an expert in the history of environmentalism. "This alliance with unions is certainly something quite new," he said. "If it really takes off, it may have a major effect in reshaping the environmental movement for this decade." Eric Smith, a professor of environmental politics at the University of California at Santa Barbara, describes the alliance as a "huge deal" and a "political breakthrough" that will put substantial pressure on Congress to protect large tracts of federal land, especially in the Rocky Mountain West. "It is a real creative step in cutting across party lines," Smith said. "It is likely to be a very effective strategy."

Several senior union officials said they wanted to join forces with conservation interests because they are concerned about the declining percentage of unionized employees in the U.S. workforce. They see the alliance as a way to excite and involve blue-collar workers who are passionate about hunting and fishing.

Together with the TRCP, the 20 labor unions — most of them in the building trades — recently commissioned a poll that found that 70% of union members hunt or fish. As important, 72% of those polled said they are concerned about the loss of good places to do either. The poll also found that about a quarter of union members said they belonged to the *National Rifle Association* (NRA), an affiliation that displeases some Democratic union leaders.

The NRA in recent years has been strongly allied with the Republican Party and the Bush administration. Some union leaders say they want their new alliance with conservationists to lure the political allegiance of gun-owning union members away from the NRA and its political agenda. "We know that the NRA is communicating to our members what clearly are anti-union positions and urging them to support anti-union candidates," said Harold Schaitberger, president of the *International Association of Fire Fighters*. Schaitberger said the alliance with the TRCP "is about connecting with our members, doing good conservation work and offsetting some of these anti-union messages they are getting from the NRA."

Richard Trumka, secretary-treasurer of the AFL-CIO and an enthusiastic supporter of

the new alliance, said an additional 33 labor unions in the AFL-CIO may soon join up. "This is a way for unions to reconnect with workers in another portion of their lives and meet a need that they have," Trumka said. "It is also going to give the conservation movement a lot more muscle."

Sources: Blaine Harden, *Washington Post*, 1/16/07; *National Capital Federal Firefighters News Release*, 1/16/07 and *Greenwire*, 1/16/07

MARC 2000 to Merge into Waterways Council, Inc.

The Board of Directors of the *Midwest Area River Coalition* (MARC 2000) voted unanimously in mid December to approve the merger of MARC 2000 into *Waterways Council, Inc.* (WC). The Board of Directors of the WC had previously approved this merger. Under the terms of the agreement, WC will retain the right to continue to use the name MARC 2000 in pursuance of the Midwest region's priorities and goals. It is expected that this merger will be completed by the end of 2006.



The merger is designed to nationalize the issue of lock modernization for the Upper Mississippi River and Illinois Waterway (UMRS) to help accomplish the mission of maintaining and modernizing the waterways infrastructure of the UMRS. The MARC 2000 coalition, with headquarters in St. Louis, MO, was formed in 1992 to promote Midwest economic growth through the responsible development and improvement of the infrastructure of the UMRS. The WC, which is based in Washington, DC, and led by President and CEO R. Barry Palmer, plans to maintain a Midwest regional office to be headed by Paul Rohde, current president of MARC 2000.

Under the terms of the merger agreement, MARC 2000 has committed to encourage its members to remain as members of the WC and to provide support to WC's priorities. These priorities include working to ensure an optimal level of

federal support and funding for the planning, construction, operation and maintenance of port and inland waterways navigation improvements, and working to ensure public awareness of the integral role of a modern and well-maintained system of navigable ports and inland waterways to meet the Nation's transportation needs.

"This merger is a critically important step in allowing our industry to speak with one, nationally authoritative voice on issues related to inland waterways infrastructure," said Mark Knoy, WC Chairman. "MARC 2000 has played a vital and effective role during its 15-year history," said Rick Tolman, MARC 2000 Chairman. "The resulting organization in this merger will be a stronger and more effective representation for water transportation issues and in particular, the Upper Mississippi River Basin, in the new and evolving political environment that we now face."

The WC is the national public policy organization advocating a modern and well-maintained national system of ports and inland waterways. The group is supported by waterways carriers, shippers, port authorities, shipping associations and waterways advocacy groups from all regions of the country. MARC 2000 membership is comprised of almost 200 river transportation carriers and related entities, agricultural producer groups, grain and industrial shippers, organized labor unions, manufacturers, economic development and recreation advocates, environmental organizations and other stakeholders.

Source: *The Maritime Executive*, 3200 SE Andrews Avenue, Suite 207, Fort Lauderdale, FL 33316, 12/18/07

New Asian Carp Publication

A publication by Yi et al., 1988, entitled, *Early Development of Four Cyprinids Native to the Yangtze River, China*, was recently translated by Duane Chapman and Ning Wang, USGS *Columbia Environmental Research Center*, Columbia, MO. Translation of the original document is provided together with information on how to use the translation, and information on how to tell the four species from other larval fish and eggs present in the Missouri River basin.

Readers are encouraged to take note of Chapter 1. It provides important instructions on the use of the translation, including a description of the Chinese morphometric conventions, which differ from those used by North American scientists. Chapter 1 also provides the historical context in which Chapter 2 was developed, and information on how the larvae of the subject fishes, which have invaded the Mississippi River Basin, may be distinguished from other fishes present in the basin.

The document itself (Chapter 2) was translated from the Chinese with the approval and assistance of the living authors of that study. It contains the most detailed description available, and approximately 200 drawings, of the early development of the subject fishes.

A .pdf version of the entire document can be downloaded free of charge on line at: <http://pubs.usgs.gov/ds/2006/239/>

Induced Meandering Field Guide Released

A new illustrated field guide is now available for participants of riparian restoration educational workshops and field tours. An *Introduction to Induced Meandering: A Method for Restoring Stability to Incised Stream Channels*, is a joint publication from *Earth Works Institute*, *The Quivira Coalition*, and *Zeedyk Ecological Consulting*.

The document describes riparian restoration techniques, and includes real examples, such as those used for several demonstration sites in the Galisteo Watershed Restoration Project in New Mexico. The document highlights the use of induced meandering as promoted by Bill Zeedyk. To receive a free copy, visit www.earthworksinstitute.org and click on "publications."

Climate Change Update

The rate at which emissions of carbon dioxide (CO₂) are entering the atmosphere increased last year to 7.9 billion tons compared to an average rate in 2000 of 6.8 billion tons, according to a study released in late November by the *Global Carbon Project*. The study concluded that the accelerated rates are being caused by a

rise in charcoal consumption and a lack of new energy efficiency gains. Up to 2000, greenhouse gas (GHG) emissions rose by less than 1% annually. But they are now rising by 2.5% annually, the study said.

The findings match figures released earlier by the U.N.'s *World Meteorological Organization* which found that worldwide concentrations of CO₂ reached the highest levels ever recorded last year. The study, carried out by scientists from the Australian government's *Commonwealth Scientific and Industrial Research Organization* (CSIRO) analyzed a 30-year record of air samples collected at an Australian Bureau of Meteorology observation station on the southern island of Tasmania. "The trend over recent years suggests the growth rate is accelerating, signifying that fossil fuels are having an impact on GHG concentrations in a way we haven't seen in the past," CSIRO scientist Paul Fraser said. "On our current path, it will be difficult to reign in carbon emissions enough to stabilize the atmospheric CO₂ concentration at 450 (parts per million)," CSIRO scientist and Global Carbon Project Co-Chair Mike Raupach said.

Increased incomes and a high demand for cars will triple Asia's GHG emissions over the next 25 year, according to a report commissioned by the *Asian Development Bank* and released in mid December. The report concludes that GHG emissions from the Asian transport sector will be the chief cause of the emissions rise. The Chinese population could increase its number of cars and sport utility vehicles by 15 times the present level over the next 30 years, while vehicle increase in India could be as much as 13 times for the same period. Meanwhile, climate change could decrease China's grain crops by one third in the second half of the century, according to a government report. The official *Xinhua News Agency* reported that a rise of 2 to 3 degrees Celsius would cause production of crops like corn, rice and wheat to fall 37% within the next 50 to 80 years. "These impacts will mostly be negative, and some of them cannot be reversed," the report added. The report was put together mainly by the Ministry of Science and Technology, the Chinese Meteorological Administration and the Chinese Academy of Sciences.

More than a dozen of India's world heritage islands are now under threat of submersion after rising sea levels recently caused two islands in the Sunderbans to disappear, according to Kolkata's School of Oceanography (KSO) studies. The islands are on the Indian side of the Sunderbans where the Ganges and Brahmaputra empty into the Bay of Bengal and are home to tigers and mangrove forests and 52 of them contain a population of 1.8 million people. Two islands, Suparibhanga and Lohacharra, have already gone under water and cannot be sighted in satellite imagery. The disappearance of the two islands have rendered over 10,000 people homeless, KSO studies Director Sugata Hazra said. "A dozen others on the western end of the inner estuary delta are threatened. As the islands sink, nearly 100,000 people will have to be evacuated...in the next decade." Global warming and the depletion of mangrove areas due to rising sea levels in the world's biggest delta are to blame, he added.



Climate change has occurred before, and ancient Egyptian, Chinese and Mexican civilizations could have collapsed as a result. According to St. Andrews University and University of Wales researchers, a lake supplying the lower Nile valley dried up 4,200 years ago. Samples taken from the sediment underneath Lake Tana in the Ethiopian highlands dating back at least 18,000 years found evidence of complete dryness at 79 feet below the lake bed, suggesting dramatic climate change that could have slowed the water that reached Egypt to a trickle and destroyed its farm-based economy. Also, the final century of China's Tang dynasty, which ended in 907, was marked by a shift in monsoons that led to drought and famine, while in Mexico the Mayans died

out due to a similar shift in tropical rainfall, according to a German study appearing in the journal *Nature*. Scientists found titanium sediment and magnetic minerals in a lake in southeast China, as well as in Venezuela's Cariaco basin, suggesting that both areas underwent intense climate change and drought due to shifting El Niño patterns.

Global warming and cooling could thus be occurring in a cyclical pattern. A study published in early January in the journal *Science* concluded that the global transition 300 million years ago during the Paleozoic period from an ice age to a warmer era marked by an increase in GHGs was also marked by repeated dips and rises in CO₂ in the atmosphere and wild swings in temperature that had drastic effects on forests and vegetation. During those extreme temperature swings came shorter periods of warming and cooling, according to University of California-Davis geochemist and lead researcher Isabel Montanez. The research team from five universities and the *Smithsonian Museum of Natural History* based their findings on evidence of fluctuations in ancient CO₂ levels by analyzing fossil plant leaves and weathered rocks in the southwestern U.S., ice cores in Antarctica, Australian fossils and coal formations in China. Instead of a relatively gradual transition from a cold world to a warm one — a common holding amongst many scientists — Montanez and her colleagues found fever spikes of climate change correlated with fluctuating levels of CO₂, like a seismometer graph of the myriad tremors before and after a major earthquake. "CO₂ goes up and temperature goes up. It drops and temperature drops," she said. "It suggests that the normal behavior in major climate transitions is instability, erratic temperature behavior and CO₂ changes"

While many climatologists point to El Niño as a cause for certain observed variable weather patterns this year, there is another, lesser-known phenomenon called the North Atlantic Oscillation (NAO) that could be linked to warmer temperatures in the Eastern United States and Eastern Europe. According to James Hurrell, a scientist at the *National Center for Atmospheric Research* in Boulder, CO, the NAO swings between two states. When it is positive, a large region of high pressure appears over the central Atlantic and a large area of low pressure settles over southern Greenland. Each of the

pressure systems are stronger than usual in that scenario, leading to more severe Atlantic storms that travel on a more northerly track than usual causing wet, mild winters in the Eastern U.S. and Northern Europe. When the NAO is negative, the high and low pressure areas weaken and shift south, causing storms that are weaker and travel more directly from west to east. Scientists began studying the NAO decades ago, but meaningful forecasts for it remain more elusive than for El Niño despite the fact that it can have wide-ranging ecological effects and cause the average temperature in the northern hemisphere to rise thus impacting energy demand, Hurrell said.

Scientists with the *Bermuda Institute of Ocean Sciences* reported in an early January issue of the journal *New Scientist* that melting Arctic sea ice enables the ocean to absorb more CO₂. They said that melting ice in the Arctic Ocean has tripled the amount of CO₂ the ocean can absorb, calculating that the entire Arctic Ocean is capable of absorbing up to 66 million tons of CO₂ per year. But they warned that melting sea ice is no solution to global warming.

Meanwhile, the Arctic Circle's summer ice could completely disappear by 2040, at least 40 years earlier than previous studies suggested, according to research published in mid December in the journal *Geophysical Research Letters*. The study is part of the 4th assessment of the *International Panel on Climate Change* set for release in February. The study said that melting of the ice could lead to other effects, such as a disruption of currents in the Northern Atlantic and melting along Greenland's ice sheet. "We have already witnessed major losses in sea ice, but our research suggests that the decrease over the next few decades could be far more dramatic," said report co-author Marika Holland of the *National Center of Atmospheric Research* in Boulder, CO.

Separate research from the *National Snow and Ice Data Center* (NSIDC), also in Boulder, found that expansion of sea ice in the fall had fallen off in recent years, with average ice coverage observed this fall at its lowest since observation began in 1979. Mark Serreze, a researcher at NSIDC, said in 20 years the extent of Arctic sea ice will be reduced by 80%. "And that could be another tipping point. It is no longer recovering as it should, and

if it reaches a critical level, it may never recover at all," he said.

According to a study presented at the *American Geophysical Society* annual meeting, the expansion of forests south of the equator will do more to lessen the effect of global warming than the expansion of forests north of the equator. The study concludes that by 2100, forests in mid and high latitudes will make some locations 10 °F warmer than they would be if the forests did not exist. This is because the warmth from sunlight absorbed by thick northern forest canopies cancels out the positive effects from the trees taking in carbon, the study said. "Our study shows that preserving and restoring forests is likely to be climactically ineffective as an approach to slow global warming," Carnegie Institute researcher and study co-author Ken Caldeira said.

Meanwhile, plants that usually only thrive in the southern parts of the U.S. are thriving more readily in the north because northern winters are becoming less harsh, according to a *National Arbor Day Foundation* study released in late December. The revised map of "hardiness zones" found that areas such as the Washington, D.C., metropolitan region could be classified as being able to support the same kinds of plants that North Carolina and Texas can support year round. In 1990, the Washington, D.C., area was on the border of northern and southern growing zones, according to a similar map created at that time by the Agriculture Department. The study also found that the climate is warm enough in Michigan to accommodate southern magnolia trees. Arizona cypress is also more likely to thrive in some sections of the Northeast than ever before, according to the study. The zones were mapped by examining local weather data and averaging the lowest temperature recorded in the 15 previous winters.

Global warming is also likely to have a serious impact on phytoplankton, the first link in the ocean's food chain, according to a study published in a December edition of the journal *Nature*. Studying almost a decade of satellite data, researchers at Oregon State University found that phytoplankton is very susceptible to changes in ocean temperature. The tiny plants, which grow in the upper layers of the ocean, can be spotted from space because they contain chlorophyll that

absorbs red and blue parts of the light spectrum. The researchers found that two big changes occurred in the phytoplankton concentrations in the ocean. In 1997-98, phytoplankton concentrations increased as El Niño effects were reversed, making the ocean's waters colder. As El Niño returned the ocean to its extended warming cycle from 1999-2004 and again between 2005-06, phytoplankton production declined. The study concluded that phytoplankton in the tropics and mid-latitudes could be most affected by global warming, which could in turn affect animal life that feed on phytoplankton in those regions.

In Sweden, officials at the Kolmaarden Safari Park said that the park's brown bears, confused by this year's late-season warm weather, have finally gone into hibernation for the winter — almost two months later than normal. Curators said the park's 10 bears are now all hibernating after record-high temperatures in December. The bears usually hibernate between October and April. Temperatures in southern Sweden, where the park is located, averaged 5 to 10 °C above normal in November, according to the Swedish Meteorological Service

Ski seasons in the U.S. at the end of the century may only last from Christmas Day to Presidents' Day due to global warming, according to another recent study. Using a snow-modeling computer program to extrapolate changes in snow patterns due to global warming through 2100, the study found that in the best-case scenario the snow season in Western states like Utah would only last about two months if current levels of GHG emissions continue. The study was conducted by *Stratus Consulting* and the *Institute of Arctic and Alpine Research* at the University of Colorado-Boulder.

National Center for Atmospheric Research scientist Stanley Solomon told the *American Geophysical Society* that his research on the upper atmosphere shows that GHG emissions are causing it to grow cooler, unlike the lower atmosphere, which is growing warmer. Solomon said the finding is important because it confirms theories made in the late 1980s that CO₂ released from the burning of fossil fuels could have an effect on the outer atmosphere. By 2017, CO₂ emissions will produce a 3% reduction in the density of the thermosphere with a resulting reduction in temperature,

Solomon said. He added though that the cooling of the thermosphere — which stretches from about 60 miles to nearly 400 miles above the Earth's surface — is a slow process and is “nothing to lose sleep over.” “CO₂ here will cause cooling rather than warming, but that's not what matters,” Solomon said. “What we have in common with research into the greenhouse effect is that predictions made by theoreticians were confirmed by observations. It lends credibility to the whole enterprise”

A study released in early January by a team of researchers from Oregon and Washington concluded that an increase in global temperatures over the next 40 years will cause the cost of timber in the state of Washington to rise, boost the prices of water and crops, cause double the wildfire damage that occurs normally, exacerbate public health issues and necessitate the expensive shoring-up of low-lying areas such as Tacoma and Willapa Bay. The study represents Washington's first attempt to assess how global warming will affect its \$269 billion economy. “It's safe to say that virtually every aspect of the state's economy will be affected by climate change,” said Bob Doppelt, study co-author and director of the University of Oregon's *Climate Leadership Initiative*. “But the impacts are manageable with an appropriate response, and climate change does open the door for new economic opportunities.” Such economic opportunities include the expansion of Washington's \$150 million solar industry and the growth of wind power projects, the fuel cell industry and the business of biofuels producers, the study said.

With experts projecting major increases in air travel, the aviation industry is now among the fastest growing sources of CO₂, accounting for 11% of transportation emissions in the U.S. and 2.7% of all domestic GHG emissions, according to the Federal Aviation Administration (FAA). Jet engines also spew significant quantities of nitrogen oxides (NOx) and sulfur dioxides (SO₂), aerosols, particulate matter and water vapor — emissions that contribute directly or indirectly to global warming, according to scientists who study aircraft emissions. Moreover, FAA estimates that aircraft-related GHGs, principally CO₂ and NOx, will increase by 60% in coming decades, passing the 300 million-metric-ton-per-year mark by 2020. Such projections have stirred new interest in airlines among climate scientists,

international governing bodies and advocacy groups, some of whom say the industry must be more proactive in mitigating climate change.

Meanwhile, airlines officials are lobbying to overhaul the nation's air traffic control system to allow aircraft to fly more direct routes and reap greater fuel savings. The current system, devised in the 1950s, relies on ground radio beacons that send electronic signals to aircraft, essentially acting as homing devices for aircraft. The system requires pilots to fly a zig-zagging path rather than plot the most direct routes between destinations, the Air Transport Association of America says. Such inefficiencies are particularly apparent in the eastern United States, where there are more planes and more airports, and along the Atlantic Coast where flight densities are the highest. The system results in airlines burning more fuel than would be necessary under a satellite-based system. Airlines have told the FAA that new navigation technology would allow them to reduce fuel consumption on many flights by as much as 25%.

In Sweden scientists have developed an experimental navigation technology for cars. The system plots the most fuel-efficient route between two points, allowing green drivers to find the most eco-friendly way to travel. The technology by the *Lund Institute of Technology* takes into account factors like traffic light frequency, speed limits and probabilities of traffic jams to plot the most efficient route possible. Initial tests show that the navigation system can cut a motorist's fuel use by 8.2%. “The most efficient roads are often those where you can drive at a fairly slow, constant speed, without having to stop or suddenly accelerate or decelerate,” scientist Eva Ericsson told *New Scientist* magazine. Scientists believe that more fuel-efficient driving could have a significant effect on the contribution transportation makes to CO₂ emissions.

At the *American Geophysical Society* annual meeting scientists reported that a regional nuclear war could cause planet-wide cooling. But any positive effects such an event might have toward stemming the tide of global warming would be canceled out by severe climatic and agricultural damages as well as the loss of millions of lives, the scientists said. Rutgers University researcher Alan

Robock said that a regional nuclear war might cause some parts of the planet to cool more than they did during the Little Ice Age of the 17th century when glaciers advanced over much of northern Europe. He added that vast urban firestorms ignited by war would send thick, dark clouds into the upper atmosphere, blocking the sun's rays and cooling much of the planet for up to a decade. “It would be very difficult for agriculture,” he said. The nuclear explosions could also damage the ozone layer in the upper atmosphere where, initially, 20% of the soot would be washed out by rainfall, University of California Los Angeles Department of Atmospheric and Ocean Sciences professor Richard Turco said. “All hell would break loose,” he added. Spurred by concerns of increasing nuclear risk and climate change, the *Bulletin of the Atomic Scientists* (BAS) in mid January moved their symbolic *Doomsday Clock* two minutes closer to midnight, from 11:53 to 11:55. The clock was created in 1947 to publicize the dangers of nuclear weapons. Since then, it has been adjusted 18 times, most recently in 2002.

The group cited nuclear tests and weapons as well as inadequate security as reasons to move the clock closer to the symbolic annihilation of civilization. But for the first time, the group also listed climate change as a danger to humanity. “Global warming poses a dire threat to human civilization that is second only to nuclear weapons,” it said. BAS sponsor Stephen Hawking said the group was trying to “alert the public to the unnecessary risks that we live with every day, and to the perils we foresee if governments and societies do not take action now to render nuclear weapons obsolete and to prevent further climate change.” BAS editor Mark Strauss said the clock would incorporate the threat of global warming from now on.

A higher percentage of Europeans than Americans rank climate change as a global concern that personally affects them, according to a poll released in early January by a French TV station. The poll of 2,000 respondents found that 54% of French and about 40% of Britons, Germans and Italians think global warming is one of the two top global challenges that personally affect them. Of Americans, 30% agreed with the statement — 49% said terrorism was in their top two concerns. The poll demonstrated that the debate in Europe is

about what action needs to be taken, while many in the U.S. still debate whether climate change is happening according to Cardiff University psychology professor Nick Pidgeon.

Some climatologists think the wide meteorological variability of the U.S. relative to Europe may partly explain Americans' slowness in embracing global warming efforts. And Pennsylvania State University climatologist Michael Mann hypothesized that Washington has been particularly slow to act on climate change because "the East Coast of the United States, and particularly the mid-Atlantic region, did not warm nearly as much as the rest of the globe over the 20th century. And that's where the decision-making is going on". But this year the new House Speaker Nancy Pelosi (D/CA) says she intends to take the newfound Congressional interest in global warming to another level with the creation of a special select committee devoted exclusively to that issue.

Also in mid December two dozen House members in a letter to top federal officials said that the federal government is overdue in producing a second national assessment of climate change and its impacts. The lawmakers — most of them Democrats — criticized the Bush administration for its decision to follow its 2000 national assessment of climate science and consequences with a series of 21 staggered, narrowly defined reports rather than with a major assessment. That decision violates the Global Change Research Act of 1990, the Democrats said. The law requires the government to prepare a scientific assessment every four years of current climate change research and effects, which the 21 reports do not, the House members said, echoing a position expressed by Sens. John Kerry (D/MA) and John McCain (R/AZ), as well as a coalition of environmental groups that in November filed a lawsuit on the matter. "To help Congress shape a well-informed, forward-looking climate change policy, we call on the Bush administration to comply with the law by producing a policy-relevant climate impacts assessment report at the earliest possible date," the letter says. It was addressed to acting Climate Change Science Program (CCSP) Director Bill Brennan. "The failure of the CCSP to produce a national assessment report within the time frame required by law has made it more difficult for Congress to develop a comprehensive

policy response to the challenge of climate change."

Meanwhile, according to Lord Peter Levene, chairman of *Lloyd's of London*, insurance companies face a growing number of weather-related risks due to global warming, including the threat of a \$100 billion payoff should a hurricane make landfall on the Atlantic Coast. "Mega-catastrophes and climate change are two powerful forces here to stay," he said, "We don't yet know exactly what the future will bring." "There is little or nothing that could be done now to turn back the clock," he said. "Even if we stop all man-made emissions now, we would still endure 30 years of warming before the effects take hold." He said there was a doubling of natural catastrophes between the 1960s and 1990s, and in 2005, total global insurance claims hit a record \$83 billion, with more than 80% of those costs tied to U.S. hurricanes. The *National Association of Insurance Commissioners* established a climate change task force in early 2005, and held its first public hearing in December in San Antonio, TX.

Also in December at a conference in Thomasville, GA, a coalition of more than 30 religious and scientific leaders "agreed that there was no such thing as a Republican or Democrat, a liberal or a conservative, a religious or secular environment," said Eric Chivian, a Nobel laureate who heads the Harvard environment center. "We have begun a critically important dialogue, that we scientists and evangelicals are committed to speaking with one voice about the global environment." Future plans of the group includes a second conference later this year to unite science, religious and other leaders, and releasing educational materials that pastors can use to incorporate environmental issues into their sermons and other teaching.

The new coalition then headed to Capitol Hill in mid January to urge action to stop global warming. Leaders of the group include NASA climatologist James Hansen and the chief lobbyist for the *National Association of Evangelicals* (NAE), Rich Cizik. In a statement, the still-unnamed group said that Earth is "seriously imperiled by human behavior" and called on Americans to "steward the natural world in order to preserve [the planet] for ourselves and future generations." Among those who have signed the statement are biologist Edward

O. Wilson, former National Science Foundation Director Rita Colwell, the Rev. Joel Hunter and the Rev. Jim Ball, executive director of the *Evangelical Environmental Network*. Cizik said the group's position was simple. "America should led on all of these issues," he said, speaking of efforts to fight climate change and preserve biodiversity. "But America has not led as it should." The NAE and U.S. EPA will launch a campaign in February to reduce energy consumption in the religious organization's 45,000 member congregations, via EPA's *Energy Star* program, Cizik said.

But also along religious lines, the school board in Federal Way, WA in January, adopted a three-point policy on the showing of former Vice President Al Gore's documentary "*An Inconvenient Truth*" after the parent of a child whose teacher wanted to show the film complained. The policy requires teachers who want to show the movie to ensure that a "credible, legitimate opposing view will be presented" and that the principal and the superintendent must approve the viewing before it occurs. The school board imposed the restrictions on viewing the film after Frosty Hardison, a parent who said that he believes the Earth is 14,000 years old, sent an e-mail to the school board complaining about the film. "The information that's being presented is a very cockeyed view of what the truth is ... The Bible says that in the end times everything will burn up, but that perspective isn't in the DVD," Hardison said. School Board President Ed Barney said that the requirement to represent another side of the global warming debate follows district policy to represent both sides of any controversial issue. "*An Inconvenient Truth*" co-producer Laurie David said that this is the first time that a school board has imposed restrictions on the viewing of the film. "I am shocked that a school district would come to this decision," David said. "There is no opposing view to science, which is fact, and the facts are clear that global warming is here, now".

In a related matter, the *National Science Teachers Association* (NSTA) declined to help distribute 50,000 copies of "*An Inconvenient Truth*" to schools despite multiple requests by teachers for the documentary. David accused the group of declining over fears of losing funding from petroleum companies that dispute global warming. The teachers' group

previously distributed movies by petroleum companies to schools. Teachers claim that a lack of educational materials are preventing them from educating students about global warming, a key subject that many feel students should have more formal education in. “I personally have led class discussions on global warming for several years, being sure to emphasize the lack of consensus on the topic, and the [relatively] short time span of data that we are dealing with, yet stressing the significance of the possibility,” said Jim Wanamaker, a biology teacher at Lewiston-Porter High School in Youngstown, NY. “Having a chance to review at least some segments of ‘*An Inconvenient Truth*’ with my students will allow the students to make their own educated decisions about their own lifestyles and the effects that they may have on our planet’s future.” Gerry Wheeler, NSTA’s executive director, said the group does not endorse films, but would be happy to distribute the film if it came with a disclaimer that the group did not endorse the film. He added that he would put global warming among the list of must-teach emerging topics, along with HIV/AIDS science.

Meanwhile, the *American College & University Presidents Organization* has secured the signatures of 30 academic institution heads for the group’s *Climate Commitment* agreement. The agreement requires the presidents to develop plans for achieving climate neutrality and to accomplish two of five measures that include the construction of buildings to an environmentally friendly standard; purchasing energy efficient appliances; offsetting all GHG emissions generated by air travel by faculty, staff, students and visitors to the institution; providing and promoting public transport for faculty, students and staff; and purchasing at least 15% of the institution’s electricity from renewable sources. “Leading society in this effort fits squarely into the educational, research and public service missions of higher education,” *Association for the Advancement of Sustainability in Higher Education* Executive Director Judy Walton said. “No other institution in society has the influence, the critical mass and the diversity of skills needed to successfully reverse global warming”.

Also, a coalition of environmental groups announced in mid January that they have won commitments from more than a dozen

banks to deny loans to companies seeking to develop large-scale GHG gas-emitting facilities such as coal-fired electric power generation projects. But several banks — including *Merrill Lynch*, *Citigroup* and *Morgan Stanley* — are resisting the requests and are proceeding with plans to underwrite such projects. *Ceres Electric Power Programs* Director Dan Bakal, whose group is part of the coalition, said that banks are under increasing scrutiny amid a growing awareness of the negative affects of climate change. *Bank of America* is the only U.S.-based bank to commit to cutting back all its funding of energy projects that produce large quantities of GHGs. “We are changing the mix of our loan portfolio, and adding customers who are using renewable energy resources,” *Bank of America* spokeswoman Eloise Hale said. “We’re applying good fiscal practices to good environmental behavior, and routinely asking them about their GHG emissions.”

The *League of Conservation Voters* (LCV) has launched a campaign aimed at pressuring presidential candidates to state a clear position on climate change and make it a “top priority” early in the 2008 race. “*The Heat Is On*” campaign will also try to educate voters about climate in key early primary and caucus states and encourage them to raise the issue with the presidential candidates. Navin Nayak, director of the *LCV Education Fund’s Global Warming Project*, said the group will partner with state chapters on voter-outreach and also try to reach the press, donors and other players in the nominating process. “The idea is to make sure ... candidates are hearing those concerns everywhere they go,” Nayak said. LCV has also launched a Web site that lists public events by presidential candidates and urges voters to “place the issue” in front of them. The site also provides information about candidates’ positions on climate change.

In early, January Michael Dell of *Dell Inc.* launched a new initiative called, “*Plant a Tree for Me*” enabling *Dell* customers to make a donation at the point of purchase to *The Conservation Fund* and *Carbonfund.org* so that the nonprofit groups can plant trees that convert CO₂ into oxygen. For \$2, with a notebook computer purchase, and \$6, for a desktop computer, customers would offset CO₂ emissions generated by running those computers for three years, *The*

Conservation Fund says. The Arlington, VA-based group figures that one tree would sequester an average of 1.33 tons of CO₂ over seven years, while a notebook computer would emit 0.42 tons of CO₂ and a desktop model would emit 1.26 tons of the gas over their respective lifetimes. “These amounts will essentially plant a tree or pay for a portion of planting a tree that will absorb CO₂ emissions,” Dell said. Officials with *Carbonfund.org* and *The Conservation Fund* said they will use the donations to plant trees globally, and that in the U.S., trees will be planted amid wildlife refuges, county parks and other areas where they will not be harvested for timber. The carbon offset program follows Dell’s industry-first pledge last fall to recycle customers’ Dell-branded computers and peripheral equipment at no charge. The global recycling service is not tied to a replacement purchase. The Austin, TX, company also unveiled a computer line it says will use 70% less power than previous-generation *Intel* processors.

About 20 Montana farmers — mostly wheat growers operating no-till systems — are interested in selling carbon credits generated by their farming practices on the Chicago Climate Exchange, and the exchange may soon allow them to do so, *National Carbon Offset Coalition* spokesman Ted Dodge said. *Montana Salinity Control Program* Director Jane Holzer said that the credits are worth between \$250 and \$350 per year for every 100 acres that meet carbon sequestration standards. No-till farmers, or chemical farmers, do not till the soil between planting seasons, preferring instead to grow crops from year to year without disturbing the soil through tillage. Because they do not till the soil, they keep the carbon in the dirt from escaping as it normally would if it was turned over and thus they do not add an excess amount of CO₂ to the atmosphere every year. “Many of them are doing this from a conservation standpoint, but now there’s an opportunity for some remuneration for it,” Holzer said.

Meanwhile, U.K. Environment Secretary David Miliband says that farmers and livestock breeders that produce excess GHG emissions should be punished for their negative impact on the environment. Methane from livestock accounts for 20-30% of the global warming phenomenon. A recent U.N. report concluded that livestock flatulence produced more GHG

emissions than transportation. In New Zealand, the country's 45 million sheep and 8 million cattle account for about 90% of the country's methane emissions. But, Miliband said, climate change could also prove to be an economic boon for many farmers, especially as the demand for biofuels increases. Global warming "creates problems, but it will also create new markets and new opportunities," Miliband said. Genetically modifying cows and sheep to expel less methane could be key to reversing the harmful effects of climate change, according to John Houghton, former chairman of the U.N.'s scientific panel on climate change. Besides genetic modification, tests in New Zealand show that shifting the pastures livestock graze in could reduce the amount of methane expelled by as much as 16%.

In a surprise move, *Exxon Mobil* is softening its stance on climate change by pulling funding from global warming skeptic groups while becoming more engaged in the debate over future policy. Kenneth Cohen, *Exxon's* vice president for public affairs, confirmed in mid January that *Exxon* decided not to fund the *Competitive Enterprise Institute* in 2006 as well as "five or six" other groups that are skeptical about global warming. *Exxon* has been the focus of much criticism by environmental and scientific groups for funding global warming skeptics. The company has spent \$16 million between 1998 and 2005 to fund 43 small nonprofit groups that question the science behind global warming, according to an analysis released in early January by the *Union of Concerned Scientists*. *Exxon* is now engaging in discussions with other companies to discuss the potential structure of U.S. carbon regulations. The company has maintained that it is still unknown to what extent GHGs contribute to global warming, but Cohen said "we know enough now — or, society knows enough now — that the risk is serious and action should be taken".

But deep cuts to National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration's (NOAA) budgets are impeding research efforts that could provide important information about climate change in the future, according to a report released in mid January by the National Academy of Science's National Research Council. The two-year study

found that NASA's earth science budget declined by 30% since 2000 and is expected to fall further with adjustment to fund a manned mission to the moon and Mars. And NOAA's *National Polar-orbiting Operations Environmental Satellite System* — intended to be the next-generation weather forecasting satellite — is three years behind schedule and as much as \$3 billion over budget, according to GAO figures. "If things aren't reversed, we will have passed the high-water mark for our Earth observations," said panel co-chairman

Richard Anthes of the *University Corporation for Atmospheric Research*. "We need to know more, not less, about long-term aspects of climate change, about trends in droughts and hurricanes, about what's happening in terms of fish stocks and deforestation." The group also recommended spending more on studying ice-sheet and sea-level changes, extreme weather and natural hazards. The underfunded NASA projects, such as Earth-monitoring missions, need about \$500 million annually to bring them up to speed — about the funding levels reached during former President Clinton's administration. Overall, the report advised spending about \$7.5 billion in 2006 dollars on new instruments and satellite missions through 2020, which it said would keep annual costs at 2000 levels, as a percentage of the economy.

Finally, by one estimate most U.S. households could offset their GHG emissions for less than \$100 a year. A new report finds that perhaps three-dozen companies and organizations have popped up in recent years to help individuals or small companies calculate their emissions footprint and offset it with low- or no-carbon renewable energy. But not all offsets are created equal and buyers should beware according to the author of *Clean Air-Cool Planet*, a first-of-its-kind report that evaluates 30 international providers who sell carbon offsets in the U.S. market. Providers were rated against seven criteria, including how they prioritize the quality of their offsets; how easily buyers can evaluate offset quality; transparency in provider operations and offset selection; and how well providers understand technical aspects of offset quality. "The biggest challenge is finding out how to get more consumers to participate in this market," he added. "Surveys show that everyone is interested in global warming, but when

it comes to going to a Web site and calculating their carbon footprint and doing something, it is another matter."

To help address the credibility and transparency challenge in the retail providers market, a California nonprofit is developing a retail GHG reduction product standard. The San Francisco-based *Center for Resource Solutions* aims to provide consumers third-party verification of GHG offsets. The goal is to ensure that a vendor's supplies equal sales and retired offsets at the same as advertised.

Sources: *Reuters*, 1/17/07; Will Dunham, *Reuters*, 1/17/07; Raphael G. Satter, *AP/Toronto Globe and Mail*, 1/17/07; Mike Stark, *Billings Gazette*, 1/4/07; Paul Owen, *London Guardian*, 1/3/07; Marc Kaufman, *Washington Post*, 12/12 and 1/16/07; Andrew C. Revkin, *New York Times*, 12/11/07, 1/16/07; Mark Harper, *Daytona [Fla.] News-Journal*, 1/13/07; John Donnelly, *Boston Globe*, 1/16/07; Amelia Nielson-Stowell, *Salt Lake Deseret Morning News*, 1/10/07; Dan Richman, *Seattle Post-Intelligencer*, 1/11/07; McClure/Stiffler, *Seattle Post-Intelligencer*, 1/11/07; *E&ENews PM*, 1/3/07; Jeffrey Ball, *Wall Street Journal*, 1/11/07; *Agence France-Presse*, 12/6, 12/11, 12/14, 1/9/07; *New Scientist*, 1/8/07; Charles Clover, *London Telegraph*, 1/5/07; Ian Sample, *London Guardian*, 1/4/07; Jeremy Watson, *Scotsman*, 1/7/07; Michael Sheridan, *The Australian*, 1/8/07; Thomas Crampton, *International Herald Tribune*, 1/4/07; Darren Samuelsohn, *E&E Daily*, 1/17/07; David Perlman, *San Francisco Chronicle*, 12/12/06 and 1/5/07; Robert Lee Hotz, *Los Angeles Times*, 1/5/07; Peter N. Spotts, *Christian Science Monitor*, 1/4/07; Sailendra Sil, *Agence France-Presse*, 12/21/07; Valerie Strauss, *Washington Post*, 12/19/07; David A. Fahrenthold, *Washington Post*, 12/20/06; *BBC News online*, 12/14/06; Steve Connor, *London Independent*, 12/12/06; Keay Davidson, *San Francisco Chronicle*, 12/12/06; Deborah Smith, *Sydney Morning Herald*, 12/28/06; Richard Black, *BBC News online*, 11/27/06; *AP/International Herald Tribune*, 11/28/06; Lauren Morello, *Greenwire*, 12/15 and 1/17/07; Daniel Cusick, *Greenwire*, 1/17/07; Alex Kaplun, *Greenwire*, 1/15/07; Darren Samuelsohn, *Greenwire*, 1/12/07; Michael Burnham, *Greenwire*, 1/10/07; and *Greenwire*, 11/28, 12/6, 12/12, 12/13, 12/20, 12/21, 1/4, 1/5, 1/8, 1/11, 1/12, 1/16, 1/18/07

Meetings of Interest

Mar 9-11: 27th Annual Midwest Ecology and Evolution Conference, Kent State University, Kent, OH. See: www.midwesteec.org. Contact: Jennifer Clark, mec2007@hotmail.com.

Mar. 20: Special Workshop: Communicating Effectively About Aquatic Nuisance Species, 72nd North American Wildlife and Natural Resources Conference (Mar. 20-24), Pavilion East, Hilton Portland, Portland, OR.

Mar. 20-22: 63rd Annual UMRCC Meeting, Treasure Island Resort, Welch, MN. Contact: Bonnie Dohrn, Minnesota DNR, 1801 S. Oak Street, Lake City, MN 55041, bonnie.dohrn@dnr.state.mn.us

Apr. 1-4: 10th International Symposium on Wetland Biogeochemistry, Annapolis, MD. See: www.serc.si.edu/conference/index.jsp.

Apr. 9: Sustainable Waters in a Changing World: Research to Practice, Amherst, MA. See: www.wrrconference.com.

Apr 15-17: 18th Northeastern Recreation Research Symposium, Lake George, NY. See: www.esf.edu/nerr/.

Apr. 22-27: 2nd National Conference on Ecosystem Restoration (NCER), Hyatt Regency Crown Center, Kansas City, MO. See: <http://conference.ifas.ufl.edu/NCER2007> or contact: David A. Vigh, Conference Chair, (601) 634-5854, David.A.Vigh@mvd02.usace.army.mil.

May 14-16: New Strategies for Urban Natural Resources: Integrating Wildlife, Fisheries, Forestry, and Planning Conference, Lombard, IL. See www.informalearning.com/Wildlife.

May 20-23: Center for Natural Resource Economics and Policy Meeting: Challenges of Natural Resource Economics and Policy, the Second National Forum on Socioeconomic Research in Coastal Systems, New Orleans, LA. See: www.cnrep.lsu.edu/pdfs/CNEP.

May 20-25: International Conference on Ecology and Transportation 2007, Little Rock, AR. See: www.icoet.net.

May 21-24: Interagency River Manager's Workshop, River Management Society, Holiday Inn Parkside, Missoula, MT. See: www.river-management.org

May 21-24: Fifth International Conference on Marine Bioinvasions, Massachusetts Institute of Technology, Cambridge, MA. Contact: Judith Pederson, MIT Sea Grant College Program, (617) 252-1741, <http://massbay.mit.edu>. See: <http://massbay.mit.edu> or <http://web.mit.edu/seagrant/bioinvasion2007/index.html>

May 24-27: Aquarama 2007: Tenth International Aquarium Fish and Accessories Exhibition and Conference, Singapore. See: www.aquarama.com.sg.

Jun. 3-8: Charting the Course: New Perspectives in Floodplain Management, Norfolk, VA. See: www.floods.org/norfolk.

Jun 6-9: Fourth International Reservoir Symposium: Balancing Fisheries Management and Water Uses for Impounded River Systems, Atlanta, GA. See www.sdafs.org. Contact: Mike.Colvin@mdc.co.gov.

Jun. 10-15: Society of Wetland Scientists International Conference: Water, Wet-

lands, and Wildlife—Resolving Conflicts and Restoring Habitat, Sacramento, CA. See: www.sws.org/sacramento2007.

Jun 17-21: 13th International Symposium on Society and Resource Management, Park City, UT. See: www.issrm2007.org.

Jun. 20-23: Tenth National Watershed Conference, La Crosse, WI. See: www.watershedcoalition.org

Jul 11-16: American Society of Ichthyologists and Herpetologists Annual Conference, St. Louis, MO. . See: www.dce.ksu.edu/jointmeeting/.

Aug. 7-9: Managing Vertebrate Invasive Species. Hilton Hotel, Fort Collins, CO. Hosted by the USDA/APHIS/Wildlife Services/National Wildlife Research Center. Contact: Dr. Kathleen A. Fagerstone, kathleen.a.fagerstone@aphis.usda.gov

Sep 2-6: American Fisheries Society, 137th Annual Meeting, San Francisco, CA. See: www.fisheries.org/sf/.

Sep 16-19: International Symposium: WILD TROUT IX, West Yellowstone, MT. See: www.wildtrout-symposium.com/. Contact: Dirk Miller, Dirk.Miller@wgf.state.wy.us, (307) 777-4556.

Aug. 17-21, 2008: American Fisheries Society 138th Annual Meeting, Ottawa, Ontario. Contact: Betsy Fritz, bfritz@fisheries.org, (301) 897-8616, ext. 212.

Oct 5-9, 2008: Pathways to Success 2008 Conference: Integrating Human Dimensions into Fisheries and Wildlife, Estes Park, Park, CO. See www.warnercnr.colostate.edu/nrrt/hdfw/partners.html. Contact: eduke@warnercnr.colostate.edu.

Congressional Action Pertinent to the Mississippi River Basin

Climate Change

S. RES. 30. Biden (D/DE) and Lugar (R/IN). Expresses the sense of the Senate regarding the need for the U.S. to address global climate change through the negotiation of fair and effective international commitments.

Conservation

S. 50. Isakson (R/GA). Amends the Internal Revenue Code of 1986 to provide economic incentives for the preservation of open space and conservation of natural resources, and for other purposes.

S. 241. Wyden (D/OR) and Akaka (D/HI). Authorizes the Secretary of the Interior to enter into coop agreements to protect natural resources of units of the National Park System through collaborative efforts on land inside and outside of units of the National Park System.

S. 272. Coleman (R/MN). Amends P.L. 87-383 to reauthorize appropriations to promote the conservation of migratory waterfowl and to offset or prevent the serious loss of important wetland and other waterfowl habitat essential to the preservation of migratory waterfowl, and for other purposes.

H. R. 469. Stupak (D/MI). Enables the Great Lakes Fishery Commission to investigate effects of migratory birds on sustained productivity of stocks of fish of common concern in the Great Lakes.

Energy

H. R. 6. Rahall (D/WV) and 197 Co-Sponsors. Reduces the Nation's dependency on foreign oil by investing in clean, renewable, and alternative energy resources, promoting new emerging energy technologies, developing greater efficiency, and creating a Strategic Energy Efficiency and Renewables Reserve to invest in alternative energy, and for other purposes.

H. R. 80. Bartlett (R/MD). Provides for Federal research, development, demonstration, and commercial application activities to enable the development of farms that are net producers of both food and energy, and for other purposes.

Federal Water Pollution Control Act (FWPCA) Amendments:

H. R. 110. J. Davis (R/VA). Amends the FWPCA to impose limitations on wetlands mitigation activities carried out through the condemnation of private property.

S. 134. Allard (R/CO) and Salazar (D/CO),
H. R. 186. Musgrave (R/CO) and **H.R. 317.** Salazar (D/CO). Authorizes the construction of the Arkansas Valley Conduit in the State of Colorado, and for other purposes.

Invasive Species

S. 336. Durbin (IL) and 7 Co-Sponsors and
H. R. 553. Biggert (R/IL) and 24 Co-Sponsors. Requires the Secretary of the Army to operate and maintain as a system the Chicago Sanitary and Ship Canal dispersal barriers.

H. R. 83. Biggert (R/IL). Amends section 42 of title 18, U.S. Code, popularly known as the Lacey Act, to add certain species of carp (black, bighead, silver and largescale silver) to the list of injurious species that are prohibited from being imported or shipped.

H. R. 260. Ehlers (R/MI). Establishes marine and freshwater research, development, and demonstration programs to support efforts to prevent, control, and eradicate invasive species, as well as to educate citizens and stakeholders and restore ecosystems.

Water Resources

H. R. 68. McIntyre (D/NC). Amends the Water Resources Development Act of 1976 to allow the Secretary of the Army to extend the period during which beach nourishment for water resources development projects may be provided.

H. R. 307. Pearce (R/NM). Imposes limitations on the authority of the Secretary of the Interior to claim title or other rights to water absent specific direction of law or to abrogate, injure, or otherwise impair any right to the use of any quantity of water.

H. R. 574. Whitfield (R/KY). Ensures the safety of residents and visitors to Lake Barkley, KY, improves recreation, navigation, and the economic vitality of the lake's region, and establishes a pilot program to maintain the pool elevation of such lake at 359 feet until after the first Monday in September.

H. R. 591. Musgrave (R/CO). Amends the Cache La Poudre River Corridor Act to designate a new management entity, make certain technical and conforming amendments, enhance private property protections, and for other purposes.

Source: <http://www.gpoaccess.gov/bills/index.html>; and <http://thomas.loc.gov/cgi-bin/thomas>

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