River Crossings

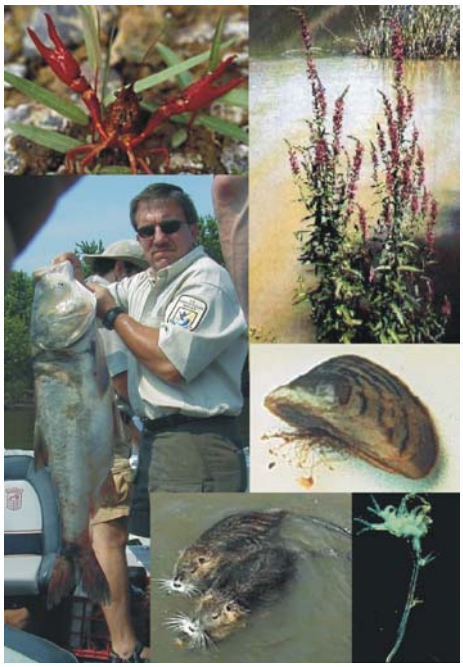
Volume 12 **July/August 2003** **Number 4**

Mississippi River Basin Aquatic Nuisance Species Panel Formed

MICRA was invited by the National ANS Task Force to host a Mississippi River Basin Panel (MRBP) on Aquatic Nuisance Species (ANS) in 2001. MICRA prepared an organizational strategy for such a Panel in 2002, and the ANS Task Force accepted this strategy at their November 2002 meeting. MICRA was given approval to proceed and plans were finalized in February 2003. Potential participants were invited to join the Panel in March and April, and an Organizational meeting was held in July.

The Panel currently includes members representing 5 federal agencies, 24 states, 1 Canadian province, 5 regional entities, 2 environmental/user groups, 5 private/ commercial groups, 2 university/research institutions and 2 at-large stakeholders, for a total of 46 members. Additional members are expected to join, including at least two Tribal and two local community members. Panel membership is also expected to expand and contract with each major issue addressed.

MICRA appointed a Chairperson (Jay Rendall, Minnesota Department of Natural Resources) and Vice Chairperson (Michael Hoff, U.S. Fish and Wildlife Service) to serve during the first year of Panel activity. After its initial year of operation the Panel is expected to elect its own Chairperson and Vice Chairperson. The MICRA Coordinator is also providing support and coordination services for the new ANS Panel.



Examples of aquatic nuisance species (ANS) in the Mississippi River Basin. Clockwise from top left: Red swamp crayfish, Purple loosestrife, Zebra mussel, Spiny waterflea, Nutria, and Bighead carp.

Forty persons attended the Panel's Organizational Meeting held in Bloomington, MN on July 10-11. The meeting included a symposia on ANS problems and issues in the Mississippi River Basin and a field trip to the St. Croix River to introduce Panel members to local ANS issues and responses being made by federal, state and local governments.

A second Panel meeting is anticipated for November 2003, and will most likely be held in Louisiana or Mississippi. Plans include moving the locations of Panel meetings to various cities within the 32 state basin in order for the Panel to view the Basin's wide array of ANS problems as well as to alternately facilitate ease of travel for all Panel participants.

At the Organizational Meeting, Panel members formed the following three standing committees and elected the respective Chairpersons shown:

- Education/Communication, Steve Schainost (Nebraska Game and Parks Commission)

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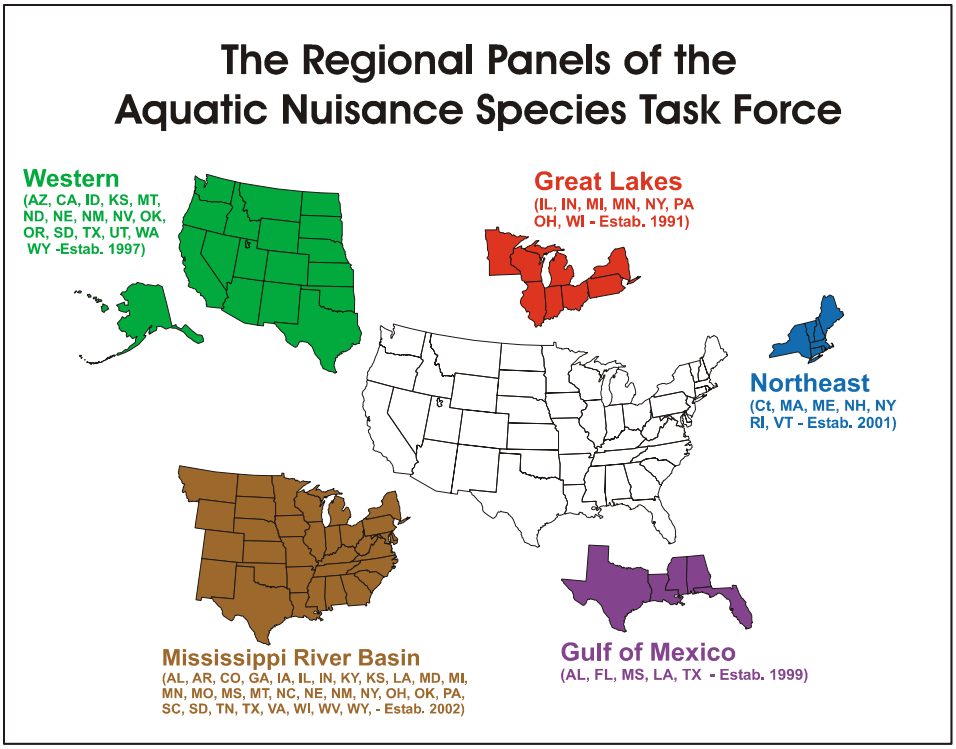

The Mississippi River Basin Aquatic Nuisance Species Panel and its four (Western, Great Lakes, Northeast and Gulf of Mexico) regional counterparts.

- Research and Risk Assessment, Cindy Kolar (USGS)
- Prevention and Control, Kim Bogenschutz (Iowa Department of Natural Resources)

The Panel also established an Executive Board to oversee operational matters between Panel Meetings. Board members include the Panel Chairman, Panel Vice Chairman, Panel Coordinator, Committee Chairs, one Commercial Representative , and one Environmental Representative. Tribal and Community representation on the Board is anticipated once those vacancies are filled on the Panel. Committee activity is expected to begin shortly.

New Record Bighead Carp

Just days after the May/June issue of *River Crossings* published the picture shown on the opposite page (left top) as the "world record" bighead carp (claim made by picture provider), we heard from Bob Howells, Texas Parks and Wildlife Department that an even larger bighead had been taken from a Texas reservoir. Howell said, "Unfortunately, even invasive exotic species are apparently bigger in Texas!!!"

The new "world record" 90 lb. bighead carp (shown on the opposite page bottom right) was taken from Lake Kirby, just south of Abilene, TX, on July 22, 2000 by angler Timothy B. Conner. The fish is listed in the National Fresh Water Fishing Hall of Fame's Official World's and USA State Fresh Water Angling Records. When the fish was taken, water levels in Lake Kirby were falling dramatically due to drought conditions.

During the same time period, local fishery management biologists reported two other bighead carp in the 70-lb range being taken in Lake Kirby, and a 65-lb bighead from Fort Phantom Hill Reservoir a short distance to the north of Abilene. Both impoundments are in the Brazos River drainage.

Other Texas bighead carp records include: Victor Braunig Reservoir and a private pond near San Antonio, Bexar County, San Antonio River drainage; the Red River below Dennison Dam, Grayson County; a Red River oxbow, Fannin County; and Lake Conroe, Montgomery County, San Jacinto River drainage (Howells, R.G. 2001.

River Crossings

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

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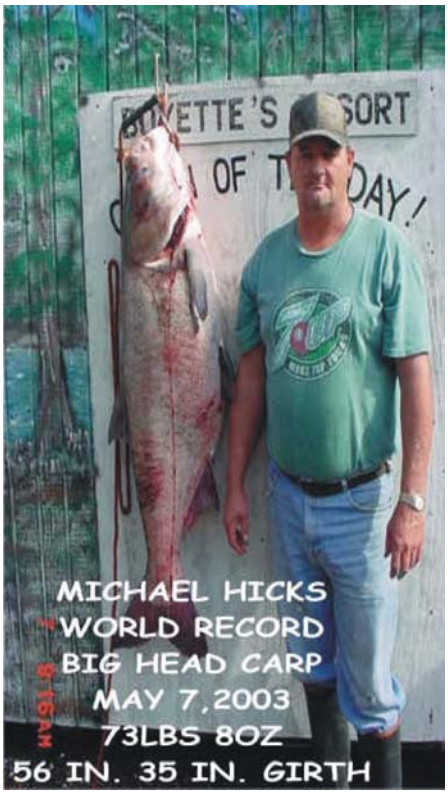
Coordinator for Large River Activities
Jerry L. Rasmussen, U.S. Fish and Wildlife Service, Rock Island, IL
MICRA email: ijrivers@aol.com
MICRA Web Site: http://wwwaux.cerc.cr.usgs.gov/MICRA/

River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information provided by the newsletter, or opinions expressed in it by contributing authors are provided in the spirit of "open communication", and do not necessarily reflect the position of MICRA or any of its member States or Entities. Any comments related to "River Crossings" should be directed to the MICRA Chairman.



Introduced non-native fishes and shellfishes in Texas waters: an updated list and discussion. Texas Parks and Wildlife Department Management Data Series 188, Austin).

Howells said, "The presence of bighead carp at scattered locations in Texas likely reflects use of the fish as trotline bait prior to legal restrictions on the species in 1990. Although grass carp do successfully spawn in the Trinity River downstream of Lake Livingston, there is no confirmation of bighead carp spawning in Texas at this time.

Sadly for the Mississippi River Basin, it seems that bighead carp just keep getting larger and larger. Once thought to be "topping out" in size at around 50 lbs., they now seem to be capable of exceeding weights in excess of 100 lbs. Their spread has been documented as far north as the James River in South Dakota and possibly in the Red Cedar River (tributary to the Chippewa River) in Wisconsin. Barry Poulton, Ph.D. research ecologist with the USGS, Biological Resources Division River Studies Station in Columbia, MO, says that in early June he is certain that he saw an Asian carp in the Red Cedar River in downtown Menomonie, about three-quarters of a mile below the dam.

Ron Benjamin, Wisconsin Department of Natural Resources (DNR) fisheries ecologist at La Crosse, said that an Asian carp was reported being caught by a commercial fisherman in Pool 9 of the Mississippi River (between Genoa and Lynxville) last year, but he has not heard of others or seen any in his work on the river. "That doesn't mean that they aren't this far up. They are extremely strong swimmers and travel great distances," Benjamin said. "I expect that over the next three to five years they will be in the Mississippi around La Crosse and all its tributaries up to the first impassible dam. That includes the Wisconsin River up to Prairie du Sac."

Mike Staggs, director of fisheries management for the Wisconsin DNR, knows that Asian carp carry the potential for major impacts on Wisconsin waters, just as the European carp did years ago. "We know that naturally reproducing populations of grass carp are well established in the lower reaches of Wisconsin's part of the Mississippi River, and that significant numbers of bighead and silver carp have been seen in Iowa and Illinois waters of the Mississippi River," Staggs said. "They are probably up to at least the first dam in Wisconsin."

Additionally, to the alarm of state conservation officials, the first confirmed bighead carp has been caught in Chicago. A surprised fisherman pulled the 38 lb. fish out of a lagoon in McKinley Park. The lagoon isn't connected to Lake Michigan. "But if somebody put it there, they could easily put it in Lake Michigan," said Tom Trudeau, fisheries program administrator for the Illinois Department of Natural Resources. He speculated that the fish was dropped into the McKinley Park lagoon in keeping with the custom, practiced by some Asians, "that for every fish you eat, you release one." He noted that the City Council last year passed an ordinance banning possession of live Asian carp.

The impact of Asian carp on the ecosystem will be dramatic, and once they begin reproducing locally, very difficult to stop. Staggs said that Wisconsin needs to deal with Asian carp before they arrive in force:

- First, the state needs legislation that bans the possession (including import, sale and transport) of any live Asian carp and other similar hazardous invasive species.
- Second, Wisconsin needs to support efforts to close the Chicago Sanitary and Ship Canal to fish passage. This would mean shutting the canal — which connects the Great Lakes to the Mississippi River via the Chicago and Des Plaines rivers — and piping the wastewater to proper wastewater treatment facilities. Currently, the Chicago canal has an experimental electrical barrier in place but many believe it will not stop some Asian carp from reaching Lake Michigan and also will fail to keep Lake Michigan's other exotics from moving downstream into the Mississippi River system. A $1.6 million electrified barrier was built in the ship canal at Romeoville last year to repel the invaders, but its electrodes are expected to last only two or three years. A permanent $7 million barrier, funded by Illinois and U.S. Army Corps of Engineers, will be added to the canal as early as next fall.
- Third, people must become aware of Asian carp and not transfer fish into new bodies of water. Currently people collect their own bait — except in trout streams — subject to some modest limitations. But, if people catch silver or bighead carp fry in with fathead minnows and take them up north to fish they will be spreading the exotics to other bodies of water, Staggs said.

It is also important that boaters and fishermen planning a day on the water take time to wash off boats and clean out live wells and bait buckets in order to not spread zebra mussels, Eurasian water millfoil, or other exotics to other waters. Boaters and fishermen therefore should:

- Remove visible plants, mud, etc. from boats and trailers before leaving the landing:

• Drain water from all equipment (motor, live well, bilge,) before leaving the landing; and
• Rinse boats and equipment with hot water or clean and dry the boat before going to another lake.

Also, no one should release any live bait, plants or animals into a lake from which it didn't come originally.

Sources: Bob Howells, Texas Parks and Wildlife Department, Ingram, TX; Tom Eisele, *Capital Times*, 7/2/03; and Gary Wisby, Environment Reporter and Dale Bowman, *Chicago Tribune*, 6/10/03

Flathead Catfish Demise — A Victory For Arizona Native Species

Stocking flathead catfish, native to the Mississippi River Basin, for recreational fishing in Arizona's Salt River seemed like a good idea in 1974 when state Game and Fish Department (GFD) biologists released 400 four-inch long hatchlings into the River north of Roosevelt Lake. But flatheads, voracious predators, gobbled up the fish native to Arizona and instead of becoming a recreational fishing attraction, they quickly became an aquatic nuisance species. They multiplied, and the native fish disappeared while officials could only watch.

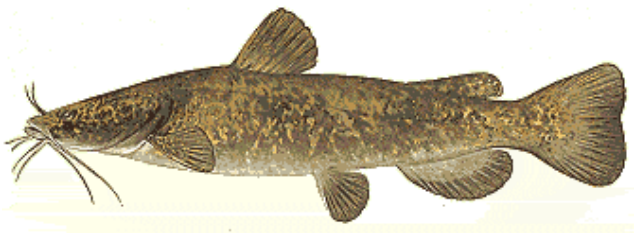
GFD biologists quickly realized that there was no point in reintroducing the Sonora suckers, roundtail chub and other native fish because the flatheads, which can grow past 4 feet in length, would just eat them, too. And State biologists knew that once the catfish were in the river, there was no getting them out. So when GFD biologists took their annual fish survey this spring along 32 miles of the Salt River, they were stunned — the flatheads were nearly gone!

Normally, river surveys would turn up hundreds of flatheads, but biologists only came up with 35, said Jim Warnecke, fish program manager for the GFD. Biologists aren't certain how this happened, but they theorize that the "Rodeo-Chediski" fire played a role. It burned from June 18 to July 7, 2002, and a month later, monsoon storms swept ash and soil into the river's tributaries, turning the Salt River black with sediment.

Scientists worried that nutrients in the runoff would cause algae to bloom in Roosevelt Lake, consuming the water's oxygen and killing the fish. But this didn't happen, and the flatheads were not expected to be affected because as natives of the Mississippi River, they are accustomed to muddy waters. But since they didn't make it, Warnecke speculates that the ash killed them.

The largest catfish found was only 20 inches long — the biologists found larger carp — and there were no young fish, evidence that the catfish were not reproducing. Now, wildlife officials contemplate bringing back some of the native species. "This will help us keep those species of fish off the endangered list, and that's what we want to do," Warnecke said. There are no other apparent after effects of last year's fire runoff to the Salt River. The water is clear, and there is a healthy supply of insects for fish to eat. "There's no reason why we couldn't put fish in there and expect them to live," he said.

Even environmentalists are impressed. "It's very rare to be able to clean out the main stem of a river of exotics, and that's really the only way these species are going to recover," said Kieran Suckling of the *Center for Biological Diversity*. "This sounds like a really unique and historic opportunity to create a large, thriving native fish population. And a human could not do this technologically."



"Flathead catfish"

There are 36 species of fish that are native to Arizona; 19 of those are listed as threatened or endangered under the Environmental Protection Act. Eight have been totally eliminated from Arizona waters. The Salt River species, though gone from the river, are not listed, but their existence is still precarious. "The roundtail is headed toward listing," Suckling said. "If they can get it reintroduced, that would go a long, long way."

But as hopeful as scientists are right now, they know the flatheads are not totally eradicated from the river. "It will take a while for them to get back to population levels," Warnecke said. "The native fish will gain a pretty good leghold before that happens."

Meanwhile, in Sabino Creek about two to three miles inside Sabino Canyon near Tucson, GFD officials have captured and moved more than 800 Gila chubs to move them out of the path of ash and sediment runoff from a recent 40,500 acre wildfire in the canyon. Officials transported them to a hatchery in central Arizona and a research facility in southern Arizona. "We will just hold them in a safe location until things calm down," Mitchell said. "We don't know how much ash and sediment the canyon is going to see." The Gila chub is a candidate for the endangered species list, and the population in Sabino Canyon is one of the largest among about two dozen separate stream and tributary populations in Arizona.

Source: Michael Kiefer, *The Arizona Republic*, 7/7/03 and Arthur H. Rotstein, *Associated Press and The Salt Lake Tribune*, 7/2/03

NOAA Center to Study Invasive Species

The National Oceanic and Atmospheric Administration (NOAA) has announced that it is establishing a new *National Center for Research on Aquatic Invasive Species* in Ann Arbor, MI. "Each year, aquatic invasive species wreak billions of dollars in damages on the U.S. economy, much of which is passed on to the consumer," said NOAA Administrator Conrad C. Lautenbacher. The new NOAA center will coordinate research efforts on invasive species and will work with other agencies.

Meanwhile, the *Smithsonian Environmental Research Center* in Edgewater, MD, announced it has formed a partnership with *CSIRO Marine Research* in Hobart, Australia. The two groups will combine their databases of invasive species, creating a global inventory to help scientists and managers cope with the problem. The two database systems provide extensive information about hundreds of marine species, said Greg Ruiz, director of the Smithsonian's Marine Invasions Research Laboratory.

By combining data from the Smithsonian and CSIRO — Commonwealth Scientific

and Industrial Research Organization — researchers can learn more about species that have already threatened their waters and others that may pose potential threats. The Smithsonian database, called NEMESIS — National Exotic Marine and Estuarine Information System — and its Australian counterpart summarize the invasion history, distribution, biology, ecology and impacts of invaders. Ruiz said the Smithsonian wants to add other partners to the effort including museums, government agencies, universities and other organizations that maintain databases on nonnative species.

NOAA's center for research on aquatic invasive species will be located at the agency's Great Lakes Environmental Research Laboratory in Ann Arbor, which has been studying invasive species for 14 years. Stephen Brandt, research lab director, said the center will establish regional coordinators in six major aquatic coastal regions around the country. Lautenbacher said Canada's Department of Fisheries and Oceans has indicated it plans to develop a similar *Canadian Aquatic Invasive Species Research Centre* and expressed the desire to have the two centers work together.

Source: *Associated Press* and *The New York Times*, 7/15/03

The Missouri River: Corps Held in Contempt of Court

The U.S. Army Corps of Engineers (Corps) in July was held in contemp of court for defying a federal court order requiring them to reduce Missouri River flows in order to meet the projected needs of three endangered species (piping plover, least tern and pallid sturgeon) and to come into compliance with a 2000 Biological Opinion (BO) written by U.S. Fish & Wildlife Service (FWS) biologists under authority of the federal Endangered Species Act (ESA).

In June a federal appeals panel ruled that federal district judges were wrong last year in ordering the Corps to maintain water levels on mainstem reservoirs in South Dakota and North Dakota. The three-judge panel of the 8th U.S. Circuit Court of Appeals in St. Louis also upheld a federal judge's ruling in May 2002 on a Nebraska case that required the Corps to follow its Master Manual for operating the river flows below the reservoirs, from Sioux City, IA, to St. Louis, MO.

The appeals judges said the Master Manual, which the Corps has been trying to revise for more than a dozen years, is binding on the agency because it sets priorities and directs the Corps to take certain actions in certain situations. They noted that the current Manual places priorities on river uses according to the 1944 Flood Control Act, which created the system of six mainstem dams. The appeals court judges said the reservoirs were primarily constructed to control flooding and maintain downstream navigation, and that recreation and fish and wildlife uses were secondary.

However, the ESA, designed to protect endangered wildlife, didn't exist in 1944, so the two laws have come into conflict. As a result, several conservation groups (*American Rivers, Environmental Defense, the Izaak Walton League, the National Wildlife Federation*, and a half-dozen other groups) sued the Corps to force ESA compliance and return Missouri River flows to a more seasonal ebb and flow, mimicking natural river conditions that existed before dams and channels were built. According to the FWS's BO, such flows are needed to recover habitats lost by project construction and operation. As part of their suit, the conservation groups in July asked for and received a hearing before presiding Judge Gladys Kessler in the U.S. District Court for the District of Columbia.

The government argued at the 3.5-hour hearing that lowering river flows would make it more difficult to control flooding and to allow barge traffic on the river. The two sides also argued over which priorities should dominate operations of the river — the ESA or navigation and flood control. Earlier in the year the FWS had compromised their BO by saying that the Corps could, for this year only, vary releases from upstream dams in order to keep drought-stricken downstream waters deep enough for barges throughout the summer.

Kessler's decision, returned in mid July, denied the government's request to delay lowering river water levels and issued an injunction demanding lower flows. The 70-page written decision said that the complaint of a conflict with the circuit court ruling is the government's "most troubling" argument. "This is a problem of the defendant's own making," she said. "It is incomprehensible that none of the litigants involved in the 8th Circuit litigation ... failed to bring to the attention of that court the impact of the ESA on the obligations of the [Corps] to manage the Missouri River Basin." "Unfortunate and uncomfortable as the situation may be, it does not constitute a justification for this court abdicating its responsibility under the applicable statutes," she added.

However, the Corps defied Judge Kessler's order for five days before losing a bid on July 18 to have the ruling overturned in the U.S. Appeals Court for the District of Columbia. Corps spokesman Paul Johnston said the agency dropped the water levels slightly after the Kessler decision came down, but did not fully comply with it because of the earlier Nebraska district court decision. The Corps argued before the Appeals Court that the new flow regime would trap barges on the affected river sections where water levels would be too low for navigation. They also cited the May 2002 court ruling from Nebraska that found the agency must maintain river levels during the summer to float barges. Lawyers for the conservation groups countered, saying the Nebraska ruling only applied to the 2002 navigation season and did not address the endangered species issues that were the subject of their suit.

David Hayes, an attorney for the law firm *Latham and Watkins* and former deputy secretary of Interior under the Clinton administration, who represented the conservation groups in the case, said the issue of conflicting court decisions is simply a red herring used by the Corps to justify maintaining the status quo. Conservation groups then filed a motion for contempt of court before Judge Kessler. Hayes said, "The amazing thing about the government's position is that the likelihood of a contempt order coming out of the Nebraska court is about zero, because that decision never addressed the endangered species issue," he said. "The government is attempting to hide behind a conflict that doesn't exist."

According to Corps officials ten barges floating down the river would have to be quickly moored, and without tow boats to move them as the river drops, they could break free and damage docks or other infrastructure. Larry Cieslik, Chief of the Missouri River Basin Water Management for the Corps, said environmental damage could occur if barges become stranded, break and spill their contents. "Some barges could have hazardous material that if spilled would have environmental consequences," he said in court papers.

Conservation groups argued that the Corps should be subject to monetary penalties for

failing to obey Kessler's earlier order. Central to the groups' argument is the notion that the agency has been flaunting Kessler's order with little valid reason. The fact that the Corps waited eight days after Kessler's ruling before warning barge operators and asking the Nebraska court to modify its ruling is an indication that the agency never took Kessler's ruling seriously, the groups argued. Hayes argued that the Corps should be forced to pay attorneys fees and fined each day it fails to comply with Kessler's ruling, but he said he was doubtful any monetary fine would convince the agency to comply.

Lawyers for the Department of Justice (DOJ), meanwhile, argued that the Corps has been acting in good faith toward resolving a genuine legal conflict between Kessler's ruling and the competing ruling in the Nebraska District Court, which was upheld this year in the 8th Circuit Court of Appeals. DOJ attorney Sam Rauch said the agency acted as quickly as possible to resolve the conflict between the two courts, first appealing Kessler's ruling before Kessler, then taking it to the appeals court. When the D.C. Circuit rejected the appeal, the government moved quickly to ask the Nebraska Court for a modification. "Contempt of court is a very serious charge, and it is inappropriate here," he said.

An attorney for the state of Nebraska said at the hearing that his state would fight the Corps' motion to change the earlier decision — which ruled in Nebraska's favor that the Corps must provide minimum flows for navigation — as well ask seek an injunction of its own if the Corps complies with Kessler's order.

Judge Kessler took all of this into account and then ordered that the Corps be held in contempt of court, with a $500,000 fine for every day after July 25 that they continue to ignore her court order. She said higher fines and even jail time may be considered if flows are not reduced by July 31. The government's next legal option would be to request an emergency stay from the Supreme Court's Chief Justice William Rehnquist who handles that Appeals Court.

Corps officials had announced earlier that not only would they not comply with Kessler's order, but also, for the first time, they announced that the agency would not adapt the long-term management changes required by the FWS's 2000 BO to ensure the survival of the three endangered species. In that document, the FWS said natural conditions, including a spring rise and low summer flows, are needed to create habitat for these species, including sandbars for the birds to nest in the summer and forage habitat for young sturgeon. The BO said the Corps must implement those changes by 2003 or risk being found in violation of the ESA. But while the Corps took steps to rewrite the Master Manual, it repeatedly delayed making a final decision, saying it would instead enter consultations with FWS biologists over possible alternatives to the BO.

The Corps has now said that it is again entering into discussions with the FWS, but this time, the discussions will be in the form of a "formal consultation" beginning July 21 with a legally binding end date 135 days later. By the end of discussions this fall the agencies will have a new BO on how to best protect the species, the Corps says. But while the documents have not yet been drafted, the Corps has ruled out the

possibility that the recommendations will include a spring rise and low summer flows. "The Corps biological assessment does not contemplate the need to employ a spring rise or lower summer release from the Gavins Point Dam to provide for the recovery of the federally protected Missouri River species," Corps officials said.

While the Corps characterized the decision as a cooperative effort between the agencies, FWS biologists and field staff working with endangered species in the Missouri River region said the decision came out of Washington D.C., and some were not aware of it until after the fact. Nor did any cite new evidence indicating that the earlier evidence calling for revised management is no longer valid. Corps officials, however, said there have been new studies since the 2000 BO indicating that there might be other ways to save the species and still provide for navigation and flood control on the river. "We're working our way through a plan that meets human needs and protect the species," they said.

According to David P. Smith, FWS deputy assistant secretary for fish, wildlife and parks, his agency has not reversed its position on what is required to recover the endangered species, but rather it is giving the Corps a chance to make new proposals for achieving species recovery. "Right now, its best to say the FWS hasn't taken any options off the table," Smith said. "We will be looking closely at the Corps plan. What we're hoping to see in a new biological assessment from the Corps is some new management and project direction that would result in the creation of habitat for the three species."

One option, he said, is to have a fall rise, which could build up high sandbars that could then provide nesting habitat for the birds in the summer without requiring flows too low to accommodate barge traffic. For the pallid sturgeon, he said, the Corps could build habitat by creating low-flow areas where the fish can feed. "There has been a natural spring rise every year on the lower river, and you have little recruitment for the pallid sturgeon," he said. "The missing element is lack of habitat, so we need to do more shallow water habitat development."

To help with these efforts, the Bush administration announced that it is adding $42 million to the budget for the Missouri River for next year for the creation of habitat, assessment of species populations and improvment of hatcheries. Beyond the initial $42 million, Corps officials said they will push to spend nearly $200 million over the next four years to improve habitat along the river for endangered wildlife.

They likened the pricey new plan to the government's recent commitment to spend billions of dollars to fix the Florida Everglades. "When you look at the Everglades, you're talking about two counties in Florida," said Rose Hargrave, an official in the Corps' Omaha District. "When you look at the Missouri River, you're talking about 567,000 square miles, eight states and 28 Indian tribes." Despite the heady scope of the new plan, environmental advocates reacted cautiously given the Corps' decision to ignore the earlier court order. Corps' officials first

mentioned the new restoration plan in a late night news release included in papers filed with the U.S. Circuit Court of Appeals in Washington seeking to delay Kessler's injunction.

Hayes said the administration is just "trying to buy support for its untenable position. "Without changing the flows, all you can do is cosmetic stuff," he said. "It doesn't address the root problem. The 500 studies cited in the BO all pointed to the need to change the flow regime. There is no mystery about what needs to be done to restore the river and these are not dramatic changes that are required. The Corps and the administration are defiantly resistant to making these changes." "Despite Kessler's rebuke and the strong science backed by the *National Academy of Sciences*, they're thumbing their noses at it. It's a remarkably arrogant position. It's 'science be damned.' It's 'science and species be dammed,'" Hayes said. A spokesman for the conservation group *American Rivers* called the move "too little, too late." "The Corps has no intention of changing the Master Manual or doing anything beneficial for the river," said spokesman, Chad Smith. "All of these actions are delay tactics ad nauseam."

Meanwhile, the person selected by President Bush to lead the Corps has committed to rewriting the Master Manual. In a letter sent to Senate Minority Leader Tom Daschle (D/SD) as part of his confirmation process, Bush's nominee to be assistant secretary of the Army for civil works, John Woodley, said the Corps will release a new Master Manual within six months under his leadership. Politicians from three upstream states — North Dakota, South Dakota and Montana — have been eagerly awaiting the new Master Manual, which they hope will provide more water for their reservoirs in the summer. Downstream states, including Missouri and Nebraska, oppose these changes. Daschle said the Master Manual revision must make genuine changes and not simply maintain the status quo.

Sources: Peter Shinkle, *St. Louis Post-Dispatch*, 6/4/03*;* Chet Brokaw, *Associated Press* and *Yankton Daily Press & Dakotan*, 6/5/03; *Knight Ridder Newspapers* and *The Columbia Daily Tribune*, 7/19/03; Libby Quaid, *Associated Press*, 7/4 and 7/22/03; Bill Lambrecht, *St. Louis Post-Dispatch*, 7/17/03; and Damon Franz, *Greenwire*, 7/15, 7/18; 7/21 and 7/23/03

The Missouri River: Past and Future Grain Traffic

C. Phillip Baumel, Professor of Economics at Iowa State University and Jerry Van Der Kamp, Executive Vice President and CEO, *AGRI-Industries* put Missouri River navigation in perspective in their July 2003 report, adding ammunition to arguments of conservation groups that navigation needs should not dictate how Missouri River waters are managed. The following was taken from their report.

The River and Harbor Act of 1945 authorized the Army Corps of Engineers to provide a 9-foot deep, 735-mile navigation channel on the Missouri River from Sioux City, IA to its mouth just north of St. Louis, MO. Construction of the navigation channel was completed in 1981.

The Corps projected Missouri River commercial barge traffic (CBT) to be 1.1 million tons in 1960 and gradually increase to 5 million tons by 1980. In 1960, actual CBT was 1.4 million tons, of which 79% was grain — mostly wheat. Actual CBT exceeded projected tonnage in the early 1960s, leveled off during the late 1960s, peaked at 3.3 million tons in 1977, and has been declining ever since. By 2000, CBT had fallen to 1.3 million tons, 61% below the peak tonnage of 3.3 million tons in 1977 and 74% below the projected 5.0 million tons.

The report found that the total CBT in 2000 represented only 15.0% of total Missouri River barge traffic. Noncommercial traffic — sand, gravel and waterway improvement materials — accounted for a surprising 85% of total traffic. Total grain shipments on the Missouri River fell 8l% from the peak of 1.95 million tons in 1964 to 0.37 million tons in 2000. Grain represented almost 77% of total Missouri River CBT in 1964, but only 28% in 2000.

Wheat tonnage declined even faster than total grain tonnage, falling almost 99% from 1.77 million tons in 1964 to 21,000 tons in 2000. A major reason for the development of the 9-foot navigation channel on the Missouri River was the expectation of hauling large quantities of wheat to New Orleans for export. By 2000, the Missouri River was essentially out of the wheat hauling business.

Corn shipments peaked in 1974 at 313,000 tons and fell to 198,000 tons in 2000, a decline of 36%. Soybean shipments peaked in 1983 at 486,000 tons, but then declined 69% to 153,000 tons in 2000.

Some reasons cited for the decline in the use of Missouri River barges include:

• Increased railroad competition - Export rail markets continue to pull bushels of corn and soybeans away from Missouri River barges.

• The growth in shuttle train loading elevators on and near the Missouri River has been dramatic. In September 2002, there were 17 shuttle train loading elevators located within 45-miles of the Missouri River between Jefferson, SD and Atchison, KS. Half of these elevators are located on the Missouri River or in towns bordering the Missouri River. At least four new shuttle train loading elevators are expected to be operating within three years.

• The cost of barging on the Missouri River is about 55% higher than on the Upper Mississippi River. The reasons for the higher costs are the small number of barges per tow on the Missouri, long distances to the mouth of the Missouri River and high fuel consumption of Missouri River towboats.

• Steady or Declining Export Demand - Most grain moving by barge on the Missouri River is destined for export through New Orleans. U.S. corn and wheat exports peaked in 1980 and have been declining since then. U.S. soybean exports declined sharply during the 1980s and early 1990s, recovered in 2001, and now exceed 1980 exports by a small margin.

• Local ethanol production, wet corn milling at Blair, NE, and soybean processing at Council Bluffs, IA, are providing additional processing markets to grain producers located within 45-miles of the Missouri River. This large number of processing plants has added marketing opportunities to grain farmers, particularly for the growing number of grain producers who own or hire semi trucks to deliver grain to these new markets.

In conclusion the report says that phenomenal changes have taken place in the grain distribution system over the past three decades to reduce handling, transportation and infrastructure costs. This rationalization of the grain elevator, railroad and rural road systems has enabled the U.S. to maintain and improve its competitiveness

in world markets. Thus far, only the inland waterway has grown in size. Agriculture may have to ultimately make choices of whether it can and should support commercial navigation on all of the tributaries to the Mississippi River system, much like the railroads have done with their branch lines, like country elevators have done with their branch elevators and like local governments are doing on their low volume roads. Agriculture may discover that it can only support the core river system that is of the greatest importance to the greatest number of users. An open public debate is needed to evaluate alternative navigation investment strategies on the Missouri River and other low-volume rivers. Farmers need to be involved in these debates.

Source: C. Phillip Baumel, Professor of Economics, Iowa State University, Jerry Van Der Kamp, Executive Vice-President and CEO, AGRI-Industries. July 2003. *Past and Future Grain Traffic on the Missouri River*. Institute for Agriculture and Trade Policy, 2105 First Avenue South, Minneapolis, Minnesota 55404 USA, 612-870-0453, fax: 612-870-4846, email: iatp@iatp.org, url: www.iatp.org

The Missouri River: Imagine the River Restored

Bruce Babbitt, Interior Secretary under the Clinton administration, former Arizona Attorney General, and partner of the law firm, *Lathan & Watkins LLP*, who is representing the conservation groups that are suing the Corps over Missouri River management, offered the following perspective as an alternate future for the Missouri River:

"Two hundred years ago, Lewis and Clark cast off from St. Louis, paddling up the Missouri, across the continent and into history. The river they traveled was a shallow, meandering, constantly shifting stream running among sandbars, islands and great canopy forests.

'Today, that river exists only in memory. The U.S. Army Corps of Engineers has destroyed the natural river and replaced it with a barge channel banked with hundreds of miles of levees.

'Now, in the bicentennial year of Lewis and Clark's great journey, a federal judge has opened a window onto the past. Last week, she ordered the corps to restore a more natural summer flow, creating conditions that will help the recovery of two threatened and

Lower Missouri River — The highly engineered river of the Corps of Engineers.

endangered bird species, the least tern and the piping plover. The natural flows will also help a unique endangered Missouri River fish called the pallid sturgeon. The order is just a small victory for the river, for it only affects flows in late summer. But it could nonetheless mark the beginning of something truly visionary.

'It is now time to acknowledge that the entire project of transforming the lower Missouri into a barge channel was a mistake. It was a bad bargain that destroyed the river of Lewis and Clark for economic benefits that have never materialized.

'The time has come to undo that mistake and to restore the lower Missouri as a free running river. As a great new national park extending across the state from St. Louis to Kansas City — as the Missouri River National Park.

"The Big Muddy National Wildlife Refuge near Columbia is a tiny preview of what a restored river could be. In the 1993 flood, the lower Missouri broke through levees and spread into the natural flood plain all along the river. But in this small area of just 5,000 acres, we persuaded the Congress to allow the Interior Department to purchase and retire the ruined farmlands and let natural processes restore the land. Today, the thickets of cottonwoods and willows are shoulder high, teeming with birds and wildlife, on the way to becoming a luxuriant canopy forest shadowing sandbars and quiet backwaters.

'A Missouri River National Park would bring real economic benefits to the small towns along the river. A national park would draw millions of visitors, bringing a lot more income than what remains of the barge industry — a mere seven tugboats. Removing the levees and purchasing the farms in the flood plain would require a substantial investment. But in the long run, it would cost less than what the Corps spends year after year to repair and replace the levees. And the purchase and retirement of soybean fields would be offset by reductions in federal surplus crop subsidies.

'In the litigation before U.S. District Judge Gladys Kessler, an expert testified that tourism along the Missouri is presently generating 4 times more economic benefit than the remaining barge traffic. A river restored, the centerpiece of a unique national park, drawing Americans from all walks of life to explore their history and heritage, goes considerably beyond the issues presented in court.

'But it is now time to leave the courtroom and step into the realm of imagination — to imagine what once was, and then to move into the future with a plan for restoring the entire river."

Unchannelized Missouri River near Yankton, SD — A vision for a restored river.

Bruce Babbitt was a strong advocate of flood plain and river restoration during his tenure as Interior Secretary.

Source: Bruce Babbitt, *Latham & Watkins LLP*, Washington, D.C., 7/17/03

Larval Pallid Sturgeon Found in the Missouri River in Montana

After a couple of decades of watching wild pallid sturgeon populations dwindle, biologists have discovered the first evidence of natural reproduction of the endangered species in the Upper Missouri River. The discovery last fall of two tiny pallid sturgeon larvae provides evidence that pallid sturgeon spawned in 2002.

The pair of larvae were sampled in early September near the headwaters of Lake Sakakawea, downstream of the confluence of the Yellowstone and Missouri rivers. Because of the pallid's close resemblence to the abundant shovelnose sturgeon, the larvae were sent to an expert for conclusive identification and the positive results were received in March.

Biologist Carrying a Large Pallid Sturgeon.

This is the first evidence in the past 40 years that natural spawning produced pallid larvae in the Upper Missouri or Yellowstone rivers, and biologists are happy to find the evidence. However, they believe flows in the Missouri River (in Montana and North Dakota) are not consistently adequate to trigger spawning and that any larvae that are produced probably drift downstream into Lake Sakakawea, a reservoir environment in which the larvae cannot survive.

Larvae tend to drift downstream for at least a week before finding a niche where they'll stop to grow. Without natural reproduction, the species' recovery depends on a hatchery program that has only slowed the sturgeon's slide toward extirpation. Since its listing, biologists have documented the continuing decline of the species. The wild population below Fort Peck Dam and the lower Yellowstone River is estimated at less than 166 fish, while fewer than 25 fish exist in the Missouri River upstream of Fort Peck Reservoir.

So few pallid sturgeon remain in Montana that biologists say nearly every adult is known to them. The pallid, an armor-plated, bewhiskered throwback to the Cretaceous Period (200 million years ago), can grow to 80 pounds and more than 5 feet in length. The fish lives 40 or more years and doesn't begin to reproduce until around 15 years of age. It evolved in the once warm, muddy spring runoff of the Missouri and Yellowstone rivers as their currents churned across the prairies. Fort Peck Dam, constructed in the 1930's, blocked the Missouri's channel and replaced its dynamic, turbid flow with consistent cool, clear water. Below Fort Peck, just as below other dams on the Missouri and Mississippi rivers, pallid populations have dwindled over the past half-century with the loss of spawning and rearing habitat and conditions.

Research being conducted by Pat Braaten, a fisheries biologist with the USGS Biological Resources Division and Dave Fuller, a Montana Fish, Wildlife and Parks technician, whose crew found the young pallids, focuses on habitat and how habitat changes might improve pallid sturgeon spawning success.

Working in cooperation with the U.S. Army Corps of Engineers that controls the flows from Fort Peck Dam, the researchers are collecting baseline data in the Missouri River before a planned release of warm water over Fort Peck Dam's spillway occurs. This experimental release will mimic the river's natural seasonal flow. Fish movement will be measured in response to the increased flows, but the release cannot take place until Fort Peck Reservoir levels reach the spillway. Researchers hope the water flow will cue the pallid sturgeon to spawn and help the larvae to drift into safe, natural habitats where they might grow to reproductive age.

The pallid sturgeon is the premier indicator species for the Missouri River, one researcher said. With declines observable in blue suckers, paddlefish, sauger and ling populations, what we learn about recovering the pallid sturgeon may help us conserve these other species as well.

Source: Andrew McKean, Information Officer, *Montana Fish, Wildlife & Parks*, 5/9/03

Plans for Arkansas River Pipeline

Colorado Springs plans to build a 45-mile, $900 million water pipeline, the first in a wave of large water projects that thirsty cities are proposing across the state. The still-unnamed pipeline will draw water from the Arkansas River below Pueblo Reservoir and deliver it north to the city by 2007. When completed, the pipeline will expand Colorado Springs' water supplies by 75%, delivering enough to serve up to 900,000 people by 2040 — more than twice the city's current size, according to *Colorado Springs Utilities*.

Denver, Greeley, Fort Collins, Broomfield, Loveland and other cities — still reeling from the drought — are also launching efforts this summer to expand storage reservoirs and add pipelines. Because water projects typically take years to develop, many have been on the drawing board for decades. Whether these projects are completed depends on local support and the backing of environmentalists.

The Colorado Springs pipeline is one of several Front Range projects identified as "smart" in a recent report by the *Sustainable Water Caucus*, a partnership between *Trout Unlimited* and the *Colorado Environmental Coalition*. "These projects all have the potential to be done in a way that protects the environment," said Melinda Kassen, an attorney and lobbyist for *Trout Unlimited*. "We would like this project to work, but we want it to work in a way that protects the ongoing (river) restoration work there and that protects the fishery (below the dam at Pueblo Reservoir)."

The pipeline also is likely to trigger a fight among anti-growth forces in the region, something Colorado Springs says it is prepared to face. "This will virtually double our water supply," said Jerry Heimlicher, a newly elected city councilman. "And that's making this project a new rallying cry for the anti-growth movement. But 50% of our growth is coming from natural births. It's not people coming in from outside. And we have to plan for that because it's going to happen."

To stave off endless court battles, Colorado Springs also has to make peace with the city of Pueblo, perhaps the pipeline's harshest critic. Pueblo is prepared to fight the plan

because it fears the pipeline will take too much water from the Arkansas River, especially along Pueblo's river walk and planned kayaking course, Pueblo city officials said. Colorado Springs has the right to the water, but the critical issue is where it is taken from the river. Colorado Springs has proposed taking it from just below the Pueblo Reservoir Dam. But Pueblo wants the water taken out below the city itself, preserving through-town flows.

So fiery is the dialogue that the city councils of the two cities began meeting face to face in May, an act of water diplomacy rarely witnessed in the Arkansas Valley. "It would be a travesty if they're allowed to dry up this historical river," said Tom Florczak, an assistant city attorney in Pueblo. "We've said we'll let you take 95% of the water you want, but leave us some," Florczak said. "We're willing to compromise, but we don't want them to destroy the entire flow of the river." Heimlicher said the proposed pipeline needs to be built in a way that both cities can tolerate.

Large enough for the average fourth-grader to walk through, the pipeline will eventually deliver 68 million gallons of water a day to Colorado Springs and 10 million gallons a day to Fountain. In addition to the pipeline, the project will include two new reservoirs in El Paso County and several pump stations. The pipeline project will be up for a series of public reviews this summer, according to Gary Bostrom, regional projects manager for *Colorado Springs Utilities*. The utility hopes to obtain permits and begin construction in 2005, with the first deliveries scheduled for 2007, Bostrom said.

Source: Jerd Smith, *Rocky Mountain News*, 5/27/03

Estrogen Compounds Effecting Fish Fertility

Western Washington scientists have found that synthetic estrogen — a common ingredient in oral contraceptives — can drastically reduce the fertility of male rainbow trout. The man-made compounds are showing up in waterways around the nation — pumped into rivers and lakes with water from sewage-treatment plants. "It is disturbing in the extreme," said Kaitlin Lovell, salmon-policy coordinator for *Trout Unlimited* in Portland. The research by scientists at the *Battelle Marine Sciences Laboratory* in Sequim, WA is unique for its focus on trout, which is related to salmon, and for looking at reproductive effects on adult fish rather than juveniles.

How fish are affected by such chemicals in the wild remains unclear. "It's something we're concerned about," said Irvin Schultz, a senior research scientist at the lab. In the experiment, adult trout in caged pens were exposed to ethynylestradiol, a synthetic estrogen. After two months of exposure, the fish were spawned with a healthy female, and researchers discovered that the exposed trout were half as fertile as fish kept in clean water.

The research by the government-funded lab is outlined in the June issue of the journal *Environmental Toxicology and Chemistry*. The findings are likely to fuel concerns about the environmental effects of chemicals that aren't being filtered out by sewage plants, including pharmaceuticals and pesticides that can mimic hormones.

In frogs, river otters and fish, scientists are "finding the presence of female hormones making the male species less male," said Doug Myers, wetlands and habitat specialist for the *Puget Sound Action Team*, the government agency coordinating restoration of the Sound. There are no standards for how much synthetic estrogen and other hormones can be released in sewage and wastewater, and treatment plants generally do not monitor for it. The USEPA is studying which of these compounds have harmful effects. Then the next step will be testing for their presence in waste water. New regulations could follow.

Although trout don't have the ability to rid themselves of the synthetic hormones, Schultz doesn't think it poses a serious threat to people eating the fish because the levels in the environment are low. There are some concerns about wastewater that is being recycled back into the environment, particularly in desert areas, where it might mix with groundwater that could be used for drinking. New sewage-treatment facilities are looking into special membranes that will help pull some of these contaminants out, said John Smyth, an official with King County WA's technology-assessment program.

The researchers in Sequim tested the effects of synthetic estrogen at three different levels. The scientists were surprised that even the lowest level — 80 times lower than levels measured in the wild — had an effect on fertility. The scientists would like to do more tests to identify the smallest concentrations that can harm fish. They were unable to figure out how the estrogen was causing the reduction in fertility. It appears not to affect the swimming ability of sperm.

With so many unanswered questions about what compounds are getting into the environment, their effects and how to get them out of the wastewater, environmentalists and scientists are concerned.

Source: Lisa Stiffler, *Seattle Post-Intelligencer*, 6/4/03

Popular Pesticide Faulted for Frogs' Sexual Abnormalities

Scientists from the USEPA say there is "sufficient evidence" to conclude that the country's most widely used pesticide, atrazine, causes sexual abnormality in frogs. They are recommending that the agency conduct more research to understand atrazine's mechanisms and its broader

impact on frog populations. The scientists noted that there had been six studies involving three species of frogs that show a variety of defects, including frogs with both multiple testes and multiple ovaries, when exposed to the chemical. The scientists cautioned that the results from studies of atrazine had not been consistent and that it was not clear at what levels of exposure those effects occurred or how different frog species were affected.

"Over several studies and environmental conditions and species, atrazine exposure did appear to be having some impact on gonadal effects," Tom Steeger, a scientist with the EPA's pesticide office said. However, scientists hired by *Syngenta*, a major manufacturer of atrazine, said they drew different conclusions from available research. "We see no correlation in the adverse gonadal effects and the introduction and use of atrazine," Glen Van der Kraak, a professor at the University of Guelph in Winnipeg, Manitoba, said. But USEPA scientists said many of the industry-sponsored studies had a variety of problems,

including testing conditions that led to high mortality in their frogs. Later this year, an independent scientific panel, convened to assess atrazine's impact on amphibians, will make recommendations to the USEPA on how to proceed.

Atrazine and its byproducts are widely found at low levels in U.S. waters, especially after the planting season, when rains wash the chemical out of fields. It is popular with farmers because it is effective and relatively cheap. Atrazine has been banned in seven European countries. Some laboratory studies have linked atrazine to cancer in rats, and some epidemiological studies show a correlation between exposure and cancer in humans.

The USEPA review had been moving toward renewing the agency's approval to use atrazine. But last year, a scientist at the University of California published two papers suggesting that low levels of exposure to atrazine, as low as one part per 10 billion in the water, could cause tadpoles to develop into frogs with both male and female sexual organs. The studies, led by Tyrone B. Hayes, were published in April 2002 in the *Proceedings of the National Academy of Science* and in October 2002 in *Nature* magazine. Dr. Hayes had originally been hired by a consulting concern, *Ecorisk*, to conduct studies on atrazine on behalf of a company that is now *Syngenta*. The studies ignited a scientific and political debate, and led the environmental agency to convene a panel to examine atrazine and its effects on amphibians.

Initially, *Syngenta* said it had been unable to replicate the results of Dr. Hayes's work in company-sponsored studies. But since then, one of the company studies was published in a journal, *Environmental Toxicology and Chemistry*, and its primary author, Dr. James Carr of Texas Tech University, said the study did result in some hermaphrodite frogs, though at higher exposure levels than in Dr. Hayes's studies. Dr. Hayes and other Berkeley faculty members present at meetings about his work say that when Dr. Hayes presented his findings to a panel of university scientists formed by E*corisk*, some of the panel members tried to delay him from publicizing his initial findings. Other scientists on the *Ecorisk* panel say any delay was intended to test the validity of the data.

Dr. Hayes left the panel in protest in November 2000, stating in his resignation letter that otherwise "it will appear to my colleagues that I have been part of a plan to bury important data." *Syngenta* has submitted Dr. Hayes's initial work in an interim report to the USEPA, but the company has not submitted a final report on his research to the agency. The two papers Dr. Hayes and his co-authors published in 2002 were based on research done without industry financing. Tim Pastoor, who is in charge of global risk assessment for *Syngenta*, said, "There were absolutely no constraints on any of the panel members on anything they have found."

But the minutes from a January 2001 *Ecorisk* panel show Tim Gross, a University of Florida professor who is also part of the *Ecorisk* panel, telling Dr. Hayes that the "results from the contracts are jointly owned" by the company and the scientist. "Therefore, publication is upon mutual consent," Dr. Gross said in a letter submitted at the meeting. He said Dr. Hayes "should be reminded of this, as well as the confidentiality of these results." The minutes were submitted to the environmental agency and obtained by the *Natural Resources News Service* through a Freedom of Information request. But, Dr. Hayes spent several hours presenting his research to the panel.

The atrazine discussion is a high-profile inquiry into the relatively new scientific area of endocrine disruptors, chemicals that at minute traces can significantly affect health by interfering with the hormones that regulate biological activity. Several studies from the last decade linked the trace pollutants to declining sperm counts, infertility and various forms of cancer in humans, as well as to genital malformation in wildlife.

Source: Jennifer Lee, *New York Times*, 6/19/03

Farm Chemicals Linked to Low Male Fertility

Three chemicals (alachlor, atrazine and diazinon) widely used on corn and soybean crops have been implicated in low fertility among central Missouri men, according to a University of Missouri-Columbia (UM-C) study released in June. Study author, Shanna Swan, found, for example, that men with high levels of alachlor byproducts in their urine were 30 times more likely to have poor-quality semen than men with low levels.

Swan is plowing new ground with this study, and her results are extraordinary, said J. Peterson Myers, a biologist who co-wrote *Our Stolen Future,* an investigation of endocrine-disrupting chemicals. "Epidemiologists get very excited about a risk factor of two or three. She's got a risk factor for alachlor of 30. That is extremely significant statistically. The risk factors for atrazine and diazinon are also off the charts."

Swan, a UM-C research professor of family and community medicine, contends that the federal government should reduce the level of the chemicals it allows in the nation's drinking water. Swan's findings are based on urine samples provided by men whose pregnant partners sought prenatal care at university clinics in Columbia.

Which raises an obvious question: If the men were able to impregnate a partner, where's the problem? "We're looking at a drift of the population, a tendency toward poor semen quality," Swan said. "There could be many more men than there should be who are infertile." Men with poor semen quality generally take longer to impregnate their partners and have other problems as well, such as higher rates of testicular cancer, she said.

Swan's study was published in the online edition of *Environmental Health Perspectives*, the scientific journal of the *National Institute of Environmental Health Sciences*. The unit is an arm of the *National Institutes of Health*. Swan's study is the first to look for an association between sperm health and farm chemicals currently in use, Myers said.

The compounds can be ingested, inhaled or absorbed through the skin, but Swan suspects her subjects drank theirs. She hopes next to test the drinking water of the men she studied. They drink from a variety of sources — wells and water systems in mid-Missouri cities. "The USGS has shown that these three pesticides are among the five most commonly found in drinking water,"

Swan said. Water purification plants can reduce the amount of such chemicals by adding activated carbon.

The USEPA requires that average atrazine levels — based on quarterly measurements — not exceed 3 parts per billion. Water treatment systems generally add activated carbon when the atrazine level hits 1.5 parts per billion. Atrazine and other agricultural chemicals tend to peak in runoff after spring rains, said John Reddy, manager of the Kansas City water supply. This spring, he said, the atrazine level once reached 14 parts per billion before treatment and 3.6 parts per billion after treatment.

"In the last month we've been getting atrazine, so we're putting a whole lot more carbon on," he said. Swan thinks that her findings argue for more stringent federal drinking-water standards. "Regulators should be reevaluating permissible levels of these pesticides in our drinking water," Swan said. "As long as we're seeing effects at permissible levels, they're too high. These are not small effects. This is affecting a lot of people."

The USEPA has taken one step to reduce exposures. By this August, diazinon should be off the market in the U.S., Swan said. Even so, she noted, "It'll remain in our water for some time, perhaps a couple years." Next, Swan intends to replicate this latest study, by looking not only at men from mid-Missouri but men from Iowa as well. She will apply for funds to test sperm samples from men with high pesticide levels to look for DNA damage. That, she hopes, may provide an explanation of just how pesticides may be causing reproductive havoc.

Source: Karen Uhlenhuth, *The Kansas City Star*, 6/18/03

Missouri and Arkansas Pollution Concerns

In Missouri the *Coalition for the Environment* intends to file a lawsuit against the U.S. EPA for its "long-standing failure" to protect the State's waters for swimming and other uses. The coalition said 90% of Missouri's lakes, rivers and creeks are not required to be clean enough for swimming or other activities. Although the federal Clean Water Act (CWA) of 1972 requires states to keep the waters clean enough for swimming, Missouri did not adopt standards to limit pollutants, the Coalition said. The Coalition said further that although the EPA notified the Missouri Department of Natural Resources (DNR) that it needed to address the state's water quality standards, the changes were never made. The EPA is required to set complaint standards for states that do not do so on their own, according to the Coalition.

Scott Totten, director of the Missouri DNR's water protection and soil conservation division, said that the state is working on meeting EPA's requirements, but the process is taking longer than expected. He said in September 2000, the EPA commented on nine years worth of the state's reviews, and gave it 90 days to develop a regulation. "We told the EPA they can't give us nine years worth of work and expect us to do it in 90 days," Totten said. "We are trying to do it over a three-year period."

"Missouri has 20,000 miles of classified streams, and 5,000 miles are designated for protection for swimming," Totten said. "That leaves 15,000 miles we would have to protect for swimming." Totten said there is also controversy about how much water has to be in a stream before it can be designated for recreational purposes.

Meanwhile, in Arkansas the EPA in mid June announced plans to add 16 lakes and parts of 11 rivers, streams and bayous to the State's list of polluted waters. Placing the waters on the list means the state will have to begin enforcing more-stringent environmental regulations to clean up the pollution in each.

As required by the CWA, the state Department of Environmental Quality last year identified 60 polluted lakes, rivers and streams. The EPA accepted that list but proposed adding 29 others. After state authorities protested, the agency agreed not to put the Kings and Illinois rivers on the list. Among additions to the list are: Lakes Winona, Sylvia, Wilhelmina, Nimrod, Horseshoe, Old Town and parts of Bayou DeView, the Cache River, Village Creek, Overflow Creek and the Ouachita River oxbow lakes below Camden. In six of the lakes, EPA officials were concerned about the amount of mercury found in fish. One of those lakes, Lake Winona, is the source of Little Rock's drinking water.

Federal environmental regulators contend that many of east Arkansas' streams contain too much dirt, while rivers flowing through Northwest Arkansas are contaminated by sewage and poultry waste. State environmental regulators vehemently disagree about the extent of pollution in the 27 lakes, rivers and streams. Ultimately, though, it's EPA's designation to make. The federal agency's decision puts an end to months of negotiations between federal environmental regulators and their state counterparts who differed over the scientific criteria used to define the levels of pollution.

The CWA requires that states identify pollution-plagued water bodies and develop pollution limits for each. For years many states, including Arkansas, ignored the federal provision, and federal environmental regulators did little to enforce it. Across the nation, environmental groups successfully sued EPA, prompting the agency to take a tougher look at the lists states submitted.

EPA had proposed adding the Kings and Illinois rivers to the list, commonly called the 303 (d) list. Federal regulators contended that both are polluted with phosphorus, which is found in poultry waste and treated sewage. Richard Greene, EPA Region 6 administrator, said federal regulators were willing to omit the two rivers from the list because of the "scarcity" of information regarding phosphorus pollution in Arkansas. "We do know, though, that they (the two rivers) are very close to exceeding [phosphorus] limits, but they're not quite there," he said. Greene said federal environmental regulators plan to collect more data from the two rivers over the summer and may reevaluate their decision regarding both next year.

On the surface, omitting the two rivers from the list may seem like a victory for the poultry industry and the Northwest cities that discharge treated wastewater into the rivers. The final list, however, includes Spring and Osage creeks, which both feed the two rivers. If restrictions are placed on the tributaries, ultimately, the pollution load will be decreased on the two rivers. Martin Maner, the state water division chief said, "Keep in mind that we don't have [numeric] criteria for phosphorus." "So how are we supposed to meet a level that doesn't exist?" Excessive phosphorus flowing out of Arkansas into Oklahoma and Missouri has sparked a contentious environmental debate among the states.

Last year, Oklahoma implemented phosphorus limits for its six scenic rivers. Four of those rivers, including the Illinois, originate in Arkansas. Arkansas politicians, state environmental regulators and city officials protested, claiming that stricter

limits would cripple the poultry industry and force cities to spend millions of dollars upgrading sewage plants. Since then, Oklahoma and Arkansas officials have been trying to settle their differences on how to deal with phosphorus that is polluting both states.

Sources: *St. Louis Business Journal*, 7/7/03; and Kim Mcguire, *Arkansas Democrat-Gazette*, 6/10/03

Tyson Pleads Guilty in Missouri Pollution Case

Tyson Foods Inc., the world's largest meat producer, pleaded guilty in late June to 20 felony violations of the federal Clean Water Act and agreed to pay $7.5 million in criminal and civil fines. The fines are the largest environmental penalties in the history of the Western District of Missouri.

Les Baledge, *Tyson's* executive vice president and general counsel, entered the plea on behalf of the Springdale, AR company before Senior U.S. District Judge Howard Sachs. Under an agreement with the U.S. attorney's office in Kansas City and the environmental crimes section of the U.S. Justice Department, *Tyson* admitted that it illegally discharged untreated wastewater from its poultry processing plant near Sedalia, Mo., into a tributary of the Lamine River. The company's Sedalia plant processes about 1 million chickens a week and generates nearly 100,000 gallons of wastewater a day.

The USEPA began investigating the discharges in late 1997 after receiving a complaint that *Tyson* was bypassing its wastewater treatment plant and discharging untreated wastewater through storm drains into a neighboring stream, which flows into the Lamine River. In 1999, federal officials served two criminal search warrants at the plant. Even after the search warrants were executed, *Tyson* continued its illegal conduct, Justice Department and environmental officials said. Having done this work for nearly 20 years, I don't recall any case where violations continued after the execution of two search warrants," said Jeremy Korzenik, a senior trial attorney in the Justice Department's environmental crimes section. "That's stunning."

In addition to its plea in federal court in Kansas City, *Tyson* also entered a consent judgment in Pettis County with the Missouri attorney general's office. The judgment resolved state charges of environmental violations related to the same discharges. Under the federal and state pleadings, *Tyson* agreed to pay $5.5 million to the federal government, $1 million to the Pettis County School Fund and $1 million to the Missouri Natural Resources Protection Fund to help remedy the damage caused by the illegal discharges.

In addition, *Tyson* was placed on probation for three years. The terms of its probation require it to:

- Hire an outside consultant to perform an environmental audit and provide the results to state and federal authorities;
- Institute an "enhanced environmental management system" at the Sedalia complex; and
- Comply with all environmental laws and orders applicable to the complex.

In a written statement, *Tyson* said it "never intentionally sought to bypass its wastewater treatment system." The company said that since 2001, when most of the incidents occurred, it had invested in improvements designed to enhance its storm-water handling capabilities. But government officials painted a different picture, outlining a continuing pattern of environmental violations at the 1,000-acre Sedalia complex. *Tyson's* characterizations of its violations as mere leaks and spills "trivialize a decade-long record of permit violations that demonstrate indifference to environmental regulations and recalcitrance to civil enforcement efforts," prosecutors wrote in a June 20 letter to Sachs, who made the letter part of the public record. Sachs, while accepting *Tyson's* plea, expressed concern that the sentence wasn't severe enough, noting that the 20 felony violations carried maximum monetary penalties of $500,000 each, or a total of $10 million.

"These amounts are not very impressive, considering the size of the company and its public history," Sachs said, referring to the fines *Tyson* agreed to pay. *Tyson* posted 2002 sales of $23.4 billion. Its net income was $383 million. Sachs said he would accept the sentence only because additional fines "wouldn't greatly change the impact of the prosecution" and because of "the risk of extending the controversy" for months or years. "It has gone on too long already," he said.

Although *Tyson* has been a target of civil actions by both the government and private litigants for environmental violations, its plea in June marked the first time it had been convicted of criminal violations of environmental laws. "As a first offender, at least as far as the criminal law, the company is entitled to some consideration," Sachs said.

Korzenik said that *Tyson* continued to discharge untreated wastewater through its storm drains, despite company assurances that the discharges would stop, and even after numerous warnings, administrative orders, two state court injunctions and the criminal search warrants. "There was a pattern of conduct of violation after violation after administrative and civil remedies completely failed," Korzenik said at a news conference after the court hearing. "That required that we bring criminal action against the company."

Assistant U.S. Attorney J. Daniel Stewart, who prosecuted the case with Korzenik, said that *Tyson's* was the first environmental prosecution against a corporation in the Western District in several years. Stewart noted that most environmental prosecutions are brought against individuals, rather than corporations, and often result in jail time. In the *Tyson* case, however, responsibility was too diffuse to warrant singling out any individual wrongdoers, Stewart said.

Source: Dan Margolies, *The Kansas City Star*, 6/26/03; and Bill Medley, *The Sedalia Democrat*, 6/26/03

A Greener, Wetter Earth

The Earth is becoming a greener and wetter place to live, according to NASA-funded researchers at the University of Montana (UM) who have studied global climate changes for the past two decades. The work of UM-based scientists Ramakrishna Nemani and Steve Running is highlighted in June 6 issue of *Science* magazine. The article is titled "*Climate-Driven Increases in Global Terrestrial Net Primary Production from 1982 to 1999*". Their data, coming from satellites and worldwide local weather records, was part of a collaboration with scientists at the Scripps Institution of Oceanography, the University of California-San Diego, Boston University and NASA's Goddard Space Flight Center in MD.

"We have been working in this field almost 20 years, and this study brings together everything we have done in that time — it really is a summary of our work," said Nemani, the lead researcher for the project. What makes their findings so exciting is that for the first time, scientists have a

global picture of what is happening to climate and vegetation, he said. Although scientists know from a number of small-scale studies over the last few years that the planet is getting greener, there hasn't been a planetwide look at climate changes until now.

They determined how factors such as rising temperatures, altered precipitation patterns and increased carbon dioxide in the atmosphere have affected plant growth. They concluded that vegetation growth increased 6% over extensive regions of the Earth, with the largest increase in tropical ecosystems. Amazon rainforests accounted for 42% of the global increase, due mostly to decreased cloud cover and the resulting increase in solar radiation. Rainfall, sunshine and the length of growing seasons increased from 1982 to 1999, creating optimal conditions for plant growth in parts of the world where shortages of water, sun and heat have historically inhibited vegetation. Arid regions saw a 20% increase in rainfall. Temperatures in Alaska and other chilly areas shot up by about 4 °F.

For Running, the findings are welcome news that he believes the larger, nonscientific world will appreciate. "Most of the press, you read about global warming is bad news, and I think the public has gotten accustomed to whenever the issue comes up they think gloom and doom," Running said. "I think this will help lift people's spirits. "Everyone will agree that improved vegetation means more resources for humanity to work with.

The authors note that the 18-year period covered by their study includes two of the warmest decades since record keeping began. During this period, atmospheric carbon dioxide levels increased by 9% and the world's population increased by 36%. Richard A. Houghton, an atmospheric ecologist at the Woods Hole Research Center in Woods Hole, MA, who reviewed the study, said it fails to solve a puzzle that has baffled atmospheric scientists for years. As carbon dioxide has increased, so has the capacity of "carbon sinks," areas of the globe that absorb disproportionate amounts of the gas. The increased plant growth noted by the study doesn't appear to be enough to account for the additional carbon dioxide being absorbed, he said. So where the carbon dioxide goes remains a mystery. Many scientists believe that the growth in atmospheric concentrations of heat-trapping carbon dioxide from nearly two centuries of rapidly growing populations that burned increasing amounts of fossil fuels is largely responsible for the earth's warming climate.

The new research adds to the body of evidence that plants can store increasing amounts of carbon from the atmosphere, but it remains unclear how long this trend will continue or whether it will significantly affect atmospheric carbon dioxide levels. "This is a fairly major step forward in how we understand Earth's system and how climate interacts with Earth's biosphere," Running said. "The better we understand these changes, the better we can react and work with them." "I think this research gives us a better understanding of where we should be reconsidering certain aspects of land management," he said.

Source: Betsy Cohan, *Missoula Missoulian*, 6/6/03; Dennis O'Brien, *Baltimore Sun*, 6/6/03; and Peter N. Spotts, *The Christian Science Monitor, 6/6/03*

Farmers to Get Credit for Carbon Sinks

The Agriculture Department announced in June that farmers who manage their lands to maximize the amount of carbon stored in soil and crops will get credit for those techniques when they apply for some federal programs. Agriculture Secretary Ann Veneman said that the department will consider the amount of carbon stored on a landowner's property when the department evaluates applicants for the Environmental Quality Incentives Program (EQIP), the Conservation Reserve Program (CRP) and the Forest Land Enhancement Program.

USDA estimates that the amount of carbon sequestered by crops and trees that consume carbon dioxide and store it in the form of biomass or in the soil itself is about "154 million metric tons of carbon per year or 133% of the total emissions of greenhouse gases by agricultural and forestry activities." Under the EQIP program, which offers payments to farmers who control pollution and deal with other environmental problems, states and regions determine their own priorities, such as improving water quality or combating invasive species.

Under these changes, a state could theoretically make greenhouse gas (GHG) reduction its top priority and give grants to farmers and landowners who maximize the carbon content of their soil, said Tony Esser, national EQIP program manager. "The bottom line is a lot of the work that we do results in carbon sequestration," Esser said. Farmers who leave buffer strips between crops and watersheds to filter water, or who plant cover crops for erosion control are also increasing the amount of carbon stored.

The CRP gauges a project's potential by a point total, assigning anywhere from zero to 100 points for wildlife habitat or water quality improvement. Applicants who show evidence of carbon storage are now eligible for between three and seven points. Also, Veneman said that the department would aim for 500,000 acres of hardwood tree planting in CRP starting this summer, "which is expected to sequester one million metric tons of carbon equivalent by 2012."

Environmental groups said the program changes are a good start, but won't really make much difference without a cap on carbon emissions. "USDA has done some really good work," said Michelle Manion, senior analyst for *Union of Concerned Scientists'* global environment program. But, she said, it will be difficult to tell whether the carbon stored is anything above and beyond what farmers and landowners would have stored with their normal management techniques. Landowners will only make major changes when there is a cap on GHG emissions and utility companies begin paying them for carbon credits, Manion said.

But Charles Rice, professor of soil microbiology at Kansas State University, said even the small changes in USDA's programs will help provide incentives to farmers to change their practices. Giving applicants credit for terrestrial sequestration will mean more tree plantings and more farmers using devices like no-till planters, which minimize disturbance to the soil and maintain the carbon stored.

Brian Stempeck, *Greenwire*, 6/9/03

Presidential Panel Favors Extending Ocean Science to Inland Issues

Aiming to reduce pollution threatening ocean ecosystems, a presidential commission favors injecting ocean science into decision-making on traditionally inland issues such as farm runoff, the panel's chairman says. Ocean pollution often begins hundreds of miles inland, requiring a broader, ecosystem-based approach to controlling it, said James Watkins, head of the *U.S. Commission on Ocean Policy*.

He said further that the commission will recommend such an approach to Congress this fall. It would involve weighing impacts on all species and habitats within a marine ecosystem rather than making decisions fish by fish as if each species were independent. The new efforts could be organized geographically along the lines of the existing eight regional fishery councils whose primary task now is setting catch limits, he said.

He said, "One of the major findings is going to be that the oceans don't start at the coastline — there are 41 states and two Canadian provinces that cause the dead zone in the Gulf. So everyone's in the ocean business." The Gulf of Mexico's dead zone, where too little oxygen supports ocean life, fans out for thousands of miles from the Mississippi River Delta.

William Mitsch, a professor of natural resources and environmental sciences at Ohio State University and co-author of "*Wetlands*," an authoritative reference and textbook agrees. He says that the federal-state plan to restore Louisiana's rapidly eroding coastal wetlands could help reduce the annual dead zone, that forms each spring along the coastline. But, he said, the $14 billion plan will be only the first step to solving that problem.

Mitsch told the *Society of Wetland Scientists*, meeting at the Hyatt Regency New Orleans, that as much as $80 billion would have to be spent rebuilding and restoring wetlands throughout the Mississippi River basin to curb the nitrogen levels that cause the dead zone. In all, he said, 24 million acres of wetlands would have to be rebuilt — an area just a bit smaller than Kentucky — throughout the basin, which includes all or parts of 31 states and two Canadian provinces.

Mitsch said that by diverting river water into new areas to the east and west of the existing channeled course of the Mississippi in Louisiana, the nutrients would be absorbed by emerging wetland plants, reducing the amount that reaches the Gulf. In the upper reaches of the river, marginal cropland could be restored to wetlands to help strain part of the nutrients out of rainwater runoff. Along the Mississippi and its tributaries, bottomland hardwood forests and swamps also could be restored to act as nutrient sinks. Better use of fertilizers must be part of the solution, Mitsch said, "but it's not going to solve this problem unless there's a really draconian policy put in place" to force farmers to use less. And that's not going to be politically acceptable, he said.

Instead, a variety of voluntary programs would have to be retooled to target specific areas to reduce nitrogen loads, he said. The role of wetlands scientists, he said, will be to help officials build the new wetlands properly. "The last thing we want to do is spend a lot of money and build them incorrectly," he said. "Those involved in building them will have to understand wetland ecology."

Wetland restoration — key to solving many environmental problems.

Sources: John Heilprin, *Associated Press* and *San Francisco Chronicle*, 5/28/03
Mark Schleifstein, *New Orleans Times Picayune*, 6/10/03

Funding for Abandoned Mines Stirs Debate

Thousands of abandoned mines throughout the United States, especially in the East, have left behind dangers to the environment and people, and debate over how to address the problem is intensifying as the law overseeing it comes up for renewal next year. The U.S. is home to 4,300 abandoned mines, 1,700 of them in Pennsylvania. Mine shafts can fill with water for years, then flood and spill millions of gallons of acid-laced water, potentially poisoning nearby streams and rivers. Ground shifting around a mine shaft can cause a collapse and create a huge hole jeopardizing nearby roads and buildings. Such hazards caused the residents of Centralia, PA, to abandon the town.

The 1977 Surface Mining Control and Reclamation Act, which is up for renewal next year, created a trust fund for reduction of health and safety hazards from abandoned mines. The law requires fees from coal companies and puts the money into a federal trust fund, which has collected almost $7 billion so far. While the trust fund holds $1.5 billion in unspent funds and has underwritten some projects unrelated to coal, about 80% of at risk mine areas have not been addressed.

Appropriators dole out the money according to what states produce the most coal. Eastern states used to produce 75% of the nation's coal, but in the 1990s the coal epicenter shifted West, especially to Wyoming, which now leads the nation in coal production. Western states are privy to about two-thirds of the program's funds, but 93% of the remaining problems are east of the Mississippi River, said Interior's Jeffrey D. Jarrett. Streams polluted with acid, underground fires, holes and other hazards in the East would cost $6.6 billion in repairs, Jarrett said. Pennsylvania officials said mine runoff has polluted 2,800 miles of the state's waterways.

"This program is broken and how to fix it remains the $64,000 question," said Rep. Barbara Cubin (R/WY). Jarrett suggested the law be revamped to allow more money to go to the states with the most abandoned mines, but Western legislators remained skeptical. Wyoming officials said the state pays over 40% of the total funds, but all of its mines have been fixed.

"We have companies in Wyoming who have never worked in the East and therefore feel they have no obligation to pay for projects in Pennsylvania," Cubin said. "We are being asked to pay for transgressions in the coal industry that go way back over a hundred years." Rep. Nick Rahall (D/WV), who has brokered two previous extensions of the law said he is not sure how the problem will be solved this time around. "The reality in Congress is that we can hardly expect the Wyoming congressional delegation to sit back and allow such a [bill] to go through," he said

Source: *Greenwire, 6/4/03*

Microbe Devours Underground Waste

Scientists have identified a microbe that gobbles up toxic waste deep underground, offering a potential way to clean up a particularly nasty chemical that has contaminated the water underneath hundreds of the nation's industrial and military sites. Microbiologist Frank Loeffler said the bacterium, known as BAV1, was found in soil samples 20 feet down at a hazardous waste site in Oscoda, MI. BAV1 flourishes in the packed earth where there is no oxygen, feeding off certain toxic compounds, he said.

Other microbes that eat toxic waste have been discovered over the years and are used in some limited fashion to clean up contaminated sites. However, this is the first one found that thrives on vinyl chloride underground. Vinyl chloride is one of the most common and hazardous industrial chemicals. It can linger in the soil for hundreds of years and is present at about a third of the toxic waste sites listed by the Superfund program of the USEPA. The chemical usually accumulates as a deteriorated form of more complex compounds found in dry cleaning fluid and metal cleansers.

Brief contact with vinyl chloride can cause dizziness, drowsiness, and headaches. Long-term exposure can raise the risk of a rare form of liver cancer, according to the EPA. Loeffler has already tested the bacterium on vinyl chloride at the contaminated site in Michigan. Its ability to eat the toxic compound and render it harmless was hastened in one test by adding plant fertilizer and other nutrients to the soil. In another trial, vinyl chloride was destroyed by injecting the soil with concentrated amounts of BAV1 developed in the lab.

His work is presented in the July 3rd issue of the journal *Nature*. "It's pretty exciting stuff," said David L. Freedman, an environmental engineering professor at Clemson University. Loeffler said use of the microbes requires only the approval of the land owner. He said that the microbe remains in the soil and that even when used in large concentrations, it has been shown not to harm humans.

"These organisms can only grow when the contaminants are present," he said. "When the material is gone, their numbers decline, because they don't have any food. So really it's a perfect system." Most cleanup crews now deal with vinyl chloride by pumping contaminated water out of the ground and spraying it into the atmosphere as a fine mist, letting sunlight break down the chemical naturally. But hazardous chemicals have a way of sticking to the soil underground, so pumping out the aquifer never quite gets rid of all the contaminants, Loeffler said.

Scientists have long suspected that deep in the ground some type of microbe found vinyl chloride palatable. Loeffler spent four years searching for it, isolating BAV1 from a bustling community of microscopic organisms that included thousands of kinds of bacteria. James Gossett, a Cornell University researcher who identified a bacterium in 1997 that could eat organic chlorides but had problems with vinyl chloride, called BAV1 "another in a long list of discoveries or isolations" that will illuminate research into cleaning toxic waste with bacteria.

Gossett said the discovery will help scientists determine which enzyme breaks down vinyl chloride. If the enzyme is found, Gossett said more robust bacteria that can survive in the presence of oxygen or eat faster than BAV1 could be genetically engineered to digest vinyl chloride.

Source: Chris Kahn, *Associated Press and Boston Globe*, 7/3/2003

Louisiana Governor Rejects Fish Farming Bill

A bill that might have allowed fish farmers to cultivate ecologically dangerous alien species met its demise on Louisiana Governor Mike Foster's desk in early July. Foster vetoed House Bill 2013 because it might pose unforeseen dangers to Louisiana ecosystems. The bill would have transferred authority over fish farming from the state Department of Wildlife and Fisheries, which has limited cultivation of non-native species, to the potentially less restrictive Department of Agriculture.

Fish farmers had welcomed the bill, saying it could ease overly tight controls on marketable fish that were, in many cases, already swimming in Louisiana waters. The bill's opponents said it opened dangerous holes in the state's efforts to control invasive species, allowing private investors to enrich themselves while paving incursion routes for animals that might prove as ecologically destructive as nutria or Formosan termites.

Though the Foster administration attempted to broker a compromise between the two interests while lawmakers debated the measure, the final bill did not resolve the governor's doubts, he said. "As not all the changes I thought necessary were accepted, not all my concerns are relieved in the final bill," Foster wrote. "And without a full enforcement role for the . . . Department of Wildlife and Fisheries, I cannot be comfortable that we have done all that we can to eliminate the risk of irreversible damage to the wildlife of this state."

Evidence of such risks appeared last month, when a local fisherman reported landing more than a dozen Asian carp — massive non-native fish with a tendency to leap toward lights and vibrations, including passing boats — that have spread along the Mississippi River since escaping from fish farms in Arkansas and Mississippi more than a decade ago.

Both supporters and opponents of the bill claimed the fish as evidence supporting their case. Proponents of easing restrictions on aquaculture said the fish proved existing rules weren't working. The bill's opponents said the fish were a tangible warning about the dangers of cultivating non-native species.

Resource managers said they intend to comply with the bill's main ideas, if not its specific requirements. The measure originally passed by state lawmakers, for example, would have turned aquaculture management over to a council made up of representatives of various state agencies, industry leaders and scientists and supervised by the agriculture department. Foster said he will issue an executive order establishing a nearly identical committee within the Department of Wildlife and Fisheries in coming months.

Officials with that agency said they plan to work more closely with aquaculture interests in the future. "The debate sent a message to the department that it needs to open better communication lines to the aquaculture industry," said John Roussell, assistant secretary of Wildlife and Fisheries. "If they're going to survive, they're going to have to diversify and go beyond just catfish. If that's a move they're going to have to make, then we're going to need to work together to address that."

The model proposed by Louisiana House Bill 2013 with a state's agriculture department (instead of its fish and wildlife agency) in the key oversight role over the aquaculture industry is already in place in some states, including the State of Mississippi. In the Mississippi case, state wildlife officials have little influence over exotic species introductions, and have been discouraged from even participating in aquatic nuisance species control efforts, such as the Aquatic Nuisance Species Panel just formed for the Mississippi River Basin. Lack of participation on such panels by any key stakeholder within the Basin reduces the effectiveness of all of the other partners in controlling the spread of invasive species.

Source: Aaron Kuriloff, *New Orleans Times Picayune*, 7/17/03

Wildlife Authorities Seize Rare Animals in Illegal Reptile Ring

State and federal wildlife officials seized hundreds of rare and endangered turtles and snakes in June raids aimed at breaking up one of the nation's largest suspected networks of illegal reptile and amphibian sales. The morning raids in Ohio, Indiana and southern Michigan followed a two-year investigation by the states' departments of natural resources and the U.S. Fish and Wildlife Service (FWS), officials said.

"It's the first time we've actually been able to catch them and hopefully it will send a strong message to curtail that activity," said Brad Wurfel, press secretary for the Michigan DNR. The ring was under observation for more than a decade, and the break came when investigators managed to infiltrate the group by posing as dealers, trappers and customers, officials said. At least 50 people in the three states are expected to be charged, officials said.

More than 100 snakes, turtles and other animals were seized as 10 homes were searched in Ohio, said Jim Quinlivan, law enforcement supervisor for the Ohio DNR's Wildlife Division. About 150 protected turtles and 20 protected snakes were seized in Michigan, along with marijuana, according to an undercover detective with the Michigan DNR, who asked not to be identified. Their market value was estimated at more than $55,000.

Some of the animals confiscated were spotted turtles, which are a protected species in Michigan and can sell for as much as $250 each. Other species included spotted salamanders, colorful snakes and turtles some native to the Lake Erie shore, while others such as Eastern Massasauga rattlesnakes are found in hilly regions inland.

Several hundred illegal reptiles and amphibians were seized and several dozen people were arrested in similar Indiana raids five years ago. This time, the raids — in the western Indiana town of Clay City and in Evansville — produced four rattlesnakes, two vipers and one cobra, all poisonous. Capt. Terry Hyndman of the state Department of Natural Resources said seven Indiana residents were arrested. Charges included illegal possession of a protected species, illegal sales of a protected species and unlawful interstate commerce.

The commerce charge is "one of the things the FWS is very interested in," Hyndman said. "If you purchase or possess something illegally in one state and cross state lines, you've violated federal law." "Indiana was much smaller than the others, which we were very thankful for, because that tells us that our raid in 1998 did a good job," Hyndman said.

"There seems to be more and more people who want to get into the exotic pet trade, either as a status symbol with a unique pet or for the black market. It's an extremely profitable black market," Hyndman said. "In Indiana, we have some very strict rules on what native species you can or cannot possess. The reason is, when it's left unchecked, there's such a market for them there are reptile hunters out there that will actually decimate the population in a given area," he said.

The most valuable snakes taken in the Indiana raids probably are two Gaboon vipers, an albino western diamondback rattlesnake and an albino cobra, each likely worth more than $600, Hyndman said. "The others would be more toward $200 to $400," he said. The state also is keeping for evidence a deadly black mamba that was seized in Ohio and returned to Indiana. The snake was bought illegally in the parking lot of the Indiana State Fairgrounds during a Midwest reptile show three weeks ago, Hyndman said.

Source: Bree Fowler, *Associated Press and The Kansas City Star*, 6/29/02; and Steve Herman, *Associated Press and The Louisville Courier-Journal*, 6/29/03

Great Ohio River Paddle

The *Ohio River Foundation* (ORF) announced the opening of registration for the Great Ohio River Paddle to be held on September 20-27, 2003. The inaugural Great Ohio River Paddle is a 140-mile multi-day paddling event intended to:

- Educate schoolchildren and the general public about Ohio River ecology;
- Promote the importance of conserving and protecting the Ohio River; and
- Celebrate the river and heritage of riverside communities.

Forty experienced paddlers will travel from Portsmouth, OH to Rising Sun, IN in 8 days. Along the way there will be a variety of activities for schoolchildren and the general public at the host communities.

Proceeds from the Great Ohio River Paddle will benefit the River Explorer program of the ORF. The River Explorer program seeks to educate schoolchildren and the general public about the ecology and importance of the Ohio River. Schools in the communities along the course of the Great Ohio River Paddle are excited about participating in the program.

The Great Ohio River Paddle has something for everyone. For skilled paddlers, it's a chance to paddle over 140 miles from Portsmouth, OH to Rising Sun, IN. For those who want to celebrate and learn more about the Ohio River and its communities from the shore, it offers a series of events showcasing local cultural demonstrations, kayaking skills, information booths, and natural resource programs. Rich Cogen, Executive Director said, "Little is taught about the Ohio River, even though its ecology plays such an important role in our daily lives. This event will highlight the condition of the river and teach river science to schoolchildren and the general public."

The ORF serves the Greater Cincinnati Area and the 200,000 square mile watershed with educational, conservation, and recreation programs. ORF's mission is to protect and restore the water quality and ecology of the Ohio River and its tributaries for the health and enjoyment of present and future generations.

Contact: Rich Cogen, ORF Executive Director at 513-460-3365, or visit ORF's website at ww.ohioriverfdn.org.

Meetings of Interest

Aug 21-22: Maritime Environmental Engineering Technical Symposium. Arlington, VA. Contact David Breslin, BreslinDA @navsea.navy.mil

Aug 29-Oct 1: Ohio State University Olentangy River Wetland Research Park Summer Short Course Series: Ecology Modeling, Columbus, OH. See: http://swamp.ag.ohio-state.edu/ShortCourse. html. Contact: (614) 247-7984.

Oct 6-8: Ohio State University Olentangy River Wetland Research Park Summer Short Course Series: Ecological Engineering and Ecosystem Restoration, Columbus, OH. See: http://swamp.ag.ohio-state.edu/ShortCourse. html. Contact: (614) 247-7984.

Oct 11-15: 57th Annual conference: Southeastern Association of Fish and Wildlife Agencies, Mobile, AL. See: www.dccnr.state.al.us/seafwa2003. Contact: Fred Harders, wmccullers@dcnrstate.al.us, (334) 242-3842

Oct 9-12: Human Dimensions of Natural Resources in the Western U.S., Sun Valley, ID. See: www.cnr.uidaho.edu/rrt/arrp. htm. Contact: Troy Hall, (208) 885-9455, troyh@uidaho.edu

Oct. 22-25: 21st Wakefield Fisheries Symposium: Assessment and Management of New and Developed Fisheries in Data-Limited Situations. Anchorage, AK. See www.uaf.edu/seagrant/. Contact fycon@uaf.edu, (907) 474-6701

Oct 30-31: Ecosystems: Restoration and Creation, Tampa, FL. See: www.hccfl.edu/depts/detp/eco-conf.html/.

Nov 4-8: North American Lake Management Society 2003: Protecting Our Lakes' Legacy, Mashantucket, CT. See: www.nalms.org. Contact: nalms@nalms.org, (608) 233-2836

Nov 16-18: Total Maximum Daily Load 2003 Conference, Chicago, IL. See: www.wef.org/pdffiles/TDML03Call.pdf. Contact: (614) 247-7984

Dec 6-10: 64th Midwest Fish and Wildlife Conference, Kansas City, MO. Contact: Bill Eddleman, weddleman@biology.semo.edu

May 2-6, 2004: AFS, 4th World Fisheries Congress - Reconciling Fisheries with Conservation: The Challenge of Managing Aquatic Ecosystems. Vancouver, BC. See www.worldfisheries2004org. Contact fish2004@advance-group.com, (800) 555-1099.

May 3-7, 2004: River Voices, River Choices. River Management Society's 7th biennial symposium, Lake Tahoe, CA. Contact: rms@river-management.org. See: www.river-management.org

Aug 21-26, 2004: 134th Annual Meeting of the American Fisheries Society**.** Madison, WI. Contact: Betsy Fritz, bfritz@fisheries.org, (301) 897-8616

Sept. 12-17, 2004: 5th International Symposium, ECOHYDRAULICS, Madrid, Spain. The main focus will be restoration of aquatic habitats. Contact: Dr. Diego García de Jalón, ecohydraulics@montes.upm.es or Secretariat: ecohydraulics @tilesa.es. See: www.montes.upm.es/congresos/ecohydraulics, www.tilesa.es/ecohydraulics

Congressional Action Pertinent to the Mississippi River Basin

Endangered Species Act (ESA) of 1973

S. 369. Thomas (R/CA). Amends the ESA to improve the processes for listing, recovery planning, and delisting, and for other purposes.

S. 1178. Enzi (R/WY). Amends the ESA to require the Federal Government to assume all costs relating to implementation of and compliance with that Act.

H. R. 1194. Herger (R/CA). Amends the ESA to enable Federal agencies to rescue and relocate any endangered or threatened species that would be taken in the course of certain reconstruction, maintenance, or repair of Federal or non-Federal manmade flood control levees.

H. R. 1235. Gallegley (R/CA) and Gibbons (R/NV). Provides for management of critical habitat of endangered and threatened species on military installations in a manner compatible with the demands of military readiness, and for other purposes.

H. R. 1662. Walden (R/OR) and 18 Cosponsors. Amends the ESA to require the Secretary of the Interior to give greater weight to scientific or commercial data that is empirical or has been field-tested or peer-reviewed, and for other purposes.

H. R. 1835. Gallegley (R/CA) and 3 Cosponsors. Amends the ESA to limit designation as critical habitat of areas owned or controlled by the Department of Defense, and for other purposes.

H. R. 1965. Gibbons (R/NV). Amends the ESA to limit the application of that Act with respect to actions on military land or private land and to provide incentives for voluntary habitat maintenance, and for other purposes.

H. R. 2602. Otter (R/ID). Amends the ESA to make the authority of the Secretary to designate critical habitat discretionary instead of mandatory, and for other purposes.

Energy

H. R. 1013. Radanovich (R/CA), Hastings (R/WA), and Walden (R/OR). Amends the Federal Power Act to provide for alternative conditions and alternative fishways in hydroelectric dam licenses, and for other purposes.

Federal Water Pollution Control Act (FWPCA) Amendments:

S. 170. Clean Water Infrastructure Financing Act of 2003. Voinovich (R/OH) and **H.R. 20.** Kelly (R/NY) and Tauscher (D/CA). Amends the FWPCA to authorize appropriations for State water pollution control revolving funds, and for other purposes.

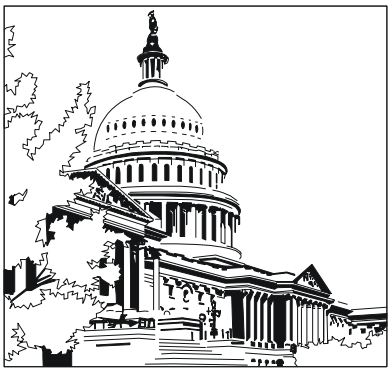
S. 473. Feingold (D/WI) and 3 Co sponsors and **H.R. 962.** Oberstar (D/MN) and 21 Co sponsors. Amends the FWPCA to clarify the jurisdiction of the U.S. over waters of the U.S.

H. R. 738. Pallone (D/NJ) and 16 Co sponsors. Amends the FWPCA to clarify that fill material cannot be comprised of waste.

H. R. 784. Camp (R/MI) and 17 Co sponsors. Amends the FWPCA to authorize appropriations for sewer overflow control grants

H. R. 1560. Duncan (R/TN) Amends the FWPCA to authorize appropriations for State water pollution control revolving funds, and for other purposes.

H. R. 1624. Pallone (NJ/D). Amends the FWPCA to improve the enforcement and compliance programs.



Floodplain Management

H. R. 67. Flake (R/AZ) and Hayworth (R/AZ). Provides temporary legal exemptions for certain management activities of the Federal land management agencies undertaken in federally declared disaster areas.

H.R. 253. Two Floods and You Are Out of the Taxpayers' Pocket Act of 2003. Bereuter (R/NE) and Blumenauer (D/OR). Amends the National Flood Insurance Act of 1968 to reduce losses to properties for which repetitive flood insurance claim payments have been made.

Forestry

S. 32. Kyl (R/AZ) and 4 Cosponsors and **H.R. 460.** Hayworth (R/AZ) and 7 Co sponsors. Establishes Institutes for research on the prevention of, and restoration from, wildfires in forest and woodland ecosystems of the interior West.

H. R. 750. Udall (D/CO). Provides for a study of options for protecting the open space characteristics of certain lands in and adjacent to the Arapaho and Roosevelt National Forests in Colorado, and for other purposes.

H. R. 1042. Udall (D/CO) and Udall (D/NM). Authorizes collaborative forest restoration and wildland fire hazard mitigation projects on National Forest System lands and other public and private lands, to improve the implementation of the National Fire Plan, and for other purposes.

Global Warming

S. 17. Daschle (D/SD) and 15 Cosponsors. Initiates responsible federal actions that will reduce global warming and climate change risks to the economy, the environment, and the quality of life and for other purposes.

S. 139. Lieberman (D/CT) and McCain (R/AZ). Provides for scientific research on abrupt climate change, to accelerate reduction of U.S. greenhouse gas (GHG) emissions by establishing a market-driven system of GHG tradeable allowances to be used interchangeably with passenger vehicle fuel economy standard credits, limit U.S. GHG emissions, and reduce dependence on foreign oil, and ensure benefits to consumers from the trading in such allowances.

H. R. 1578. Udall (D/CO). Promotes and coordinates global change research, and for other purposes.

Invasive Species

S. 144. Craig (R/ID) and 9 Co sponsors and **H.R. 119.** Hefley (R/CO). Requires the Interior Secretary to establish a program to provide assistance through the States to eligible weed management entities to control or eradicate harmful, nonnative weeds on public and private land.

S. 525. Levin (D/MI) and 15 Co sponsors and **H. R. 1080.** Gilchrest (R/MD) and 67 Co sponsors. Amends the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to reauthorize and improve that Act.

S. 536. DeWine (R/OH) and 5 Co sponsors and **H.R. 266.** Ehlers (R/MI) and Gilchrest (R/MD). Establishes the National Invasive Species Council, and for other purposes.

H.R. 273. Gilchrest (R/MD) and Tauzin (R/LA). Provides for the eradication and control of nutria in Maryland and Louisiana.

H. R. 989. Hoekstra (R/MI). Requires the issuance of regulations pursuant to the National Invasive Species Act of 1996 to assure, to the maximum extent practicable, that vessels entering the Great Lakes do not discharge ballast water that introduces or spreads nonindigenous aquatic species and treat such ballast water and its sediments through the most effective and efficient techniques available, and for other purposes.

H. R. 1081. Ehlers (R/MI) and 67 Co sponsors. 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.

H. R. 2310. Rahall (D/WV) and 17 Co sponsors. Protects, conserves, and restores native fish, wildlife, and their natural habitats on Federal lands and non-Federal lands through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes.

Mining

H. R. 504. Udall (D/CO). Provides for the reclamation of abandoned hardrock mines, and for other purposes.

Public Service

S. 89. Hollings (D/SC) and **H.R. 163**. Rangel (D/NY) and 5 Co sponsors. Provides for the common defense by requiring that all young persons in the U.S., including women, perform a period of military service or civilian service in furtherance of the national defense and homeland security, and for other purposes.

Public Lands

S. 124. Roberts (R/KS). Amends the Food Security Act of 1985 to suspend the requirement that rental payments under the conservation reserve program be reduced by users, through the establishment of a National Forest Ecosystem Protection Program.

H. R. 380. Radanovich (R/CA). Provides full funding for the payment in lieu of taxes program for the next five fiscal years, to protect local jurisdictions against the loss of property tax revenues when private lands are acquired by a Federal land management agency, and for other purposes.

H. R. 652. Andrews (D/NJ). Assures that the American people have large areas of

land in healthy natural condition throughout the country to maximize wildland recreational opportunities for people, maximize habitat protection for native wildlife and natural plant communities, and to contribute to the preservation of water for use by downstream metropolitan communities and other users, through the establishment of a National Forest Ecosystem Protection Program.

H. R. 749. Udall (D/CO). Directs the Secretary of the Interior to establish the Cooperative Landscape Conservation Program.

Water Resources

S. 323. Landrieu (D/LA) and Breaux (D/LA). Establishes the Atchafalaya National Heritage Area, Louisiana.

S. 426. Daschle (D/SD) and Johnson (D/SD). Directs the Secretary of the Interior to convey parcels of land acquired for the Blunt Reservoir and Pierre Canal features of the Oahe Unit, James Division, SD, to the Commission of Schools and Public Lands and the Department of Game, Fish, and Parks of the State of SD for the purpose of mitigating lost wildlife habitat, on the condition that the current preferential leaseholders shall have an option to purchase the parcels from the Commission, and for other purposes.

S. 454. Harkin (D/IA) and Grassley (R/IA) and **H. R. 590.** Leach (R/IA) and Boswell (D/IA). Directs the Secretary of the Army to convey the remaining water supply storage allocation in Rathbun Lake, Iowa, to the Rathbun Regional Water Association.

S. 531. Dorgan (D/ND) and Johnson (D/SD). Directs the Interior Secretary to establish the Missouri River Monitoring and Research Program, to authorize the establishment of the Missouri River Basin Stakeholder Committee, and for other purposes.

S. 561. Crapo (R/ID) and 5 Co sponsors. Preserves the authority of States over water within their boundaries, and delegates to States the authority of Congress to regulate water, and for other purposes.

S. 993. Smith (R/OR). Amends the Small Reclamation Projects Act of 1956, and for other purposes.

S. 900. Burns (R/MT). Conveys the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the pertinent irrigation districts.

H.R. 30. Bereuter (R/NE). Amends the Water Resources Development Act of 1992 to authorize the Secretary of the Army to pay the non-Federal share for managing recreation facilities and natural resources to water resource development projects if the non-Federal interest has agreed to reimburse the Secretary, and for other purposes.

H. R. 135. Linder (R/GA) and 3 Co sponsors. Establishes the "Twenty-First Century Water Commission" to study and develop recommendations for a comprehensive water strategy to address future water needs.

H. R. 961. Kind (D/WI) and 5 Co sponsors. Promotes a Department of the Interior effort to provide a scientific basis for the management of sediment and nutrient loss in the Upper Mississippi River Basin, and for other purposes.

H. R. 1517. Graves (R/MO) and 6 Cosponsors. Amends the Land and Water Conservation Fund to limit the use of funds available from the Land and Water Conservation Fund Act of 1965 to use for maintenance.

H. R. 2557. Young (R/AK) and Duncan (R/TN). Authorizes the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes.

Wild and Scenic Rivers

H. R. 987. Herger (R/CA) and Doolittle (R/CA). Amends the Wild and Scenic Rivers Act to ensure congressional involvement in the process by which a river that is designated as a wild, scenic, or recreational river by an act of the legislature of the State or States through which the river flows may be included in the National Wild and Scenic Rivers System, and for other purposes.

Source: *U.S. Congress On Line; http://www.access.gpo.gov/congress/cong009.html*

River Crossings

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