River Crossings

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Chicago Summit Generates Possible Solutions to Invasive Species Issues

Approximately 70 top scientists, engineers and invasive-species experts from around the globe gathered in Chicago in mid May to generate ideas for halting the exchange of invasive species between the Great Lakes and Mississippi River drainage basins. According to these experts, invasive species are the greatest threat to both the economy and ecology of the Great Lakes and Mississippi River basins, and are responsible for $137 billion a year in economic losses nationwide.

Convened by Chicago Mayor Richard M. Daley, the Chicago Department of Environment and the U.S. Fish and Wildlife Service, the Aquatic Invasive Species Summit was designed to introduce the diverse experts to the Chicago region's man-made waterway system, and to have them brainstorm solutions to the transport of invasive species through those waterways.

"Everybody is wondering, 'Why is the mayor here?' " Daley said at the beginning of the two-day Summit. "I'm here because water has been so important to the history of Chicago." Daley told the scientists they may have to consider "extreme" measures to protect the Great Lakes from the Asian carp and other invasive species. More than 160 nonnative species now live in the Great Lakes drainage basin, and nearly the same number live in the Mississippi River drainage basin where they threaten the existence of native species. These two basins are connected by the Chicago Sanitary and Ship Canal and the Cal-Sag Channel (CSSC), which together constitute a "revolving door" for invasive species (See map on next page).

Fifty pound invasive bighead carp taken in Barkley Lake, Cumberland River,TN.

"The longer you put off solving a problem, the more it costs you in the long run. An aggressive solution to a problem is almost always cheaper than repairing the damage later," Daley said. "Sometimes we have to be bold about it and not be afraid of taking some active steps protecting us against invasive species." The Mayor pointed out that over the last 40 years, a newly established population of invasive species has been found in the Great Lakes every eight months. Daley recently launched a comprehensive water agenda initiative that includes protecting the Great Lakes from harmful invasive species.

"We are under attack from biological invaders ranging from microbes to mammals that threaten our heritage and our health," said Robyn Thorson, regional director of the

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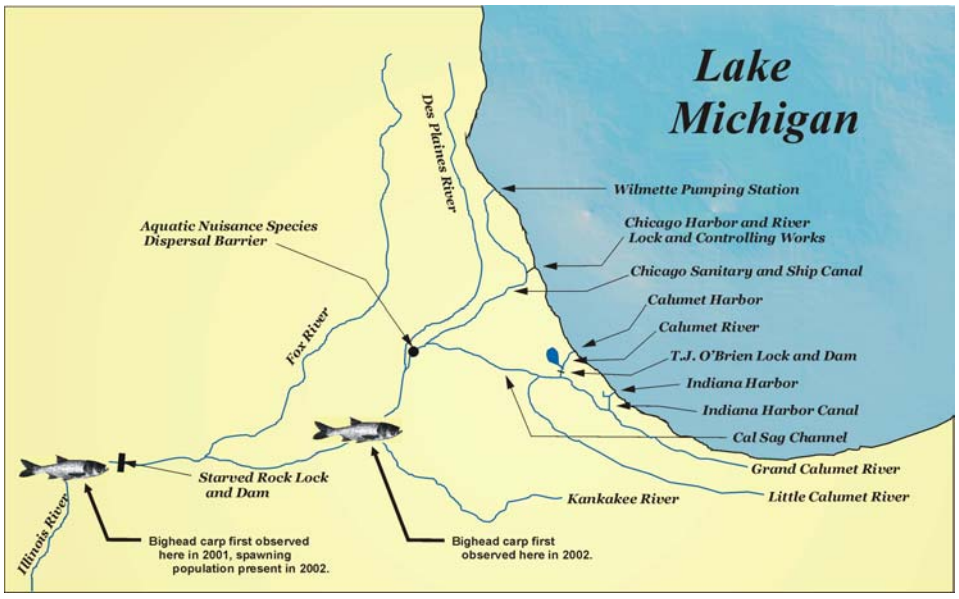
U.S. Fish and Wildlife Service. "I believe the threats from invasive species constitute the most important and urgent environmental challenge of the 21st century, certainly for our region and perhaps for the planet."

Researchers ticked off a range of startling facts about the aquatic invasive species problem:

- More than half of the United States is impacted by the zebra mussel. Introduced into the Great Lakes via ballast water in 1988, the invader spread via the CSSC to the Mississippi River and other Midwestern river systems to 28 states. Annual costs associated with removing zebra mussels from water intakes and other structures total $250 million.
- Asian carp, which are traveling up the CSSC from the Mississippi River, are within several miles of Lake Michigan and along with other invaders could severely impact the $4.5 billion commercial sport and fishing industries in the Great Lakes. These species eat much of the same food as desirable, native fish, so competition with Asian carp threatens the abundance and even the existence of native fish species.
- There are nearly 40 native mussel species in the Mississippi River from the headwaters in Minnesota to southern Illinois, some of which are federally threatened or endangered. Others are dwindling in numbers due to habitat decline. The zebra mussel threatens these species with extinction. And the quagga mussel, introduced into the Great Lakes in 1989 and now within 50 miles of the CSSC, could further impact them or hasten their extinction – threatening the biodiversity that is so important to a healthy region.

Mayor Daley urged Summit attendees to think creatively, "I believe sometimes there has to be extreme ways of protecting the Great Lakes," he said. "Sometimes we have to be bold about it and be not afraid of taking some active steps." Daley is especially concerned about the large, plankton-feeding bighead and silver carp which escaped fish culture ponds in the South more than two decades ago and have since steadily moved up the Mississippi and Illinois rivers. Today these invaders are within about 50 river miles of the Lake Michigan shoreline (see map above). The worry is that if they make it through a temporary electrical barrier about 30 miles downstream from the lake, the cold water-loving carp could quickly impact Great Lakes plankton feeding fish populations, and eventually impact or displace popular sport species such as perch, lake trout and salmon.



Map showing connecting channels between the Mississippi River Basin and Lake Michigan, the location of the electrified aquatic nuisance species barrier and locations of recorded collections of Asian carp in the Chicago area.

An experimental electric barrier designed to repel fish has been operating in the CSSC for roughly a year. But the electric barrier has not been 100% successful in tests run on common carp already established in the vicinity — one of 70 fish tagged and tracked

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by the Illinois Department of Natural Resources (DNR) slipped through the barrier in March. That's a concern said DNR biologist John Dettmers, who's helping fine-tune barriers for the expected arrival of the Asian carp. "The bottom line is all you need is two fish, one of each sex, to start a population," he said.

The electrical barrier is expected to last just three years. A second $7 million electrical barrier, 1,000 feet downstream of the first one, is slated to be in place by the summer of 2004 and to last for 20 years. But while these barriers will help to slow the advance of invasive species, they will not prevent the exchange of all species and life stages. For example, plankton and species in immature life stages can still cross the barrier. Members of the Illinois Congressional Delegation, particularly Sen. Richard Durbin and Rep. Judy Biggert, have been instrumental in helping to secure funding for these barriers. Mayor Daley has strongly supported these efforts as well.

The Chicago City Council has also pitched in by passing an ordinance on 4/9/03 that prohibits businesses from selling live Asian carp (bighead and silver), a popular Chinese food, to the general public. The Council passed the measure because of concerns about an Asian custom of encouraging one to release a live fish (e.g. into the lake or its tributaries) for each fish eaten. This practice could lead to the spread of exotic species infestations. The carp must now be killed before they can be sold. City officials estimate that the ban could affect as many as 50 Chicago businesses. "It's an inexpensive, tasty fish that feeds a lot of people," said Suzanne E. Malec, deputy commissioner for Chicago's Department of Environment. "I thought there was going to be some anger." Instead, Malec said the law has been almost universally embraced as "a responsible thing to do."

The broad range of summit participants agreed that there needs to be a proactive, decisive approach to solving the exchange of aquatic invaders between the Great Lakes and Mississippi River basins. They generated four general ideas for solving the problem; some are short-term, others are more long-term. All require significant research into effectiveness and feasibility. They are:

- Physical barriers at one or more locations in the Chicago Waterway System to physically separate Lake Michigan water from canal water;
- Technological barriers, using electrical or acoustical technologies for instance, to deter fish and other aquatic life from advancing;
- An eradication zone, which would be a stretch along the canal where methods such as removing oxygen from the water or other technologies would eradicate aquatic life from the water;
- A filter or bypass system, which would either filter aquatic life from the water or divert the organisms into a chamber where they would be eradicated.

Summit participants also agreed for the need to engage a broad audience and diverse interests, such as commercial navigation and recreational boaters, in devising and implementing a solution. They have begun to develop an action plan for cultivating partnerships; facilitating research; and pursuing financial, political and technical support to address short-term and long-term management of the problem.

Historically, there was no water link between the Mississippi River and Great Lakes basins. In the early 20th century, engineers reversed the flow of the Chicago River to carry the city's wastes away from the Lake and into the Mississippi River basin. For decades that water was too polluted to support most species, but stringent environmental laws and better waste treatment technology have led to a dramatic improvement in water quality during the past couple of decades. Fish now thrive in the canal, and so the "revolving door" is now open to the exchange of exotic invaders between the Mississippi River Basin and the Great Lakes.

Sponsors of the Aquatic Invasive Species Summit were the City of Chicago Department of Environment, the U.S. Fish and Wildlife Service, Illinois-Indiana Sea Grant, and the University of Wisconsin Sea Grant Institute. Additional sponsors and contributors included the U.S. Environmental Protection Agency, the Metropolitan Water Reclamation District of Greater Chicago, the Mississippi Interstate Cooperative Resource Association, the U.S. Army Corps of Engineers – Chicago District and Waterways Experiment Station, the International Joint Commission, and the Great Lakes Commission.

Sources: *City of Chicago Press Release*, 5/22/03 (Contact: Christine Esposito, (773) 637-3939, terracompr@earthlink.net/); Dan Egan, *Milwaukee Journal Sentinal*, 5/14/03; John Biemer, *Chicago Tribune*, 5/15/03; Eryn Gable, *Greenwire* 4/28/03 and Jerry Rasmussen. 2002. *The Cal-Sag and Chicago Sanitary and Ship Canal: A Perspective on the Spread and Control of Selected Aquatic Nuisance Fish Species.* U.S. Fish and Wildlife Service, Rock Island, IL 61201. 26 pp. (.pdf file of Rasmussen's paper is available on the MICRA Web Site at http://wwwaux.cerc.cr.usgs.gov/MICRA)

Electrical Fish Barrier Breached

On 4/3/03 a common carp, radio tagged as part of an electrical fish barrier monitoring project in the Chicago Sanitary and Ship Canal, passed through the barrier designed to prevent fish movement. The barrier (see diagram below) was electrified last year as part of an effort to prevent Asian carp from entering the Great Lakes. The fish was located by radio transmitter downstream from the barrier at the end of March; and then on April 11th the carp was located about 1.5 miles upstream from the barrier.

Officials noted that there was no apparent change or lapse in the barrier operation during that time. However, upon hearing that a fish had passed through, officials of the barrier manufacturer, *Smith-Root Co*., headquartered in Washington state, increased the power output of the barrier by about 50% to 2 volts/cm with an increased pulse frequency and duration. Then on April 17 at 7 P.M. the barrier went down. The failure was first noted by *Smith-Root*

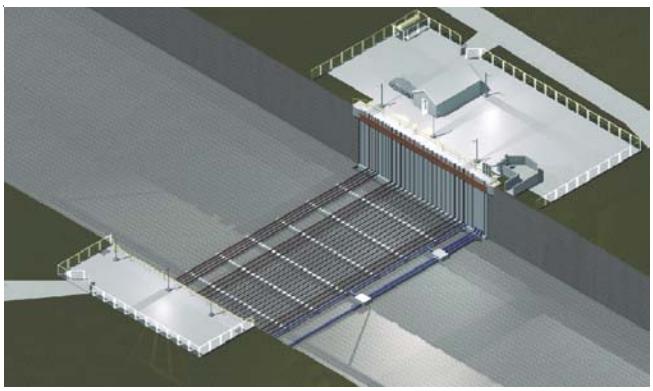

Diagram of the aquatic nuisance species (ANS) barrier located in the connecting canals between Lake Michigan and the Illinois River. Electric cables laid along the channel bed create an underwater electrical field designed to repel fish.

officials at their monitoring systems in Washington. They immediately notified staff at the Corps of Engineers and at *Patrick Engineering*, their local cooperator. *Patrick Engineering* officials immediately went to the site to check on the system. *Smith-Root* engineers then flew to Chicago early on Friday and got the barrier up and running by Friday evening at 8:30 P.M. Working well into the wee hours on Saturday, they finished the job on Saturday morning.

Four main circuit breakers had blown as well as fuses in the circuit boards and even some of the internal circuitry was affected. Initial indications were that a huge, high-speed external power spike caused the failure. Engineers at *Smith-Root* had strong doubts that increasing the voltage output contributed to the simultaneous failure of the four circuit boards. But Phil Moy, *Wisconsin Sea Grant*, said he didn't know if the line power actually went out as a result of a power surge because that would have triggered the start-up of the backup generator. But even if the generator had ran, power would not have reached the pulsators because the circuit breakers and some internal circuitry had blown.

The barrier was thus out of operation from 7 P.M. Thursday to about 8:30 P.M. Friday. If it had only been the circuit breakers, the outage would have been much shorter. *Smith-Root* officials tried to reestablish barrier operation from their office in Washington and in the process determined the extent of damage to the pulsator boards. Moy said that, "The pulsator failure was apparently related to the increased voltage applied to the system after the power was increased on the 16th in response to the passage of the carp". *Smith-Root* anticipated a "sag" in the line voltage as they increased the power draw from 1v/cm to 2v/cm. Apparently *Comm-Ed*, the power supplier, provided a better power source than anticipated and there was no line sag. The result was the fused circuit boards, blown fuses and circuit breakers in the pulsators. Now that *Smith-Root* is aware of the condition of the line voltage, the problem will be avoided in the future. The system has shown no failures since April 17th, and the voltage remains at the increased level (2 v/cm), Moy said.

He said further that these events demonstrate that the barrier project is in many regards a demonstration, it is a learning experience. We are fortunate that we have a sophisticated, on-going 24-hour monitoring system in place that allows us to detect movements of the fish as they occur and to respond to these fish movements in real time, Moy said. Second, the failure of the array underscores the need to provide a fail-safe system in the form a second barrier supported by independent power. "We should consider these events as a test of our ability to respond to outright failure of electrical components, and learn how to protect the system from future events and we should consider ourselves lucky in that this system failure occurred now rather than three to six months from now when the Asian carp may be considerably closer to the barrier site", Moy said.

According to Moy, passage of the carp through the barrier array seems to have occurred at a time when a barge was passing through the barrier site. "Subsequent observations of barge activity at the site reveal that the (barge) operators sometimes spend several minutes with the tug in the barrier array as they attempt to position the tow for movement around the bend". Moy said further, "These movements are associated with extensive prop wash which may have entrained (i.e., swept the fish along with the propwash) the fish in one way or another pushing or dragging it through the barrier" "We will coordinate with the river carriers to see if this situation can be avoided", he said.

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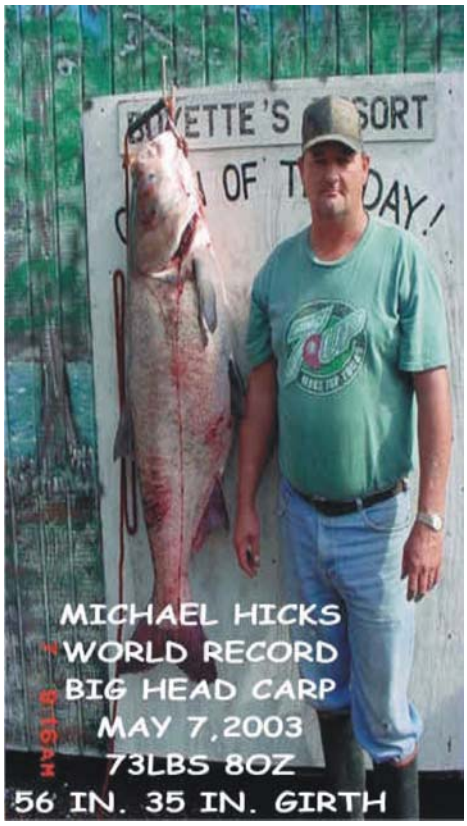
Record Bighead Carp Taken

On 5/7/03 Michael Hicks was surprised when he snagged onto what is being called the "world record bighead carp" The big fish weighed in at 73.5 lbs. and measured 56 in. in length and 30 in. in girth (see photo). Mr. Hicks was fishing below the weir (dam) at Reelfoot Lake, TN when he caught the monster. Since the bighead carp is a plankton feeder, they are usually taken by snagging or by accident when fishing for gamefish species.

The Reelfoot weir spills into the Forked Deer River in Tennessee, and from there, a short distance downstream, the Forked Deer flows directly into the Mississippi River. Fishers can expect to see more of these large Asian carp taken all over the Mississippi River Basin as these alien, invasive species continue to spread northward throughout the Basin from southern fish farming states. These are the same alien nuisance fish that now threaten to invade the Great Lakes. In fact, commercial fisherman are now reporting bighead carp in the 60 pound range as "common" in Pool 26 of the Mississippi River just north of St. Louis.

Readers will also recall the 31 in. black carp reported in the last issue of River Crossings as being taken by a commercial fisherman from Horseshoe Lake near the Mississippi/Ohio River confluence. There are four Asian carp species (bighead, silver, grass and black) now reported in the Mississippi River Basin. All were imported into the U.S. by and for the commercial fish farming industry, and all are presumed to have escaped to the wild from fish rearing ponds on these farms.

As insurance against such future escapes, one of our readers has suggested imposing a "bonding system" on persons owning these fish in order to hold them accountable should the fish escape. Under such a system, anyone wanting to use such potentially threatening fish would be required to double tag the fish using a PIT tag and a coded wire tag ,and to register a genetic sample of the fish through the U.S. Fish and Wildlife Service. Use of the PIT tag would provide a detailed record of the



origin of each individual fish that has the potential of entering the system. Owners or producers should also be required to post a sizeable bond that would be lost if one of their fish escaped and showed up in a public water body. Such a penalty system might make fish owners pay closer attention to how they are handling these potentially harmful fish. Biologists have been told by more than one person in the aquaculture industry that black carp cannot escape from their facilities. If this is true, our reader says, then these fish owners shouldn't object to being held accountable.

As the situation is now, no one can trace these escaped fish to their exact origin. And in the case of the black carp taken in March at Horseshoe Lake, it was reportedly suggested by a commercial fish farmer that the carp was probably intentionally released into Horseshoe Lake by a fish and wildlife biologist. The suggested bonding and accountability system would help put an end to such irresponsible accusations.

State Record Alligator Gar Taken

On 5/3/03, Earl Stafford of Natchez, MS landed an alligator gar that measured 7' 11.5" in total length and weighed 215 lbs. The girth of the giant fish measured 41 1/8". Mr. Stafford caught the giant fish on a custom jig on the Mississippi River. He and Steve Satchfield, owner of *The Natchez Seafood Company*, are making provisions to have the fish mounted and displayed at the fish market.

The alligator gar is native to the lower Mississippi, Arkansas, White and Ohio river drainages, and historically ranged as far upstream as Missouri, Oklahoma and Indiana. However, the fish is now quite uncommon due, in large part, to habitat loss from navigation and flood control developments.

This fish is the first State of Mississippi Freshwater Record alligator gar (caught using sport fishing gear). It is also the first documentation of a large alligator gar taken from the Mississippi River adjacent to Mississippi in the last 15 years. Satchfield said that Mr. Stafford was using 50 pound test line. If so, upon verification, this fish will set the national record in that line class and be the second heaviest alligator gar registered by the *National Freshwater Fishing Hall of Fame*.

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Ten Most Endangered Rivers

The 2003 list of America's Most Endangered rivers, as designated by the river advocacy group, *American Rivers*, includes the Big Sunflower (MS) and Platte (CO, WY and NE) in the Mississippi River Basin. Other rivers making the list include the Klamath (CA, OR), Ipswich (MA), Gunnison (CO), Rio Grande (NM), Mattaponi (VA), Snake (WY, ID, OR and WA), Tallapoosa (GA and AL), and Trinity (TX). Brief descriptions of the problems facing these rivers (in ranked order) follow:

The Big Sunflower River - The Big Sunflower river meanders through the ecologically rich and sparsely populated lowlands of northwest Mississippi. Near Vicksburg, it joins the Yazoo River, which empties into the Mississippi River a short distance downstream. Agriculture drives the region's economy, with soybeans and cotton as the primary crops, but due to chronic surpluses, *American Rivers* says, these crops are profitable only through federal price supports. In just one county along the river, 330 recipients received more than $64 million in federal farm subsidies between 1996 and 2001. But despite extensive clearing for agriculture, the basin retains vast areas of rich wetlands and bottomland hardwood forests that teem with wildlife and are an important destination for wintering waterfowl and other migratory birds. Recognizing the area's importance for migratory birds, substantial public investments have been made in acquiring two national wildlife refuges and one national forest. Additionally, some $30 million has been spent enrolling more than 31,000 acres of private lands in voluntary conservation programs. The Big Sunflower is also home to one of the world's most abundant native mussel beds and some 55 species of fish. The endangered pondberry, one of the world's rarest shrubs, is found on the river's banks.

In February 2003, Congress approved a $10 million down payment on the $181 million Yazoo Pumps Project before the Corps of Engineers had even completed the necessary environmental and economic studies. The Yazoo Pumps would be the largest hydraulic pumping plant ever built, siphoning up to 6 million gallons of water per minute out of the basin through which the Big Sunflower, three other rivers, and their tributaries flow. The massive suction of the pumps would be felt in every creek and stream within a 1,450 $mi.^2$ area with catastrophic results. More than 200,000 acres — 300 $mi.^2$ — of ecologically significant wetlands would be drained and damaged, undoing decades of effort and tens of millions of tax dollars spent restoring and protecting habitats in the region.

Although proponents loudly tout residential flood protection as the rationale for the project, according to *American Rivers* the Corps acknowledges that more than 80% of the purported economic benefits would come from increased soybean and cotton output. An independent study commissioned by the EPA concluded that the pumps would do nothing more than "help land owners grow crops on land that is farmed only to earn farm subsidy payments." This same study concluded that the Corps overstated just the agricultural benefits by $144 million — more than 75% of the estimated cost to build the pumps.

A second project at issue in the Big Sunflower River involves $62 million worth of dredging that would impact 104 miles of the riverbed in order to further accelerate drainage in the watershed. This dredging would devastate the river's instream habitat,

destroy at least 43% of the river's abundant mussel beds, and damage more than 3,600 acres of wetlands. It would also stir up pesticides in the river bed endangering the health of local residents who eat fish caught from the river. The project could also potentially increase flooding problems downstream. Despite these risks, project opponents point out that dredging the Big Sunflower River will not spare a single acre from flooding. It will merely reduce the frequency and duration of floods that will continue to occur on 55,000 acres of sparsely populated farmland. They say that effective flood damage reduction could be achieved at far less cost to taxpayers and the environment through purchase of conservation easements and targeted flood protection for the few residences and businesses in the area.

Although Congress and the Corps appear determined to proceed with the Yazoo Pumps, the funding bill passed earlier this year did not exempt the project from environmental law. *American Rivers* points out that the Bush administration has talked tough about the need for fiscal discipline and says it is committed to protecting wetlands, so *American Rivers* says the EPA should use its authority under the Clean Water Act to veto the Yazoo Pumps. Although the EPA has asserted this prerogative only 11 times, the tremendous ecological damage, the ready availability of alternatives to protect homes, and the misuse of public funds provide ample rationale. With endangered species living in the area harmed by both projects, including two national wildlife refuges, and the incredible diversity of other fish and wildlife at risk, *American Rivers* says that the U.S. Fish and Wildlife Service should assert its Endangered Species Act and other authorities to the fullest extent possible. They state further that the State of Mississippi should deny the necessary Clean Water Act certifications for both the Yazoo Pumps and the Big Sunflower dredging project. One certification granted for the Big Sunflower dredging project already has been thrown out by the Mississippi Supreme Court.

During the next 12 months, Corps officials in Vicksburg will accept public comments on both the final Yazoo Pumps proposal and revised draft proposal for the Big Sunflower dredging project. Members of the public can use these and other opportunities to speak out and encourage state and federal agencies to protect the river, and to call on Congress to exercise fiscal restraint with regard to these two ecologically damaging projects.

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Klamath River – The Klamath River flows from the foot of the Cascade Mountains on the California-Oregon border, and winds southwest into California. After passing through five hydropower dams, it reaches the Pacific Ocean south of Crescent City. More than 75% of the birds migrating on the Pacific Flyway feed or rest in the upper basin, and the largest population of bald eagles in the lower 48 states winters in several national wildlife refuges there. The upper Klamath basin has been called the "Everglades of the West." However, almost

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80% of the upper basin's wetlands have been converted to grow potatoes, alfalfa, and hay, including nearly 23,000 acres on the Tule Lake and Lower Klamath National Wildlife refuges. Irrigation withdrawals and polluted farm runoff combine to make portions of the watershed among the most degraded in Oregon. Diversions from three Klamath River tributaries (Trinity, Shasta, and Scott rivers) exacerbate water shortages. Klamath River salmon runs were once the third-largest in the nation, but have fallen to just 8% of historic numbers. Coho salmon are so diminished that they are protected under the Endangered Species Act.

In September 2002, poor river conditions killed more than 33,000 salmon and steelhead returning to spawn, including hundreds of imperiled coho salmon. This was the worst salmon die-off in the basin's history, including tribal oral histories going back more than 1,000 years. Additionally, thousands of commercial fishing jobs and $75 million in annual income have disappeared, with many remaining jobs at risk.

Irrigation withdrawals in the river's headwaters are compounded by the presence of five hydropower dams between the agricultural basin and the coast. The dam closest to the river mouth lacks fish passage devices and blocks access to more than 100 miles of salmon and steelhead spawning habitat. If current management practices are maintained, more fish kills can be expected. A concerted effort is needed to better manage irrigation in order to return water back to the Klamath River.

The White House-appointed Klamath River Basin Federal Working Group (KRBFWG) is due to present proposals for resolving the conflict by September 2003. *American Rivers* says that water supply and demand need to be brought back into balance by offering fair prices for water to willing sellers, and that commercial farming on national wildlife refuges needs to end in order to free up water for the Lower River. *American Rivers* argues further that the U.S. Bureau of Reclamation plan should be scrapped, and that new operations should be based on the so-called *Hardy and Addle Phase II Study*. That report, prepared by the Department of the Interior in cooperation with state and tribal biologists, recommends more water for salmon. They say further that Congress should pass Rep. Mike Thompson's (D/CA) Klamath River Basin Restoration and Emergency Assistance Act. This bill would authorize funds for water conservation and habitat restoration projects and provide compensation for communities affected by the September 2002 salmon kill. The bill also would establish a *Klamath Basin Restoration Task Force* of conservationists, fishermen, tribal representatives, and farmers to oversee water conservation and restoration activities.

The future of the Klamath River dams rests on the outcome of a relicensing process by the Federal Energy Regulatory Commission, which is already underway. *American Rivers* argues that *Pacifi-Corp*, the utility that owns these dams, should commit to installing fish passage facilities or removing dams to open up blocked spawning habitat, and should also implement other measures to improve water quality in the river when it files its formal license application this year.

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Ipswich River - The Ipswich River drains a 155 mi.^{2} watershed on the coastal plain of northeastern Massachusetts. The spring-fed river winds more than 40 miles through maple forests, swamps, and rapidly urbanizing areas from its headwaters to the Atlantic Ocean. Captain John Smith, an early explorer, praised the Ipswich River for its abundant runs of smelt, herring, shad, Atlantic salmon, and other species. Those fisheries were largely decimated by dam construction in the 1800's. In more recent years, excessive withdrawals of the river's water for municipal consumption regularly leave portions of the river dry, while other reaches are plagued with low water levels, unnaturally high temperatures, and low dissolved oxygen levels. Brook trout and fallfish have largely disappeared from the upper basin, and the Ipswich is currently dominated by three fish species that can tolerate these harsh conditions — redfin pickerel, American eel, and pumpkinseed. Despite the river's failing health, several rare and endangered species still call the Ipswich home, including the bridle shiner, least tern, piping plover, and four species of salamanders. Massachusetts' Great Marsh embraces the mouth of the Ipswich, and is an important stopover for migratory birds along the Atlantic Flyway.

Excessive municipal water withdrawals and pumping of nearby groundwater have caused the Ipswich to be widely regarded as the most flow-stressed river in the Northeast. More than 330,000 residents and thousands of businesses withdraw up to 35 million gallons per day from River. Because two thirds of these consumers live outside of the Ipswich River basin, between 20 and 25 million gallons never return to the watershed, producing a major water deficit. This causes the river to actually flow backwards in some locations, as water is pulled upstream. Water levels throughout the basin are perpetually low in the summer, and some river reaches run dry every single year, resulting in fish kills and other ecological damages.

The Ipswich River and several of its tributaries are listed as "impaired waters" by the Massachusetts Department of Environmental Protection (DEP). Low summer dissolved oxygen levels make the river unsuitable for most aquatic life, and may contribute to elevated levels of the toxin methyl mercury. In September 2002, all-time lows were noted on stream gauges — flows had fallen to less than 1% of recommended levels.

The outlook for the Ipswich is bleak unless the state of Massachusetts acts to reduce consumption and leave more water in the river. *American Rivers* says that water users need to be required to meet stringent permit conditions and adopt more effective water conservation measures. These include prohibiting lawn watering and limiting the use of certain wells during extreme low-flow periods, and reducing the amount of water" exported" from the basin via sewers. Roof drainage should also be captured in cisterns for irrigation use, and the region's storm sewers need to be altered to increase groundwater recharge. Water conserved through these measures should be left in the river. Additionally, legislation is needed to give priority to the Ipswich River in a statewide program that would provides funding, technical assistance, and guidelines to improve water efficiency.

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Gunnison River - From its headwaters along the Continental Divide to its confluence with the Colorado River near Grand Junction, the Gunnison River drains nearly 8,000 mi.^{2} of rural western Colorado. Three dams operated by the U.S. Bureau of Reclamation (BOR) just upstream of the *Black Canyon of the Gunnison National Monument* have severely altered natural river flows, and several of its fish species are listed under the Endangered Species Act. The Aspinall Unit, as the dams are collectively known, inundate more than 40 miles of prime native trout waters to allow more consistent control of the river's water for irrigation and to generate hydropower. Although the Aspinall Unit also is charged with protecting fish, wildlife and recreation, the dams seldom have provided the river or its fishery with appropriate flows when they are most needed.

In 1978, a Colorado water court ruled that the federal government is entitled to a "federal reserved water right," but did not specify how much water was to be included in that right. Instead, the court charged the government with determining the flow needed to "conserve and maintain in an unimpaired condition the scenic, aesthetic, natural, and historic objects of the (national) monument, as well as [its] wildlife." In January 2001, the Clinton administration's Department of the Interior (DOI) opened proceedings to quantify that right, calling for more natural river flows, including year-round minimum flows and periodic higher flows in spring and early summer. These flows were intended to protect the scenic, ecological, and recreational values of the national monument, and help preserve four endangered fish species in the Gunnison River and in the Colorado River farther downstream.

American Rivers says that the Bush administration's DOI now has substantially different priorities. It is signaling that it will reverse the Clinton-era effort and instead open the door for substantial new withdrawals from the Gunnison River upstream of the National Monument. Although the monument's water right is retroactive to 1933, DOI officials have signaled they will subordinate the claim for the monument to irrigators and municipalities with more junior rights, including some rights that have yet to be established. DOI has also indicated that it may not reduce total deliveries from the Aspinall Unit to provide water for the Black Canyon, although the monument's rights are more than 20 years senior. This concession is of particular concern because municipalities outside of Denver are hoping to purchase as much as 240,000 acre feet of Aspinall Unit water for delivery across the Continental Divide to fuel sprawl development. Though legally the monument's water right is entitled to precedence over the Aspinall Unit, under the scenario suggested by the Bush administration, the water that is so important to the health of the monument could be removed from the river before it ever reaches the Black Canyon. This would leave the Gunnison River with less water than it has now, setting a precedent that could be far reaching. There are

dozens of national parks, forests, wildlife refuges, and Indian reservations in the West with reserved rights yet to be quantified.

In the coming months, DOI will finalize its position in Colorado water court quantifying the Black Canyon National Monument's federal reserved water right. *American Rivers* says that the public should urge the Bush administration to claim enough water now to permanently protect the monument, without having to buy or beg for more water later. An insufficient claim from DOI would squander the monument's legal rights and clear the path for suburbs outside Denver to grab the river's water. *American Rivers* says that DOI should base its claim on the same body of science that supported the initial 2001 quantification application.

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Rio Grande River - The Rio Grande flows from the mountains of southern Colorado through nearly 2,000 miles of the arid Southwest. On its way to the Gulf of Mexico at Brownsville, TX, the Rio Grande drains 11% of the continental United States. It averages only about one-fifth as much water as its neighbor, the Colorado River, and experiences more frequent droughts. Diversions for municipal and agricultural use already claim nearly 95% of the Rio Grande's average annual flow. Parts of the river have run dry in four of the past five years, and the river failed to reach the Gulf of Mexico for the first time in 2001. The Rio Grande silvery minnow in New Mexico is the final survivor of a suite of small native minnow species once found throughout the river. Reduced to just 5% of its former range, the last minnow may soon be driven from the river by the growing demand for water in the face of drought.

Albuquerque, NM and Brownsville, TX are poised to increase Rio Grande water withdrawals to augment their existing municipal supplies. Albuquerque has, until recently, relied entirely on groundwater — and its water use is among the highest in the basin at 209 gallons per person per day. By comparison, El Paso residents consume 159 gallons per day. Albuquerque intends to get up to 75% of its water from the Rio Grande and San Juan rivers by 2006, removing up to 100,000 acre-feet of water per year and returning only half to the river as effluent. If necessary, New Mexico's political leaders have vowed a full court press to push the endangered silvery minnow out of the city's way. Further downstream, the city of Brownsville intends to build a dam that would create a new reservoir near the river's mouth. If completed, the dam would damage commercial fisheries in the Gulf of Mexico by reducing freshwater entering the estuary. Finally, the U.S. Army Corps of Engineers (Corps) and U.S. Bureau of Reclamation (BOR) are preparing a new joint operations plan for their dams and reservoirs that control water levels throughout the upper Rio Grande basin. Although the law obligates both agencies to protect endangered river species while providing irrigation and flood control services, agricultural interests are lobbying hard against any reductions in irrigation water deliveries. BOR has refused to consider one of the most degraded stretches of the river in some of the restoration proposals now under consideration.

Several key decisions will be made in the coming 12 months that could dramatically improve — or worsen — the outlook for the river. The city of Albuquerque must obtain permits from BOR, the Corps, the U.S. Fish and Wildlife Service (FWS), and the New Mexico State Engineer before tapping the Rio Grande for municipal supplies. The city of Brownsville will seek a permit from the Corps for its proposed dam this year. *American Rivers* argues that the Corps, BOR, and FWS should resist pressure to preserve water deliveries at the expense of the river and its endangered wildlife. Before finalizing new operations for their Rio Grande basin projects, the agencies should review the forthcoming 10-year plan for silvery minnow recovery from the multiagency Endangered Species Act Collaborative Program. This group should provide recommendations that are specific enough for the Corps and BOR to implement immediately.

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Mattaponi River - The Mattaponi River flows 85 miles across Virginia's coastal plain. It joins the Pamunkey River at the town of West Point to form the York River, which empties into the Chesapeake Bay some 60 miles later. According to *The Nature Conservancy*, the confluence of these rivers forms the "heart of the most pristine freshwater complex on the Atlantic coast." The Mattaponi passes numerous lush tidal wetlands on its way to the bay, providing prime spawning and nursery habitat for migratory fish species, such as striped bass, American shad, and blueback herring. The river supports healthy sport, commercial, and subsistence fisheries.

Since the early 1990s, the city of Newport News has been seeking authorization to construct the King William Reservoir on Cohoke Creek between the Mattaponi and Pamunkey rivers. The project would pump up to 75 million gallons of water per day from the Mattaponi River, store it in the reservoir, and then pipe it to the cities of Newport News, Hampton, Poquoson and Williamsburg, and the counties of York and James City. The King William Reservoir would destroy at least 437 acres of sensitive wetlands — the largest permitted wetland loss in Virginia since passage of the 1972 Clean Water Act — along with 21 miles of free-flowing streams and nearly 1,100 acres of upland habitat. The massive water withdrawal could impede shad recovery by raising salinity levels and altering the river's ecology. The U.S. Fish and Wildlife Service (FWS) concluded that "the King William Reservoir...will result in substantial and unacceptable impacts to aquatic resources of national importance."

The Corps' Norfolk District recommended denial of the permit for the reservoir in March 2001, concluding that Newport News "has not demonstrated a sufficient need for the project," and that "other less environmentally damaging practicable alternatives are available." But then-Governor James Gilmore intervened by appealing the decision to the Corps' North Atlantic Division, and in October 2002, Division officials reversed the District's decision to deny the permit. However, the proposed project must clear several hurdles in the next 12 months before reservoir

construction can begin. The public will have several opportunities to provide input to the Environmental Protection Agency (EPA), FWS, and state agencies. If the Corps does ultimately issue a permit, *American Rivers* urges the EPA and state agencies to deny the project.

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Platte River - Originating high in the Rocky Mountains of Wyoming and Colorado, the North and South Platte rivers meet in western Nebraska to form the mainstem of the Platte, which then flows east roughly 300 miles to empty into the Missouri River near Omaha. The Big Bend Reach in Nebraska is the heart of the Central Flyway for migratory birds. Two imperiled birds, the piping plover and interior least tern, nest along the Platte's sandy channels. Flows in the central Platte are also important for the endangered pallid sturgeon, which are believed to spawn in the lower river. The river flows through farm country where much of its flow is diverted to irrigate corn and soybeans. Three large reservoirs and many other smaller impoundments have reduced river flows to less than half of historic levels, and robbed it of sandy sediment that once built sandbar habitat. Spring pulse flows have been eliminated, and vegetation is taking over many parts of the active channel that once provided ideal migratory habitat for cranes and nesting habitat for terns and plovers.

The severe drought that has gripped the western United States during the last two years has been particularly harsh in the Platte River basin. Momentum is building toward new surface and groundwater withdrawals that would further deplete river flows. Irrigation agencies have dusted off old plans for new dams and reservoirs, and the state of Nebraska continues to allow unchecked drilling of irrigation wells in most of the Platte River basin. Some agricultural interests believe that an additional 1 million acres of farmland could be made more productive by beginning groundwater irrigation. One pro-irrigation group has gone so far as to openly call for the three basin states to scrap ecological flow targets in the Platte River. Officials from all three basin states, most notably Colorado, have called for additional water contributions from "forest management." This is a euphemism for clearcutting large swaths of the national forests along the river's headwaters to increase the amount of runoff reaching the river. This theory (See *River Crossings* Vol. 11. No. 6) has been widely discredited, as it increases flooding while reducing the amount of water reaching the river through groundwater. Not only would increased clearcutting damage the ecological health of the forest, any extra water reaching the river would carry a heavy sediment load that could smother many of Wyoming and Colorado's "gold medal" trout streams.

This fall, the Department of the Interior (DOI) is expected to release a Draft Environmental Impact Statement (DEIS) on a $150 million plan for managing the tri-state Platte River Basin. This forthcoming document is an important step towards executing a Cooperative Agreement signed by DOI and the three Platte River basin states in 1997. Some steps called for in the Agreement, such as protecting and restoring 10,000 acres of riparian habitat and establishing a research and monitoring program for imperiled river species, are straightforward. However, the persistent drought will test the states' continued commitment to other steps, such as annually securing up to 150,000 acre feet of water to better meet instream flows, and offsetting any new water uses in the basin with conservation measures to maintain river flows. The release of the DEIS will be followed by a series of hearings that will push the Cooperative Agreement plan into the public spotlight and spur substantial debate in all three states over its provisions.

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Snake River - From its headwaters in the Rocky Mountains of Wyoming, the Snake River arcs through southern Idaho before turning north into Hells Canyon, the deepest canyon in North America. For 100 miles, the river separates Idaho from Oregon before entering the state of Washington where it flows into the Columbia River. As the Columbia's largest tributary, the Snake once produced more salmon than any other in the basin. Historically, approximately 2 million salmon and steelhead trout returned each year to spawn in the river, traveling up to 900 miles from the ocean. Today's Snake River bears little resemblance to the river explored by Lewis and Clark in 1805. The upper reaches of Hells Canyon have been inundated behind three massive dams owned by *Idaho Power Company (IPC)*, and 140 miles of the lower Snake River have been submerged behind four federal dams. The Hells Canyon dams completely block salmon passage to upstream spawning grounds, with each federal dam killing between 5 and 15% of the fish attempting to pass, causing all remaining Snake River salmon runs to be listed under the Endangered Species Act (ESA).

The 2000 Federal Salmon Plan committed federal agencies to hundreds of actions to restore populations of imperiled salmon, but in 2001, citing drought and the California energy crunch, federal dam operators largely abandoned their salmon commitments. The survival rate for juvenile salmon fell to the lowest level since salmon were listed under the ESA. With recovery efforts faltering and river conditions hostile to salmon survival, the federal government continues to pour millions of dollars down the drain in an attempt to transport young fish around the dams in trucks and barges — these fish don't return to spawn in sufficient numbers to prevent further population declines. Meanwhile, IPC's Hells Canyon hydropower complex completely blocks salmon migration and alters the Snake's natural downstream flows and water temperatures. At this rate, *Trout Unlimited* forecasts that wild Snake River spring and summer Chinook salmon runs will be functionally extinct by 2016.

Several decisions looming in the next year will determine whether recovery efforts get on track. *American Rivers* argues that Congress should provide sufficient funding to the agencies to satisfy their recovery plan obligations and hold oversight hearings on their progress. They also argue that Congress should prepare for the likely failure of the current salmon recovery strategy, and pass the Salmon Planning Act, creating a "safety net" by authorizing federal agencies to remove the four Snake River dams if current recovery efforts fail. Additionally, they argue that the IPC should commit to building fish passage and temperature control structures, release flows to help fish migrate downstream, and mitigate for habitat inundated by its dams.

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Tallapoosa River - The Tallapoosa River has its origin in the southern Appalachian mountains in Georgia and flows southwest of Atlanta. Its headwater streams are among the most biologically rich in the world, boasting a remarkable collection of aquatic wildlife, particularly salamanders, freshwater mussels, and small, colorful fish known as darters. After crossing the Alabama border, the river winds south and west, passing through a series of hydropower dams before joining with the Coosa River near Montgomery. Here, the river has been subdued, and is now a workhorse for the *Alabama Power Company* (APC). APC's R.L. Harris dam already has transformed a section of the Tallapoosa River into an ecological desert, and more dams could be on the way as the sprawling Atlanta metro area seeks to develop municipal water supplies in the river's pristine headwaters. Unless APC reforms its hydropower operations and Georgia and Alabama take up the call to use their water more efficiently, the river's unparalleled assortment of aquatic wildlife is at risk.

According to *American Rivers,* the R.L. Harris Dam is arguably the most ecologically abusive hydroelectric project in the nation. Since its construction in1980, this facility has turned a 47-mile stretch of the Tallapoosa River on and off like a faucet, subjecting the river and downstream communities to increases in river flow from as low as zero to as great as 16,000 cfs in just minutes. During periods of low consumer demand for electricity, water levels below Harris Dam drop to the point where the river is no more than a collection of rocky pools. But local residents say APC can turn the river into a raging torrent in minutes, with oncoming waters resembling an oncoming train, so loud that it can be heard for several minutes before the water actually arrives. This daily back and forth between flood and drought has devastated the river's populations of fish and wildlife and continues to eat away at landowners' property along the river below the dam.

Up river, the Tallapoosa is threatened by a different kind of dam. The Tallapoosa's headwaters are within reach of the sprawling Atlanta metropolitan area, and Georgia officials are now pushing to build a new water supply dam on a small tributary. The West Georgia Project would pump water out of the Tallapoosa River into the tributary reservoir, which could then be piped to Atlanta. Not only would the project flood out a freshwater ecological wonder, it also would badly deplete water levels in the Tallapoosa by channeling return flows into another river basin.

The abusive operations of the R.L. Harris Dam violate the terms of the operating license issued to APC by the Federal Energy Regulatory Commission (FERC). Negotiation or FERC intervention are the only opportunities to restore more natural flows to the river and ensure that the Tallapoosa downstream of R.L.Harris Dam meets state water quality standards until 2030, when APC's current license expires. The fate of the West Georgia Project is intertwined in the outcome of trilateral negotiations between the states of Georgia, Alabama, and Florida. These states are facing a deadline to propose a new formula for water allocation in two shared river basins, including the Tallapoosa, by 6/30/03, followed by a 60-day period for public comment.

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Trinity River - The Trinity River gathers together smaller forks from the north and west of Fort Worth and Dallas, then turns south, reaching the Gulf of Mexico near Houston. The federal government has built more than a dozen dams on the Trinity and its tributaries upstream of Dallas, but the river is an important source of freshwater for Galveston Bay and drinking water for nearly 10 million residents in the river basin. The 8,500-acre Great Trinity Forest embraces much of the river as it flows through Dallas.

Following high waters in 1989 and 1990, the Corps dusted off a 1965 proposal to transform Dallas' downtown riverfront and turned it into the $140 million Dallas Floodway Extension Project, which proposes rerouting a portion of the riverbed into channels, extending the levees that protect the business district to protect residential neighborhoods, and cutting down 34,000 trees from the riverbank to develop flood drainage swales. Once the Dallas Floodway Extension is complete, the city of Dallas and the North Texas Tollway Authority intend to construct eight lanes of toll road within the Trinity River's floodplain. Although the Corps justifies the Project, in part, to protect minority neighborhoods along the river, residents of these neighborhoods have indicated that their preferred solution to periodic flooding is a voluntary buyout rather than new levees and freeways on their doorstep. The plans have been touted for economic development and traffic relief, but the agencies have yet to make a convincing argument for either. Dallas has plans to acquire approximately 2,500 acres of the forest as parkland. Although little money has been spent, the city envisions eventually developing walking footpaths, bike trails, and put-ins for canoes along the river.

If completed, the projects would have a number of adverse consequences for the Trinity River and the communities along it. In addition to destroying 34,000 trees in the Great Trinity Forest, realigning the river channel would damage much of the instream habitat. Further degradation of the forest and river would be caused by water exiting the floodway at high velocities, resulting in increased erosion and siltation. New levees could create a false sense of flood security and lure more residents and businesses into flood-prone areas. The floodway toll roads would transform a large portion of a remarkable urban refuge of peace and quiet into just another congested and polluted transportation artery.

An alternative to the Dallas Floodway Extension exists and has been endorsed by conservation organizations, taxpayer watchdog groups, and minority representatives. Key features include raising the current levees that protect the Dallas Central Business District, offering a voluntary buyout to flood-prone residents and businesses, and relocating the planned toll roads out of the floodplain. However, the Corps and the city of Dallas are determined to proceed, and the last remaining opportunities to stop the Dallas Floodway Extension and spare the Trinity River will come during the next 12 months.

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Mississippi Delta Sinking

Parts of coastal Louisiana and Mississippi could sink up to a foot over the next decade! Overall, the region will lose 15,000 mi.^{2} within the next 70 years, according to new research from the National Oceanic and Atmospheric Administration. The data, developed in collaboration with scientists from Louisiana State University and presented at the National Hurricane Conference in April, represents the most thorough research ever on land subsidence in the Mississippi River delta and gives the most accurate measurement of a significant ecological and human safety problem, the scientists said.

"We found that subsidence or loss of elevation ranges from 0.33 to 1.5 inches per year across south Louisiana as well as coastal Mississippi," said Roy Dokka, director of the *Center for Geoinformatics* at Louisiana State University. Dokka said the subsidence rates measured in the unpublished data are up to 200% greater than anything measured previously, although he concedes its difficult to make comparisons to old research.

According to the U.S. Geological Survey's Coastal and Marine Geology Program, the subsidence of the coastline, combined with relative sea-level rise, present the most pressing environmental and cultural issues facing the region. At three feet per century, the Mississippi River delta plain is currently experiencing the highest rate of relative sea-level rise of any region in the nation, USGS says.

Bob Morton, a research geologist with USGS, says the region was experiencing natural subsidence before people occupied the area, but human activities have dramatically accelerated the process. Oil and gas drilling is a likely factor, he said. "From a scientific standpoint the evidence is pretty compelling. You look at the oil and gas production curves over the last 70 years and they correlate pretty well with the subsidence curves. And the geologic history does not indicate why that area should subside so rapidly when it hadn't before." Morton said oil and gas drilling causes subsidence in several ways. The first is that drawing oil and gas up to the surface creates an area of low pressure underneath, causing the land to sink, often over a wide area. But oil and gas drilling also causes salts to shift along fault lines, causing sinking in more localized "hot spots."

Correlating with a decline in petroleum production in recent years, some researchers think subsidence has slowed in the Mississippi Delta since the 1980's. But the Louisiana coast still loses the equivalent of a football field every day to sinking land, rising water levels and erosion, said Jennifer Koss of NOAA's *Restoration Center*, which has been working on ways to confront the problem of coastal land loss. Although Louisiana has 40% of the coastal marshes in the continental U.S., it experiences about 80% of the nation's annual coastal wetland losses, according to agency statistics.

Because of the magnitude of the problem, most of the projects are undertaken on a broad scale. "Louisiana's land loss problem is immense, and only large-scale restoration efforts are going to make a dent in the erosion/subsidence rate," she said. To tackle the problem, federal, state and local agencies with coastal jurisdiction developed a plan earlier this year with strategies for mitigating the losses. "They put together *Coast 2050*, which is a document that puts forward a number of options for dealing with the problem," said USGS geologist Jack Kindinger. "Those options include rerouting the Mississippi to replace silt lost to erosion, restoring and nourishing beaches with sand from elsewhere and building rock-type structures around islands to prevent them from shrinking further."

Damon Franz, *Greenwire* 4/22/03

Missouri River Water Wars Continue

Missouri River managers and federal wildlife officials have reached a one-year compromise for operation of river dams that they hope will satisfy both upstream recreation interests and downstream barge operators while minimizing damage to endangered species. Key to the agreement was the willingness of the U.S. Fish and Wildlife Service (FWS) to allow the Army Corps of Engineers (Corps) to flood out a limited number of nests of endangered piping plovers and interior least terns. That would keep enough water flowing down the river this summer to support barge traffic.

Wildlife officials said they determined that the endangered shorebirds on the river could take a "one-time hit" without jeopardizing their long-term recovery. However, the decision was blasted by environmental groups who said it contradicted the FWS opinions over the last 13 years about what the endangered birds need to survive. "It is ironic that such a decision so offensive to the environment should be announced on Earth Day," said Tim Searchinger, an attorney for *Environmental Defense* in Washington.

The FWS has been pushing for more than a decade for the Corps to change its operation of four dams on the Missouri River. The agency has said that unless dam releases are altered to create more natural flows, the two endangered shorebirds and an endangered fish could disappear from the river basin. The FWS had originally given the Corps until this spring to put a new flow plan in place. That decision has since been put off until at least 2004, but the two agencies still needed to come to agreement for some type of operating plan for the river this year.

Reaching such an agreement proved to be a particularly difficult balancing act this year, when drought has left even less water to satisfy competing interests. Historically, the Corps had released as much water from Gavins Point as was needed to maintain a 9-foot channel for barge traffic throughout the spring and summer. That generally required the Corps to gradually increase dam release levels in summer as downstream tributaries dried up. But fishing and boating interests have opposed those steady release plans as taking too much water out of the Missouri's reservoirs in the Dakotas.

Last year this controversy landed in court with an injunction against such releases from North Dakota's Lake Sakakawea which is impounded by the Corps' Garrsion Dam. Then on 4/29/03 a state judge approved a temporary restraining order on the Corps, restricting the amount of water that can be released from Garrison Dam, one of six Corps' dams on the Missouri River. The order came in response to the North Dakota lawsuit, which claims the Corps' summer management plans for the Missouri River will lower Lake Sakakawea to the point where the water will warm and harm salmon,

walleye and other sport fish. "The survival of the fish is reliant on low releases," Assistant Attorney General Lyle Witham told the judge.

But now the Corps is calling for that order to be overturned because, according to Daniel Pinkston, Corps attorney, North Dakota cannot prove immediate damage to Lake Sakakawea's fishery. Pinkston also told a federal judge on May 13 that when the Corps crafts its annual Missouri River management plan, it has to consider not only recreation but navigation, irrigation,

water supply and power interests as well. "If the temporary restraining order remains in place, it may mean that the Corps fails to serve these other principles," he said. "We're put in an impossible position." Judge Dan Hovland said he would take the Corps' motion to dismiss the restraining order under advisement. Hovland said he is considering ordering mediation or appointing a special court official to examine the case and make recommendations on what should be done.

Meanwhile, South Dakota and Nebraska are intervening in the North Dakota lawsuit, one of nine such lawsuits that likely will determine long-term Missouri River operations. South Dakota Deputy Attorney General Charles McGuigan said if the restraining order remains, his state wants to ensure that the Corps does not draw down Lake Oahe levels to make up the difference. Lower water levels could harm smelt and walleye spawns in the lake, he said. South Dakota and North Dakota might have different worries, but the relief they are seeking is the same, McGuigan said. "Everything the Corps of Engineers does supports navigation" downstream, he said. "Give us equal treatment."

Nebraska officials are intervening in North Dakota's lawsuit because lower water releases upstream could hurt Nebraska's water supply, recreation and hydropower interests, said David Cookston, Nebraska assistant attorney general. "We're not here because of navigation benefits," Cookston said. Witham said studies have shown that upstream states have more to lose economically when water release levels are increased in the northern part of the river basin. Downstream interests dispute that.

In a separate lawsuit, five companies that provide or use barges on the Missouri River are suing to force the Corps to maintain water levels in the downstream shipping channel, which extends from Sioux City, Iowa, to St. Louis, Missouri.

On the lighter side, an editorial written by Mike Quinn for the *Bismarck Tribune* compared the situation in the Dakota's with a hypothetical incident that he described during the recent Iraq war. Quinn said in that case Defense Secretary Donald Rumsfeld called on the Corps' "Col. Drainmore" for assistance in draining a reservoir to prevent Saddam Hussein from blowing up a dam and flooding advancing American troops. The regular army, Quinn said, needed a way to drain the lake as quickly as possible in a stealthy manner. So to aid in this endeavor, "…the Corps is preparing barges that will be used to go up and down the river below Baghdad. Saddam will be told he must release water under the Corps' master manual to float the barges. The Corps assured the press that this deceptive tactic has already been tested in North Dakota and has proved effective".

According to Quinn, "Corps officials were asked what they would do if Saddam requested an update to the master manual. Col. Drainmore pointed out that governors in North Dakota have tried this tactic, and the Corps can assure a minimum delay of 12 years before anything would ever happen." Quinn said further that when "Asked if the people of Iraq would hate the Corps after they found out it was the Corps that drained the lake, Drainmore pointed out that the Corps specializes in dealing with adverse public reaction. In closing, the colonel pointed out that his organization has practiced the stealthy destruction of an economy for years in North Dakota, and his men are well-prepared to inflict massive economic damage on Iraq". "Ask anyone trying to make a living around Lake Sakakawea what we can do with a couple of barges on the Missouri," Drainmore said. Quinn is the owner of a charter sailing business in Hazen, ND.

Sources: Henry J. Cordes, *Omaha World Herald*, 4/23/03; *Omaha World Herald*, 5/15/03 and Mike Quinn, *Bismarck Tribune* Letter to the Editor, 4/8/03

Arkansas River Deepening Proposed

The Little Rock Corps of Engineers District is proposing to deepen the Arkansas River for navigation by (1) dredging the channel from nine to 12 feet deep, (2) raising the elevation of navigation pools to achieve the desired depth, or (3) widening channels such as on the Verdigris River. The Arkansas is a tributary to the lower Mississippi River, which currently provides for 12 foot navigation. Public meetings for the "Arkansas River Navigation Study Phase II" were held in mid May. The purpose of the meetings was to gather public input and to discuss preparation of an Environmental Impact Statement (EIS) for the proposed project. Preparation of an EIS will document environmental and socioeconomic effects and evaluate both the good and bad impacts anticipated to agriculture, hydropower, recreation, flood control, and the environment. The Corps is accepting written comments on the project until June 30.

Towing industry advocates argue that deepening the Arkansas River channel is necessary to increase efficiency. The study and prospects for a 12-foot channel received support at a recent McClelland-Kerr Arkansas River Navigation Conference, co-sponsored by the Corps' Little Rock and Tulsa Districts and the *Arkansas-Oklahoma Port Operators Association* (AOPOA). Robert Portiss, Tulsa Port of Catoosa director said, "We owe it to ourselves to get maximum productivity out of this system, to get comparable productivity from the Arkansas system to that we have on the Mississippi River." "It appears that it will cost approximately $80 million to bring the entire system to 12-foot," Portiss said. "Now is the time to do it, we've got to move on this. Nationwide, the economy is slow and this project will contribute to the productivity of our region. We don't dare wait" to proceed with the 12-foot channel, he said.

Conferees rejected a proposal floated to Congress to authorize a 12-foot channel in Arkansas, while retaining the nine-foot

depth in Oklahoma. "If we went to 12 feet in Arkansas and stayed at nine feet in Oklahoma, I believe it would hurt the system," Col. Robert L. Suthard, Tulsa District engineer, told AOPOA members. "Don't change it at the borders, because if you do you threaten the benefit/cost ratios of the entire system," he said. "Look at it as one system all the way from Tulsa to the Mississippi River."

Phase I of the study involves evaluation of means for more efficiently handling high water flows out of Oklahoma reservoirs with concurrent benefits to navigation, said Ron Carman, study project manager. A Phase I draft report and EIS are expected to be released for public review and comment in August 2003, with a final report expected by April 2004. The schedule for Phase II, investigating channel deepening on the system and widening the Verdigris River, includes the release of a draft report and EIS in August 2004, with Corps approval of the report and EIS in March 2005.

Biologists and conservation interests are concerned that the project could significantly alter the Arkansas River's ecosystem and impact its ecological resources. This is the same scenario that Upper Mississippi and Missouri River biologists have faced for decades:

- calls come in from navigation interests to deepen the channel (at great public expense) to increase navigation efficiency,
- as projects proceed, wetlands and aquatic resources are devastated when dredged materials are removed from channel beds and deposited on adjacent riparian wetlands and floodplains (see photos at right),
- alteration of reservoir and riverine water levels and flows occur as measures are taken to ensure that adequate water is provided during periods of drought to float the barges, and
- native fish and wildlife species that rely on wetlands and historic flow conditions are devastated.

Economists and taxpayers are concerned that the cost/benefits of any Corps' project may be inflated, as demonstrated in recent years by other Corps projects around the country, and that the ultimate project cost may be grossly underestimated by project planners who fail to account for rising costs and inflation. All of these concerns need to be closely evaluated in the public interest.

Source: *Waterways Journal*, Vol 117, No. 6, 5/12/03

Upper Mississippi River dredging nightmares of the 1960's and 70's.

Republican River Lawsuit Settled

The U.S. Supreme Court in mid May approved the settlement of a long-running dispute between Nebraska and Kansas over use of water from the Republican River. The states announced the settlement in December, but it was subject to review by the court. The Republican River flows out of northeast Colorado across the very northwest tip of Kansas, then meanders across southwestern Nebraska before re-entering Kansas just south of Superior, NE.

Nebraska will pay no money damages as a result of the settlement. Kansas had once estimated that Nebraska might have to pay as much as $100 million in damages. Nebraska also will not have to allocate more water to Kansas, but it will have to be careful about adding any new irrigation wells that could deplete the river. Under the agreement, Nebraska will be able to maintain (for the most part) its existing use of water from the river. Deciding how much water each state gets will now be figured using a five-year average, except in drought years or years when flooding occurs. In drought years, a two- or three-year average will be used.

Kansas filed its lawsuit in 1998, accusing Nebraska of allowing irrigators to divert more than their legal share of the river's water. Kansas argued that Nebraska breached a compact by allowing the proliferation and use of thousands of wells connected to the river and its tributaries along the state's southern border. The 1943 compact agreement spelled out distribution of the Republican River's waters, with Nebraska getting 49%, Kansas 40% and Colorado 11%. Nebraska argued that groundwater use is not regulated by the compact, which also was signed by Colorado, because it was signed before deep-well irrigation was used in the river basin.

Special Master Vincent McKusick, who was appointed by the high court to hear the case, said earlier that he would not count water pumped from wells before 1994 in deciding the case because the three states had already worked out an agreement regarding that water. Nebraska argued that Kansas has received its full allocation of water from the Republican River each year with the exception of 1992, when there was a drought.

Last year, the Lower Republican Natural Resources District (NRD) prohibited farmers from drilling any large wells for at least three years. Similar moratoriums were

implemented earlier in the Upper Republican and Middle Republican NRDs. Those moratoriums could be modified in the future if it can be demonstrated that new wells would not deplete flows in the river.

Kevin O'Hanlon, *AP/San Jose Mercury News*, 5/19/03

Recreational Water Rights Decision

The Colorado Supreme Court handed the state's recreational water users a historic victory in mid May when it upheld new water rights for the state's recreation and tourism. It's a key victory because it treats water for recreation just like any other water right," said Glenn Porzak, Golden's water attorney. In a legal battle that pitted wheat fields and peach trees, flush toilets and bluegrass lawns against fly fishing and kayaking, the state's high court decision was split at 3-3 and couldn't decide. That means a lower court ruling which approved water rights for kayak courses in Golden, Vail and Breckenridge will stand.

"The fact of the matter is that the state was trying to get the Supreme Court to utter a pronouncement that treated recreation as a second-class use and they didn't get that. So it's a major victory in that regard," Porzak said. While the Supreme Court's deadlock applied specifically to Golden, Vail and Breckenridge, it also allows recreational water rights for any government in Colorado. Kayakers and fly fishers now are equal under state water law with farmers, industrialists and developers of subdivisions, he said. But Melinda Kassen, a lawyer for *Trout Unlimited*, said that because the court ruled on a deadlocked vote without issuing an opinion, the topic is still ripe for a Supreme Court clarification involving future disputes.

The cases had been viewed as a modern-day water war that would help determine whether new economic desires for recreation would win out over old state interests concerned with development. The Colorado Attorney General's Office had fought the three communities' recreational arguments, saying that water-court judges Jonathan Hays and Tom Ossola had turned Colorado water law on its head by giving the communities water they shouldn't have. The state appealed to the Colorado Supreme Court, contending that more traditional uses of water, from cornfields to laundry, should have priority over the cities' kayak water rights. The state argued that before such a diversion could take place the water either had to be physically removed from the stream or had to be impounded behind a dam.

But the communities argued otherwise, calling the kayaking courses extremely beneficial. Last fall, the justices were told that during its first three years in existence, the world-class Clear Creek Whitewater Park, with its accompanying spectator seating, had attracted 45,000 users and pumped $23 million into Golden's economy. The course was built around 4,000 tons of boulders strategically placed to create waves, holes and eddies.

Lawyer Anne Castle representing Pueblo in water-rights matters, said the southern Colorado city was extremely interested in Monday's outcome. Recreational use of waterways in Colorado will help several cities stimulate their economies, she said. Pueblo is working on redevelopment projects along the Arkansas River with plans to make the water accessible to boaters and nature lovers, she said. "The recreational water right is one means we now have of protecting those values," she said. Although boating and fishing always have occurred on Colorado's rivers, streams and reservoirs, those were only "incidental" uses of water that was there for other reasons, Ken Lane, spokesman for Colorado Attorney General Ken Salazar, said. Now those recreational uses are recognized as legal water-use rights on their own.

Lane said the state opposed recreational water rights partly from fear that they might prevent it from sharing as much water with other states as it legally must. However, he said that the court's ruling applies only to the three cases and does not set a statewide precedent. But Porzak strongly disagreed. "That's the importance of the decision today – the water courts' decisions were upheld," Porzak said. "You have two different water courts involved. As you go forward in the future, it's going to be a case-by-case determination based on the particular facts, just like every other water right. "It's ultimately the water court which will make the ruling just like other water rights," he said.

The 2001 law gives a strong advisory role to the Colorado Water Conservation Board (CWCB), which had opposed the kayak rights, in all future recreational water rights cases. "Our position was that these were not valid water rights," Rod Kuharich, director of the CWCB, said. "I don't know that a split decision by the Supreme Court is a clear victory for either side." The 2001 law also instructs state judges to grant recreational rights only for minimal quantities of water. "But it's still the water court's decision," Porzak said.

"The importance is that what the state was seeking by their appeals was to get some pronouncement out of the Supreme Court that water for recreation was a second-class use and should be treated differently, and it didn't," Porzak said. In fact, the Supreme Court made no pronouncement at all.

The issue drew more than 40 friend-of-the-court briefs. Interested parties included cities, towns, counties, the *Colorado Farm Bureau*, water districts, *Trout Unlimited*, reservoir and ditch companies, the *Colorado River Outfitters Association*, citizen groups and *Vail Resorts Inc*. Twenty-four supported kayak water rights and 19 took the state's side in opposing them.

Sources: Howard Pankratz and Ann Schrader, *Denver Post*, 5/20/03; and Karen Abbott and Charley Able, *Rocky Mountain News*, 5/20/03

Indiana Livestock Confinement Regs to Use Federal Permits

Under a court order that took effect on May 14, Indiana farms that keep thousands of animals confined must begin applying for federal permits designed to protect rivers and streams. The permits essentially certify that confined animal feeding operations are built and operated to prevent any spills of manure or other animal waste into waterways, said Timothy Method, deputy commissioner of the Indiana Department of Environmental Management (IDEM). That is different from other industries, whose permits allow some waste to be discharged.

Previously, farms operated under state laws, but last September, U.S. District Judge Sarah Evans Barker ordered the state to begin issuing the federal permits or risk losing its power to oversee federal clean water rules. The permits have drawn mixed reactions. Indiana officials have said the state program already adequately protected Indiana waterways. Environmental groups fear the rule implementing the program will limit the public's ability to comment on permits and that the state will not do

enough to document whether farm runoff is harming waterways.

Under the rule, passed by the Indiana Water Pollution Control Board in early May, most of the state's 500 largest confined animal feeding operations must apply for a general permit by July 14. As part of the process, they must submit information about the operation, including how manure lagoons are built and how the waste is disposed of. But no public hearings will be held on the permits, which will take effect 90 days after they are requested unless there is an objection. State officials are still working out plans for notifying neighbors that a permit has been sought.

"We are concerned about general permits being issued without neighbors knowing," said Rae Schnapp of the *Hoosier Environmental Council*. "Adjoining property owners would be the ones who know if there has been a spill or not." Method said

officials expect to have notification plans in place before the final version of the rule is passed, which likely won't occur until after the July 14 deadline for applications.

The state will hold public hearings if a farm is required to get an individual permit, which would require greater oversight, or if there is an application for a new farm. About 18 feeding operations with a history of pollution discharges must get individual permits. Permit holders also must submit an annual report to the state, and the environment agency may inspect farms, said Terry Fleck, executive vice president of the *Indiana Pork Advocacy Council*. "There is nothing stopping public input," Fleck said. "If neighbors feel issues need to be addressed, IDEM has full authority to inspect anytime and follow up."

Schnapp and other environmentalists said the state permit should require that waterways near the farms be tested to ensure there is no manure runoff. But Method and Fleck said there should be no reason to test the water because the permits do not allow any discharges, and most farms operate with no problems. Environmentalists said that problems at *Pohlmann Hog Farms*, which had the worst record of pollution violations in the state, prove violations occur even if a farm is supposed to follow the rules. The new rules won't affect Pohlmann because the state has sued to close that facility.

That lawsuit, filed in Montgomery Circuit Court, came 10 days after thousands of gallons of hog manure overflowed from a pipe at *Pohlmann Hog Farms* near Crawfordsville. The spill killed more than 3,000 fish in a nearby creek for about six miles. It was at least the ninth spill from the farm since it was established in 1976. In the past 14 years, the farm has improperly discharged almost 1 million gallons of manure into Little Sugar Creek, killing more than 70,000 fish, according to previous *Indianapolis Star* stories. The farm has paid more than $80,500 in penalties.

"Being a big critic of IDEM over the years for lack of fines and penalties, I think they should be applauded for taking an extraordinary action," said farmer Terry Cain, who lives about four miles from the Pohlmann farm. "I think it's safe to say Pohlmann had pretty well wore out its welcome."

Montgomery County sanitarian Ron Posthauer said he supports the suit but believes it would have been unnecessary if the state had taken more forceful action against the farm in the past. "It's a shame that it had to go on this far to where they had to take this type of measure," he said. "But, under the circumstances, I don't know what else is going to stop it from happening again."

Klaus Pohlmann, owner of the farm, apologized for the latest spill, saying it was an accident he was working to correct. Up to 50,000 gallons of liquid manure may have been released into Little Sugar Creek after an aluminum cap on a piping system that carries manure to the fields failed on March 24. The waste was dumped onto the ground for several hours and flowed into a ditch leading to the creek. The spill was not discovered until the next day, when a neighbor called authorities to report dead fish in the creek.

Pohlmann also said he was reducing the number of hogs at the farm, which has been advertised for sale. He said there are about 14,000 hogs there now, down from 29,000 reported to the state in 2000. The state has asked the court to declare the operation a public nuisance and impose civil penalties of up to $25,000 a day. It also asked the court to order that Pohlmann:

- Immediately hire an outside, independent manager to operate its manure-handling system until all hogs are removed from the property.
- Immediately locate and mark all concrete pipes that drain water from the field and plug those that drain into Little Sugar Creek.
- Notify the Montgomery County Health Department, the state environmental department and the state Department of Natural Resources each morning before applying manure.
- Monitor and record all pumping and land application events every two hours.
- Establish vegetative strips at least 150 feet around every waterway and drainage area on the farm.

The environmental department already has the authority to revoke the confined feeding permit it issued to Pohlmann and to issue a violation notice, but Method said that often takes a long time. The court, he said, has more direct authority to impose immediate action "with a greater likelihood of sticking in the near term." This is the first time the state has tried to close down a confined feeding operation, Method said. "I think we took this extraordinary measure because of the history (of *Pohlmann Farms*)," he said. "We've tried other enforcement routes a number of times already, but it's still not stopping spills."

Farms subject to the new federal permit rules include those with at least 700 mature dairy cows, 2,500 adult hogs or 55,000 turkeys. Another 2,000 smaller confined feeding operations in Indiana don't need federal permits, but are subject to state rules.

Sources: Tammy Webber, *Indianapolis Star*, 4/3/03 and 5/14/03

Acid Rain Problems Improving

Adirondack lakes devastated by acid rain over the last century have turned the corner and are now on the road to recovery, according to a new study by Syracuse University (SU) scientists. The study concluded that 50 to 60% of Adirondack lakes are becoming less acidic.

Charles T. Driscoll, a distinguished professor of civil and environmental engineering at SU and the study's primary author, said the trend is the most encouraging he has seen in Adirondack lakes in decades. "The reason I'm so excited about this is because we've been working on these lakes for 20 years," he said. "This is the first time I can say that a large number of lakes are improving due to acid rain control. It's really very positive."

Driscoll cautioned that there is one big caveat to the study. "Even though the lakes are getting better, I think the rate that they are improving is relatively slow," he said. Big Moose Lake, for example, a large acidic lake in the southwestern Adirondacks, could take 30 to 50 years to improve its chemical condition enough to support a healthy fishery. Other mountain lakes would have a recovery time of 10 to 75 years, depending on their pH, a measure of acidity.

In the study, published in the May issue of *Environmental Science and Technology*, Driscoll's team looked at 52 Adirondack lakes that have been monitored for acid rain as far back as 1982. The ongoing study is considered the most comprehensive continuing evaluation of Adirondack lakes. Of those lakes, 20 are improving with rising pH levels indicating reduced acidity, Driscoll said. Twenty-six of the lakes show no change. Only two are becoming more acidic. Four other lakes, where lime was added to reduce the effects of acid rain, were not considered candidates for the study.

Driscoll said the study provides more evidence that efforts are working to reduce the pollutants that cause acid rain. "It clearly demonstrates a cause-and-effect relationship between sulfur and nitrogen emissions and improvements in these lakes," Driscoll said. About 41% of the lakes in the Adirondacks and 15% of the lakes in New England are now chronically or periodically acidic. The Clean Air Act of 1970 resulted in a nearly 40% reduction in sulfur dioxide pollution, while nitrogen oxide emissions have held steady, John Sheehan, spokesman for the *Adirondack Council* said. The two pollutants are the key components that contribute to acid rain.

Last year, a study by Rensselaer Polytechnic Institute also said Adirondack lakes affected by acid rain were showing some signs of improvement. That study looked at 30 lakes. In about half of those, an increase in the pH was observed, a sign that acidic levels are decreasing, researchers said.

Mark Weiner, *Syracuse Post-Standard*, 4/14/03 and *AP/Albany Times Union*, 4/15/03

Carbon Sequestration Forests and Habitat

Reliant Energy said in April that it will fund the reforestation of nearly 600 acres of converted pastureland in East Texas, joining the growing number of corporations working with non-profit groups and local governments to restore habitat and to help secure their financial standings in any future carbon trading market. The latest carbon sequestration project is the product of a joint effort between *Reliant* and a group of public and private partners.

The Conservation Fund acquired the land near Tyler, Texas, on behalf of the state Parks and Wildlife Department, which will manage the land as part of the Old Sabine Bottom Wildlife Management Area. *Reliant* will pay to plant more than 160,000 native trees on the land, creating habitat for wildlife and improving air quality by capturing carbon dioxide from the atmosphere. The forest will capture an estimated 215,000 tons of carbon dioxide over the next 70 years, translating into carbon credits for *Reliant*.

A carbon trading system is based on a "cap-and-trade" model, under which companies have a predetermined annual quota for allowable emissions. If a company exceeds its cap, it may buy emissions credits from other companies whose emissions levels are below their quota. Although U.S. companies are not obligated to participate in the worldwide carbon trading market envisioned by the *Kyoto Protocol*, a number of companies are anticipating mandatory emissions caps in the future. By sponsoring carbon sequestration projects, companies can both gain experience in the fledgling carbon market and secure carbon credits for future use. "This is a very rapidly growing market," said Larry Selzer, president of the *Conservation Fund*. "Worldwide, it's already a $4 billion-a-year market, and many expect the greenhouse gas market to be fully commoditized within 10 years and the market would exceed $10 billion in the next 10 years."

Project participants stressed that companies have more than financial motivations to become involved in reforestation projects. Ed Feith, managing director of environmental safety and industrial health at *Reliant*, said the company did not necessarily act in anticipation of a mandatory emissions cap. "We just felt like it would be prudent on our part to have some experience in these projects," Feith said. The Texas carbon sequestration project will help *Reliant* establish methods to monitor, quantify and possibly certify its carbon credits. Feith said, "A market may develop and we wanted the experience of going down that path at this point."

"These are win-win situations," said Al Daily, marketing director for *Environmental Synergy Inc*., a private company that provides reforestation and carbon quantification services to corporations participating in carbon sequestration projects. "Companies get to acquire carbon offset credits at a very reasonable price and the National Wildlife Refuge System wins because they get additional land to manage for wildlife habitat." "We are not just planting trees to sequester carbon," Selzer said. "We are planting trees to try to recreate important habitat that used to exist on these lands. They were cleared for agricultural purposes and we are putting them back into habitat for conservation purposes."

The Conservation Fund has also worked with *American Electric Power Co*. (AEP) and *Entergy Corp*. to set up carbon sequestration projects. In 2001, the fund acquired 18,000 acres in Louisiana that AEP will plant with 3 million trees — the largest carbon sequestration project completed in the United States, according to the fund. Last year, *Entergy* helped the *Conservation Fund* buy and reforest 600 acres along the Red River in Louisiana, creating the first tract of land in the Red River National Wildlife Refuge.

The Conservation Fund is currently in discussions with companies to plan six or eight carbon sequestration projects extending from Louisiana to North Carolina and up around the Great Lakes states, Selzer said

Lauren Miura, *Greenwire*, 4/18/03

Caviar Dealer Sentenced

On 5/2/03, Arkady Panchernikov of *Caspian Sea Caviar,* was sentenced to 21 months in prison, and fined $400,000, for illegal trafficking in caviar. Panchernikov also agreed to the revocation of his import/export

license and dropped his civil lawsuit against the U.S. Fish & Wildlife Service (USFWS). In addition, he forfeited in excess of $1,000,000 worth of caviar that was seized by the USFWS for various violations.

Panchernikov pleaded guilty in November to violations of the Lacey Act, "for taking or transporting of wildlife in violation of state law". Prosecutors stated that Panchernikov, through his New York based distribution business sold over $600,000 in illegally obtained caviar during the past four years. He was convicted of using false labels on tins of less expensive grades of caviar and marketing the tins as more expensive, higher-grades of caviar. The government's charges against Panchernikov also included illegal importation of Russian caviar and exportation of caviar harvested in the U.S., without obtaining CITES export permits. *Caspian Star Caviar* is believed to have provided at least 60% of the caviar sold and consumed within the United States since 1998.

In 1998, all previously unlisted sturgeon species were listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This international agreement, permits trade in Appendix II listed species only when accompanied by a valid export permit from the country of origin.

Contact: Marie T. Maltese, Division of Scientific Authority, U.S. Fish and Wildlife Service

FDA Changes Course on Mercury Policy

In what leading scientists describe as a landmark change in the government's regulation of mercury, a senior U.S. Food and Drug Administration (FDA) official says his agency now uses the U.S. Environmental Protection Agency's (EPA) much lower safe level for mercury in the human body. Previously, the FDA had maintained there was no danger in having four times more mercury in the human body than the safe level set by EPA.

The reversal, along with other policy shifts will likely affect the mercury advisories issued by states for recreationally caught fish. It will almost certainly lead to significant changes in the advice the FDA gives to women and children about what fish are safe to eat. Some regulators say the FDA's stance also may indicate that the agency plans to provide fish-consumption advice for men, who are not included in the agency's current warning, which targets only women and children.

A paper in this month's *Journal of the American Medical Association* represented the first outward sign of the FDA's new position. The paper was written by top officials from the FDA, the EPA, the *Centers for Disease Control and Prevention*, and the National Oceanic and Atmospheric Administration. EPA's Kate Mahaffey and FDA's Mike Bolger, helped author the article. Both the FDA and the EPA have a role in protecting the public from ingesting too much mercury from contaminated fish. The EPA, which has a larger mission of protecting the nation's natural resources, investigates and regulates various contaminants, including mercury, in recreationally caught fish. The FDA is charged with protecting the nation's food supply, including regulating how much mercury is allowed in commercially sold seafood.

The FDA's former position regarding the safe level of mercury is well-documented in official publications and has caused long-standing disagreement between that agency and the EPA. In fact, during a public meeting discussing the FDA's mercury policy last July, Mahaffey and Bolger got into a terse and heated argument while discussing the science behind the safe level or "reference dose." During that meeting, an internal FDA panel challenged the agency to publish a scientific rationale for its higher safe level. That has not happened, and now the FDA is taking pains to distance itself from its old position. Leading mercury researchers around the nation expressed surprise when told of the FDA's change. "If the FDA is now cooperating closely with the EPA and they are on the same page, this makes a very big difference not only in terms of government policy for commercial seafood, but it provides great clarity for states on how they should handle their mercury advisories," said Alan Stern, who coordinates mercury research for the state of New Jersey and who served on the National Academy of Sciences panel that studied and endorsed the EPA's safe level. "This is really like a sea change at FDA," Stern said.

Dr. David Acheson, the newly appointed chief medical officer in the FDA's science office, did not equivocate when asked if the FDA endorsed the EPA's safe level. "The FDA is basing its advisory on the EPA's reference dose," Acheson said. "Are we formally endorsing it? I'm not aware, but we are certainly using it and pay attention to it." The new thinking also appears to extend to some other contentious topics the agency has been wrestling with. Acheson indicated that the FDA plans to add more fish to its so-called "Do Not Consume" list if new mercury testing reveals that a species tends to have a high level of mercury. Now, there are only four fish on the list: swordfish, shark, tilefish and king mackerel. Environmental groups have accused the agency of caving in to pressure from the fishing industry instead of listing additional fish that scientists believe have high mercury levels.

EPA scientists have described the FDA data as essentially useless for determining whether a species is safe to eat. As a result, the agency may have underestimated the mercury levels in many popular species. The National Marine Fisheries Service is in the process of testing 2,500 samples of Gulf of Mexico fish for mercury. The fisheries agency plans to test Pacific and Atlantic fish as well. "If the data demonstrates that other fish should be put in that category, then I think we would add more fish to the list," Acheson said. He also said the agency was reconsidering the advice it gives to women and children regarding how much canned tuna is safe to eat. The FDA's current advice states that women and children are safe eating two cans of tuna a week.

Scientists say that two cans of tuna a week would push a 130 lb. woman over the EPA's safe level. In fact, just over one can a week would contain all the mercury a 130 lb. woman could safely handle, according to EPA calculations. As little as half a can a week could push a 4 or 5 year old child over the safe level. "We have these things under consideration right now in regards to canned tuna," Acheson said. "What FDA is doing is trying to keep its advisory apace with the science and the data."

Source: Ben Raines, *Mobile (AL) Register*, 04/04/03

Meetings of Interest

Jul 6-11: Ninth International Conference on River Research and Applications, New South Wales, Australia. See: www.conlog.com.au/NISORS. Contact: Elizabeth Medley, conference@conlog.com.au.

Jul 9-11: Ohio State University Olentangy River Wetland Research Park Summer Short Course Series: Creation and Restoration of Wetlands, Columbus, OH. See: http://swamp.ag.ohio-state.edu/ShortCourse.html. Contact: (614) 247-7984.

Jul 11-12: International Organic Aquaculture Workshop: Low-Food-Chain Candidate Species, Minneapolis, MN. See: www.fw.umn.edu/isees. Contact: Deborah Brister, djb@fw.umn.edu, (612) 624-7723.

Aug 10-14: 133rd Annual Meeting of the American Fisheries Society. Quebec City, Quebec, Canada. Contact: Betsy Fritz, bfritz@fisheries.org, (301)897-8616 x212

Aug 18-22: Ohio State University Olentangy River Wetland Research Park Summer Short Course Series: Wetland Delineation, Columbus, OH. See: http://swamp.ag.ohio-state.edu/ShortCourse.html. Contact: (614) 247-7984.

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.

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.

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.

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 Federal Water Pollution Control Act (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.

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.

Mining

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

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.

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 efforts 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.

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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