River Crossings

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MICRA Web Site

After more than a year without access to our Web Site (because of governmental security issues related to homeland security), it is once again up and running and current. As before, you can once again use our Web Site to access electronic copies of River Crossings as well as numerous informational and position papers on resource issues related to rivers and river management. The MICRA Web Site can be accessed at http://wwwaux.cerc.cr.usgs.gov/MICRA. We look forward to your visit!

MICRA to Begin Hosting Regional MRB ANS Panel

MICRA received unanimous approval from the National Aquatic Nuisance Species (ANS) Task Force at their November meeting in Hawaii to begin hosting a Mississippi River Basin ANS Panel (MRBP). Similar panels already exist for the Great Lakes, Gulf of Mexico and Western states. Such regional ANS panels provide mechanisms to coordinate cooperative actions over wide geographic areas or watersheds involving all stakeholders and interests (i.e., Federal, State and local agencies; economic interests; environmental interests; etc.). Such cooperation is essential in controlling and/or stopping the spread of ANS.

Under this arrangement, MICRA will be charged with convening meetings, managing files and records, preparing reports, and carrying on the day to day operations of the MRBP. Funding for operations and staff will in part be provided by the National ANS Task Force. Responsibilities of the MRBP will be to:

- identify priorities;
- make recommendations to the National ANS Task Force;
- assist the National ANS Task Force in coordinating federal programs;
- coordinate non-federal programs within the region;
- advise public and private individuals;
- submit an annual report to the National ANS Task Force describing the various activities underway; and
- develop an emergency response strategy for use by Federal, State, and local entities to stem the ANS invasions and infestations.

Panel membership categories proposed by MICRA include the following:

Jerry Rasmussen, MICRA Coordinator, holds the bighead carp that became the "poster child" for ANS control over much of the Great Lakes and Mississippi River basins this summer.

Inside This Issue

Federal - One member each from the U.S. Fish and Wildlife Service; National Oceanic and Atmospheric Administration; U.S. Coast Guard; U.S. Army Corps of Engineers; U.S. Environmental Protection Agency; and the USDA/Animal and Plant Health Inspection Service.

State - One member each from the Mississippi River Basin states' natural resource agency charged with management and control of invasive species.

Regional - One member each from the Upper Mississippi River Conservation Committee, Lower Mississippi River Conservation Committee, Missouri River Natural Resources Committee, Ohio River Fish Management Team, and MICRA.

Tribal Authorities - One member each (a total of five) representing the tribal interests of the five major sub-basins (Upper Mississippi, Lower Mississippi, Missouri, Ohio and Arkansas/Red) in the Mississippi River Basin.

Local - Two members representing mayoral, chambers of commerce or waterfront owners associations in the Mississippi River Basin.

Private Environmental/User Groups - Two members representing the angler and environmental interests of the Mississippi River Basin.

Private Commercial - One member each representing the following commercial interests: fishing; aquaculture, baitfish and aquarium trades; nurserymen's association; shellers; navigation; electric utility; and water supply.

University/Research - Two members from the National Sea Grant College Program (one from the northern half and the other from the southern half of the Basin), and one member from a USGS/Biological Resources Division Cooperative Research Unit.

At Large - Anyone possessing a special expertise, interest, significant reason, or advisory capability may be elected by MRBP members to serve as an "at large" member. At large members may duplicate the interest or expertise of another member.

MICRA will be responsible for extending MRBP membership invitations, but ANS Task Force approval may be required for membership. MRB Panel members will be given the opportunity to suggest to MICRA any agencies or organizations that might be given an "observer" status. Similarly, such agency/organization can request that designation via communication with MICRA. With regard to membership, in some instances, it is recognized that one representative may be in a position to speak for a larger group. For example, the basin states may wish to appoint one or two individuals as key MRBP contacts and regular meeting participants to speak on their behalf. With the exception of at large members, all members will be appointed by the agency, organization or interest they represent.

The MRBP will meet in full session on a regular basis, anticipated to be 2-4 times per year. An MRBP Chairperson and Vice Chairperson will be initially appointed by MICRA to serve one year terms. After completion of these initial terms, selection or election of future chairpersons and vice-chairpersons will be by MRBP members. The Chairperson shall be selected from among state members; and the Vice-Chairperson from the membership-at-large. These two officers will assist the MICRA staff in facilitating meetings, and will serve on occasion as spokespersons for the MRBP.

The MRBP will establish committees, working groups, and task forces, as needed, to accomplish its mandate. This may include policy, education and research committees. The MRBP will attempt to achieve consensus in all aspects of its work. However, in the event that recommendations from the MRBP reflect a majority view, but lack consensus, the MICRA (as an ex-officio member of the National ANS Task Force) will use its discretion to accompany any such recommendation with a minority opinion. The breadth of MRBP activities will be a function of funding levels and the extent to which members and observers can contribute "in-kind" services, including staff resources.

Beginning in December MICRA will be developing mailing lists and extending invitations to stakeholders. We anticipate

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

that the initial MRBP organizational meeting will be held in late winter/early spring and that the Panel will be operational by next summer. However, because the Panel covers such a large geographic area (i.e. parts of 31 or more states), we anticipate that several meetings will be required before membership settles into a well defined structure.

Any questions regarding the MRBP can be directed to: MICRA, P.O. Box 774, Bettendorf, IA 52722; or Norm Stucky, MICRA Chairman, (573) 751-4115 or Jerry Rasmussen, Coordinator for Large River Activities, (309) 793-5811. E-mail contacts can be made at ijrivers@aol.com.

GAO Supports Stronger Action Against Aquatic Nuisance Species

The powerful Government Accounting Office (GAO) in a recent report weighed in on the effects of aquatic nuisance species (ANS) on the national economy and the need for stepped up government action to fight the problem. The GAO report says that greater commitment is needed from federal agencies to deal with the problem, and that while many agency efforts to curb and control the invaders are headed in the right direction, they are hampered by lack of data and resources.

One area where federal agencies clearly lack data, according to the GAO, is in estimating costs. According to the report, the government is not fully tabulating all the costs encountered when non-native species invade. GAO recommends that federal agencies analyze not only the damage done by known invaders, but also the likelihood of future invasions, the likely damage future invasions would inflict upon commercial activities and ecosystems, and the cost and effectiveness of various prevention and control methods.

GAO says the government also needs a clearer focus on the problem. Currently, the National Invasive Species Task Force, National Invasive Species Council (NISC) and Invasive Species Advisory Committee are all dedicated to fending off new assaults and controlling or eradicating existing invasions. However, the groups lack performance-oriented goals and specific measures of success, the report says. Therefore, the government needs a comprehensive management plan to combat invasive species, which the NISC has an opportunity to provide in 2003 when it revises its own management plan.

Lori Williams, executive director of the NISC, said the 10 federal departments that make up the group are looking at making their objectives more specific next year. Williams emphasized that the NISC is still working from the very first comprehensive national plan to combat invasive species, and starting with a general plan that is broad in scope benefits the effort because it is introductory in nature so people can begin to understand the problem.

Williams criticized the GAO report for looking only at the actions the government had completed, and not the many steps it had taken to combat invasive species. "The agencies have made a lot of step by step progress. But bringing things across the finish line has been more time consuming than we thought," she said.

The GAO report makes special note of the problems with ballast water in the Great Lakes. Ballast water is used inside many ships for weighting purposes, and is a common source of new ANS invasions. Ballast water is collected in one port, along with a plethora of the port's native aquatic species, and released in another port, where the species living in the ballast water become bona fide aliens. The Great Lakes has experienced at least 160 invasions, mostly from ballast water, including the zebra mussel that caused millions of dollars worth of damage by attaching to and clogging intake pipes all over the Great Lakes, Hudson River, Mississippi River and other major waterways. Some say the zebra mussel also contributed to the listing of five endangered species in West Virginia.

Source: Natalie M. Henry, Land Letter, 10/31/02

Emergency Action Taken Against the Asian Carp Invasion

The U.S. Dept. of State, USEPA, U.S. Army Corps of Engineers (COE), International Joint Commission (IJC), and Great Lakes Fishery Commission (GLFC) announced on November 18th that they had joined forces to defend the Great Lakes region against the spread of Asian carp. The funds were made available to supply backup power generators for an electrical barrier on the Chicago Sanitary and Ship Canal. This barrier is the first-and currently, only-line of defense against the Asian carp invasion. These fish are an extremely prolific species that are rapidly advancing up the Illinois River toward the Great Lakes via the canal and threatening the Lakes' biological integrity. The new generators ensure that a power outage will not allow the carp to invade the Great Lakes. This joint action marks an unprecedented level of speed and cooperation by agencies and stakeholders as they respond in real time to the migration of this invasive species.

Purchase and installation of backup power generation for the electrical barrier is expected to cost $300,000. The USEPA provided $150,000 for this purpose and the COE contributed in-kind services amounting to $50,000. Working through the IJC and the GLFC, the U.S. Department of State provided $170,000 to assist in the effort, $100,000 of which will be applied to the purchase of the backup generators.

"The Great Lakes benefit millions of Americans and Canadians who rely on them for food, water, recreation, and livelihoods," said Ambassador Mary Beth West, Deputy Assistant Secretary of State. "If Asian carp migrate into the Great Lakes, they could significantly threaten this shared natural resource." According to a joint News Release, Asian carp pose a significant threat to the Great Lakes because of their size, fecundity, and ability to consume large amounts of food. Asian carp can grow to 100 pounds and up to four feet long. They are well-suited to the climate of the Great Lakes region, which is similar to their native Eastern Hemisphere habitats. It is expected that they would compete for food with the valuable sport and commercial fish. If they entered the system, they could become a dominant species in the Great Lakes.

G. Tracy Mehan, III, Assistant Administrator for Water at the USEPA, stated, "The specter of large, prolific Asian carp in the Great Lakes has motivated our coalition of government agencies to act swiftly. We have learned from hard experience the environmental and economic havoc caused in the Great Lakes by aquatic invasive species such as zebra mussels, sea lamprey, and round gobies. The latest threat from Asian carp underscores the serious problems posed by invasive species and the urgent need to prevent further introductions. The Great Lakes simply cannot afford another aquatic invasion."

"Fortunately, we do have a first line of defense against the Asian carp invaders," said Brigadier General Steven R. Hawkins,

commander of the COE's Great Lakes and Ohio River Division. "In April, 2002, the COE completed construction of an electrical fish barrier. The barrier was designed as a demonstration project to study the effectiveness of preventing migration of species between the Mississippi and Great Lakes watersheds. The barrier uses electricity to repel fish and hopefully will prevent fish passage. Because the barrier relies on electricity, we were concerned that a simple power outage could allow Asian carp to sneak past...." Silver and bighead carp have been collected within 17 miles of the barrier, but to date, they have not been sighted upstream.

Agencies and stakeholders will continue to work to prevent the migration of Asian carp and other invasive species through the Chicago Sanitary and Ship Canal. Partners in this effort include: Chicago Mayor Richard Daley, Commonwealth Edison, the Council of Great Lakes Governors, the Dispersal Barrier Advisory Panel , the GLFC, the Great Lakes Sportfishing Council, the Illinois Department of Natural Resources, the IJC, the Metropolitan Water Reclamation District of Greater Chicago, Midwest Generation, the MICRA, the New York Department of Environmental Conservation, the COE, the USEPA, the U.S. Fish and Wildlife Service, Wisconsin Sea Grant, and other state, Nongovernmental, and academic partners.

Source: Joint GLFC, IJC, COE, State Department and USEPA News Release, 11/18/02

State of the Nation's Ecosystems

A new book entitled, The State of the Nation's Ecosystems, lays out a blueprint for periodic reporting on the condition and use of ecosystems in the U.S. The book is designed to provide policymakers and the general public with a succinct and comprehensive — yet scientifically sound and nonpartisan — view of "how we are doing"; providing a prescription for "taking the pulse" of America's lands and waters. It identifies what should be measured, counted, and reported so that decision makers and the public can understand the changes that are occurring in the American landscape.

The book was developed for the H. John Heinz III Center for Science, Economics and the Environment by experts from businesses, environmental organizations, universities, and federal, state, and local government agencies. Participants and contributors represented a wide array of political perspectives and included experts from the fields of ecology, chemistry and toxicology, hydrology, oceanography, limnology, use of satellite remote sensing, forestry, farming, range management, and many others. The book identifies the major characteristics of ecosystems that should be tracked through time to provide this view, and where possible, provides information on both current conditions and historic trends. The book also highlights key gaps — situations where data do not exist or have not been assembled to support national reporting. Separate chapters report on coasts and oceans, farmlands, forests, freshwaters, grasslands and shrublands, and urban and suburban areas. These ecosystem-specific indicators are complemented by "core national indicators" that provide a highly aggregated view of overall conditions.

Upper Mississippi River headwaters.

Data on freshwaters show the following:

- About half of all Colonial-era wetland acreage in the lower 48 states has been converted to agriculture, development, or other land uses. By the 1990s, about 10% of the wetlands that existed in the 1950s had been lost, although the rate of loss slowed after 1985.
- Lakes, ponds, and reservoirs occupy about 21 million acres, or one-fifth as much area as is occupied by wetlands. The area of ponds (usually less than 20 acres) has increased by over 100% since the mid-1950s. This is believed to reflect the construction of small ponds, but the data do not distinguish natural from constructed ponds. For more than three-fourths of their length, the riparian areas of streams and rivers are forested or covered with other natural vegetation.
- About 23% of riparian areas have either farmlands or urban development in the narrow area (100-foot strip) immediately adjacent to the water's edge.
- About half of all river sites tested had phosphorus concentration levels of 100 ppb or higher. About one-fourth of the tested sites had concentrations below 50 ppb. Since some areas have higher natural levels of phosphorus than others, interpreting this indicator will become much easier when trend information is available.
- The percentage of streams or rivers with major changes in the size of their highest or lowest flow, or in the timing of these flows, increased slightly from the 1970s to the 1990s. In addition, the number of streams or rivers whose high flows were well above those in the 1930–1949 reference period rose markedly from the 1980s to the 1990s. The reference period used here included periods of relatively low rainfall, but it also predated much development activity (dam building, irrigation, etc.) that might affect flows. Therefore, it is more useful to focus this indicator on increases or decreases in the number of streams or rivers with major changes in flow, rather than on the actual number of streams or rivers with such changes. Finally, it is not possible to use these data to identify the cause of flow changes.
- About 13% of native freshwater species are critically imperiled, 8% are imperiled, and 4% are or may be extinct. When vulnerable species (11%) are counted, about a third of freshwater animal species are considered "at risk." Hawaii and the Southeast have a much larger percentage of at-risk freshwater species than any other region. Interpreting these figures is complicated, however, because some species are naturally rare. Thus, the rankings are influenced by differences among regions and species groups in the number of naturally rare species, as well as by different types and levels of human activities that can cause species declines. Interpretation of these data will be greatly enhanced when information on population trends for these at-risk species becomes available.
- Of 350 watersheds, only five have no established non-native fish. Sixty percent (213) have 1–10 non-native species, and two watersheds have 41–50 such species. Watersheds in the central United States — including those on the Gulf Coast — generally have the fewest non-natives. Examples of native North American species found outside their historic range include

bullfrogs and warmouth sunfish, both eastern natives are now found in the West. Bullfrogs are associated with declines in native fish, bird, and amphibian populations in western lakes, and the warmouth has apparently contributed to the decline of some native frogs and salamanders.

- From 1995 to 1999, about 500 incidents of unusual waterfowl mortality were reported in the U.S. In half of these incidents, less than 100 birds died; in about 100 incidents, between 1,000 and 10,000 birds died, and 15 incidents involved more than 10,000 deaths. The total number of die-offs was about 20% lower in 1995–1999 than in 1985–1989 and 1990–1994. In general, there are more die-offs in the Pacific and Midwest and fewer in the Southwest and Southeast.
- About 60% of the 1560 wetland communities ranked here are considered to be at-risk: about 12% are critically imperiled, about 24% are imperiled, and 25% are vulnerable. Hawaii and the Southeast have a larger percentage of at-risk wetland communities, but in all regions except the Northeast, more than 50% of wetland communities are at risk. Interpreting these figures is complicated, however, because some of these wetland community types have never been widely distributed, while others once covered much larger areas and have been reduced in area by conversion of wetlands to other uses. Because the data do not distinguish between naturally rare community types and those that are declining, this indicator will be much more informative when trend information becomes available. At present, the at-risk plant communities reported here generally occupy small areas and thus probably represent less than 60% of total wetland acreage.
- Groundwater and surface water withdrawals increased from 1960 to 1980, and these increases are attributed to increasing demand from all major sectors. Total water withdrawals declined about 10% between 1980 and 1985, then grew slightly from 1985 to 1995. Reduced demand for irrigation, thermoelectric power generation, and self-supplied industrial use was responsible for the decline in total withdrawals between 1980 and 1985; demand in these three sectors was nearly flat from 1985 to 1995. Demand for municipal and rural use has grown steadily over the past few decades, with municipal demand increasing more rapidly. For most categories of use, very little water is actually consumed — that is, most of the water withdrawn is returned to the environment for subsequent use by others, although its quality may be lower than when it was initially withdrawn, reducing its suitability for some uses.
- The number of disease outbreaks attributable to contaminated drinking water declined significantly overall from 1973 to 1998. Since 1986, the average number of outbreaks per year was lower than the average during the 1973–1985 period, although there was notable year-to-year variation. There is also notable variation in the number of outbreaks associated with recreational contact, which have increased significantly since 1978. Since 1990, the number of outbreaks associated with drinking water and the number associated with recreational contact have followed a similar pattern. This indicator reports outbreaks, not the number of people who become ill. Thus, depending on the location of contamination problems, the size and type of water delivery system, and other factors not related to environmental quality, the trend in the number of people affected may be different from the trend in the number of outbreaks. Doctors and state and local public health officials report data on outbreaks to the Centers for Disease Control and Prevention. Whether an outbreak is identified and reported depends on many factors, so these reports are best considered an indication — rather than a perfect record — of the true incidence of waterborne disease outbreaks.

The Heinz Center, who funded this work, is a nonprofit, nonpartisan institution dedicated to improving the scientific and economic foundation for environmental policy through multisectoral collaboration. It was established in December 1995 in honor of Senator John Heinz. Focusing on issues that are likely to confront policymakers within two to five years, the Center fosters collaboration among industry, environmental organizations, academia, and government in each of its program areas and projects. It uses the best scientific and economic analyses to develop viable options to solving problems, and its findings and recommendations are widely disseminated to public and private sector decision makers, the scientific community, and the public.

The State of the Nation's Ecosystems was published by the Press Syndicate of the University of Cambridge, The Pitt Building, Trumpington Street, Cambridge, United Kingdom, http://www.cambridge.org. It can be reviewed on line at http://www.heinzctr/ecosystems/index.htm

Clear-cutting to Prevent Drought?

Colorado officials are pushing a program of aggressive logging that would change the face of the state's high-country forests for decades in hopes of increasing the state's water supply. They are basing this action on the results of a 4,100-acre demonstration project in Coon Creek Wyoming that showed how lodgepole pine forests can be clear-cut in clumps to produce additional runoff. Researchers say the 1990's project increased spring runoff by 17%, but environmentalists object to the idea.

Up to half a million acre-feet of new water — enough to supply a million families — could be created by sawing out clear-cuts in clumps and thinning trees on broad swaths of federal and state land, according to Kent Holsinger, the top water official in the Colorado Department of Natural Resources.

Such cuttings have been studied on small plots since the Great Depression, but have never been applied as broadly as officials of Gov. Bill Owens' administration now advocate. With Republicans in control of the statehouse and in Washington, big projects are now expected to get serious consideration from both state and federal officials. "The idea of more actively managing forests to mitigate wildfire and help restore water yields holds tremendous promise," Holsinger said.

Mark Rey, an undersecretary with the U.S. Department of Agriculture and a former timber lobbyist, said existing forest plans, which direct logging on federal land, could be changed to help achieve state goals. "We are eager to work with the state as we go through the forest plan revision process to see under what circumstances we can agree to increase water yield for aquatic species and downstream users," he said.

Environmentalists, however, have universally panned the concept, which they say doesn't work everywhere, but is guaranteed to increase flooding and degrade mountain streams. "This is beyond harebrained," said Chris Wood, who was an adviser to Forest Service chief Mike Dombeck during the Clinton administration. "This will produce a tremendous backlash when people see what this looks like on the ground."

The idea is simple: Removing trees allows more snow to fall to the ground, where it runs off into streams and rivers during the spring. Some forest researchers and many water users complain that Colorado's high

country has grown too many trees in the last few decades, trees that intercept snow which would otherwise add to the snowpack that melts and runs downhill to farmers and cities every spring.

Huge amounts of forest — between 25 to 40% of a watershed — have to be cut to achieve this increased water yield, according to the research being used to support the effort. And land managers would have to maintain those clear-cuts or keep making new ones to keep the extra water flowing.

But those same studies show that removing tree cover only produces extra water during the spring runoff — when it's not needed. And the largest increases are in wet years, not during drought. So logging for water would require new and enlarged reservoirs, something that Owens has already indicated is a top priority. However, the Owens administration has been careful to cast this as a forest health effort, saying that increased logging can serve the dual benefit of reducing wildfire risk while providing more water as forests are returned to a more "natural" state.

But the dry, over-dense pine forests that burned last summer never get enough snow to be sources of water to begin with. And a major logging effort in the high country will necessarily mean less money is available to thin the Front Range red zone that burned so fiercely in 2002. Generating water requires cutting the moist high snow forests that only burn once every few centuries, when drought makes them so flammable that no amount of thinning or firebreaks will help. "The link between logging for fire mitigation and logging for water is a false one," said environmental hydrologist Dan Luecke of Boulder.

Most of the research on how logging can increase runoff in the Rockies has been done at the experimental forest in Fraser, where water yield from the 714-acre Fool Creek watershed has been continuously monitored for 60 years. Foresters removed 40% of the watershed's trees with alternating strips of clear-cuts in 1956, and documented a 40% increase in water flowing through a gauge at the bottom of the valley when compared with a nearby watershed that was not cut.

And the yield has been long-lived — four decades later, half of the increase can still be measured at a stream gauge at the foot of the valley, said retired Forest Service researcher Chuck Troendle, whose work underpins much of the support for logging for water. Flows increased the most during wet years, and almost not at all during droughts, he said. That means the surplus water has to be captured in reservoirs and stored — perhaps for many years — until it's needed. But Troendle also found that the number of high-flow days each spring doubled, resulting in increased scouring of the stream channel.

Clear-cutting and Drought - Imagine this mountain vista with up to 40% of its trees removed in clear-cut strips. Then imagine the global warming and evaporation impacts on the microclimate that would be produced by the associated "land use change effects" and "altitude effects on the glaciers" described in the next article. Then visualize the resulting lack of snowpack and increased runoff and erosion from seasonal rainfall produced by these landscape and microclimate changes. Then try to explain how all of this could solve the drought.

The only large-scale demonstration of the concept was implemented on the 4,100-acre Coon Creek watershed of the Encampment River in southern Wyoming. Twenty-four percent of the watershed was removed in patch cuts during the early 1990s, producing a 17% increase in flow, said Troendle. Two years ago, Troendle calculated that 50,000 to 55,000 acre-feet of water a year could be created by a logging program that cut half of the 1.1 million acres of national forest land in the North Platte watershed over a 120-year period. But he also said any increase in streamflow downstream of the forest would be so small that it would be undetectable.

Holsinger said the state intends to increase logging on the 70,000-acre Colorado State Forest in Jackson County immediately. And he said the Owens administration wants all national forest plans to identify increasing water yield as a primary goal. Clear-cutting would be required on lodgepole pine stands, a practice that would eat away at habitat favored by the federally threatened lynx and other interior forest species. The result would be the clusters of openings found at Coon Creek, which Troendle acknowledges have a significant environmental impact.

"It's pure destruction," said Luecke, as he examined a photo of the watershed. "It looks like it was carpet-bombed. This is an outrageous idea. There's no way it can be economically viable." Troendle said thinning could be used in the spruce-fir forests where most of Colorado's water-bearing snowpack collects. But the proportion of trees removed — 25 to 40% would have to be the same.

Many scientists, however, doubt that logging for water would be as successful in other parts of Colorado. In the 1970s, Richard Gaudagno studied what happened to runoff after ski runs were cut at Eldora Mountain. He discovered that deep snow collected in the spruce-fir stands, while the open runs were scoured almost bare by the winds - the exact opposite of what Troendle found in the Fraser study just a few miles away. Troendle's studies also showed that cutting on the slopes with the wrong exposure or too much wind would result in no new water. And the environmental cost could be immense. Removing trees causes erosion, which clogs streams with sediment that stifles habitat for fish and aquatic insects, environmentalists said.

"You're completely altering the hydrology of these systems for a short-term gain in water quantity," said Wood, now the vice president for conservation programs at Trout Unlimited. "But the long-term impacts on water quality and wildlife are

immense." Greg Aplet, a forest ecologist with The Wilderness Society, said that the amount of water flowing off Colorado's middle-aged forests is about to naturally increase as they mature into old-growth stands. The uniform tops of today's forests may intercept snowfall, but gaps caused by insects and storm damage in old-growth forests help capture snowfall. "These forests are just at the point where water yield should come back on its own," Aplet said. "Why reset the clock now?"

Despite the official support, many environmentalists think economics will be the idea's undoing. "You have to ask two questions: How much will it cost and what else could we be doing with the money?" said Luecke. "The Forest Service has been losing money on logging projects in Colorado for a long time," Aplet said. "It's expensive to build roads and log on steep slopes, and Colorado trees just don't get that big. That's why the timber industry has largely abandoned the state."

"The fact you do need to virtually clear-cut an entire area to get some measurable runoff — and then only in certain years — makes this such a long shot it doesn't seem to be worth all that effort," said former Colorado Natural Resources director David Getches, now a law professor at the University of Colorado. "We haven't done any planning for the state's water future, and we're growing like crazy," Getches said. "Frankly, decision-makers have been caught flat-footed, and they want to do something. I hope they don't do something destructive."

"We're not going to solve water problems in the West by focusing on the supply side," said Wood. "We need to find ways to be more efficient with the water we have."

Source: Theo Stein, Denver Post, 11/10/02

Land Use and Altitude Effects on Climate Change

Land-use changes, such as farming, irrigation and urban sprawl, appear to be a major factors contributing to climate change, according to a new report from a Colorado State University (CSU) researcher released by NASA in early October. Until now, policy-makers and many scientists have focused only on how heat-trapping gases such as carbon dioxide are contributing to what's often called global warming.

The NASA study, written by lead researcher Roger Pielke, Sr., state climatologist and CSU atmospheric scientist, found that land surface changes caused by humans in places such as North America, Europe and Southeast Asia, redistribute heat regionally and globally within the atmosphere and may actually have a greater impact on climate than that caused by the combined effects of greenhouse gases.

Those land-use changes have unpredictable consequences, Pielke said. "We're altering the climate in adverse ways," he said. It's no surprise to researchers that land-use changes impact local climate; anything that affects plant growth affects the atmosphere, he said. In Colorado, irrigated farmlands have contributed to a cooler, wetter climate by adding moisture to the ecological system, Pielke said. Those changes mean that storms form in new areas, causing rippling effects around the world.

Tropical deforestation appears to have a particularly global effect, he said. Types of land surface strongly influence how the sun's energy is distributed back to the atmosphere. For example, if a rain forest is replaced with crops, there is less water evaporation, which leads to warmer temperatures in that area. The reverse is true when dry areas add water through irrigation.

"Our work suggests that the impacts of human-caused land-cover changes on climate are at least as important, and quite possibly more important, than those of carbon dioxide," Pielke said. Many land-use changes cannot be reversed, said Steve Running, ecology professor at the University of Montana, a member of the research team. Changes in the Earth's surface change the energy balance for the globe, he said.

NASA funds this kind of research because it takes a global view rather than a national view of science, Running said. However, international scientists looking at climate change have ignored the important impact land-use change has on the climate, Running said.

The Kyoto Protocol — agreed to by most nations in 1997 with the exception of the United States — set binding greenhouse gas emission standards for industrialized countries as an effort to reduce greenhouse gases. "All of it (i.e. the Kyoto Protocol) was based on reducing greenhouse gas emissions," Running said. "There was no discussion on land-use trends. "We're not trying to replace (the importance of greenhouse gases), but instead bring in an additional variable that has been ignored." Any plan geared to tackle climate change must include reducing greenhouse gases and better land management, he said. There are other contributing factors to climate change, such as the use of aerosols and nitrogen deposition, that need to be considered as well, Pielke said. "We have to look at the climate issue holistically," he said.

The new report is interesting, exciting and will create a lot of debate among scientists, said Kevin Gurney, CSU atmospheric researcher. He's spent the past seven years working internationally as a consultant for the World Wildlife Federation. Gurney uses complex carbon models to show policy makers how planting trees or deforestation affects greenhouse gases and to educate them on the complex scientific principles of the global carbon cycle. Gurney said he's not ready to concede that land-use change is as important to climate change as greenhouse gases because the impacts can't be weighed on the same scale. "(Land-use change) hadn't entered the radar screen (at international conferences) because the work wasn't done," he said. In the future, land-use concerns need to be incorporated in climate change protocols at a level equal to the impact it has on climate change, Gurney said.

In the meantime, scientists have also found that global warming may be occurring faster at higher elevations. According to a study of a glaciers in Wyoming's Wind River Range, published in the Journal of Geophysical Research, samples of ice taken from the Upper Fremont Glacier near the summit of 13,745-foot Fremont Peak indicate that alpine temperatures have risen more than 6 degrees in the last 40 years,

Utah-based USGS scientist David Naftz, principal author, and his crew undertook two studies, one starting in 1989 and the other completed in 2001. By studying oxygen atoms at various layers in the ice, researchers can determine the air temperature at the time the ice was formed. Records from lower elevations do not show the radical changes found at the glacier, Naftz said.

"High elevations do seem to be experiencing higher rates of temperature change," he said. Research shows similar warming in the Alps, central Asia and Alaska. "Everyone's come to the conclusion that

the Earth's heating up," he said. The size of glaciers was not addressed in his studies, but Naftz said it is common knowledge that they are shrinking.

Climbers in the Tetons notice that ice gullies are now slimy rock chutes, and one prediction is that the Dinwoody Glacier in the Wind Rivers will disappear in about 30 years. The Wind River glaciers produce water all summer for the Wind River Valley, Naftz said. "When those glaciers do go away, the water impacts are really not quantified," he said. With rising temperatures, scientists are scrambling to learn all they can from glaciers. "It's a historical ice-coring record that's going to disappear," he said.

Copies of Naftz's report can be obtained at: USGS, 2329 W. Orton Circle, Salt Lake City, UT 84119. E-mail requests can be sent to dlnaftz@usgs.gov

Source: Sally Bridges, Fort Collins Coloradoan, 10/2/02; and Associated Press, The Billings Gazette, 10/13/02

Missouri River Lawsuit Threatened

Accusing the Bush administration of shirking its responsibility to protect endangered species on the Missouri River, environmentalists notified federal officials on November 7 that they will sue if the Army Corps of Engineers does not follow a U.S. Fish and Wildlife Service (FWS) recommendation to reform dam operations on the river next year.

"The Army Corps is clinging to the status quo in defiance of the law, clear science, and sound economics," said David Hayes, former Deputy Interior Secretary and currently a partner at Latham & Watkins, which is representing American Rivers, The National Wildlife Federation and other groups in the suit.

Eric Eckl of American Rivers said the groups have been ready to sue over this issue since 2000 but were "pushed over the edge" in late September when the Interior Department endorsed the Corps' plan to maintain its current operations on the river next year. If the status quo is maintained next year, the groups say, the Corps will be violating the Endangered Species Act and other laws by ignoring a FWS scientific assessment that says three species will go extinct unless river flows mimic natural conditions beginning in 2003.

FWS's December, 2000, Biological Opinion says the Corps must implement higher water levels in the spring and lower flows in the summer to ensure survival of the interior least tern, piping plover and pallid sturgeon. Although the Corps would probably not be required to conduct the spring rise in the next year because the Biological Opinion does not require it in drought years, the low summer flows are required every year, Eckl said. In a September 27 letter to FWS Regional Director Ralph Morgenweck, however, Corps Northwest Division Commander David Fastabend said the agency does not intend to implement the low summer flows, and this indicates an intent to violate the ESA, the groups say.

"The Corps is violating the Endangered Species act by asking for a waiver and the FWS is violating the act by granting it," Eckl said. In his letter to FWS, Fastabend says the Corps intends to "provide for stable or declining flows from 15 June through 15 August, going no lower than those necessary to meet minimum services to navigation from 1 April through 1 December 2003."

According to an official in the FWS's Mountain-Prairie region, the 2000 Biological Opinion required the Corps to drop river levels for a few weeks in the late summer below those necessary to maintain barge traffic. "The Biological Opinion does call for flows to be lower than the minimum required to maintain barge traffic," the official said. "We're asking the navigation industry to give us a few weeks of low flows during the summer. That would be at a time when barge traffic is normally at a minimum anyway."

Corps Northwest Division spokesman Paul Johnston denied the groups assertion that the agency will be in violation of the law by maintaining its current river operations next year. That's because the FWS — the same agency that issued the Biological Opinion — is backing the Corps plan to maintain the status quo while the agencies conduct "informal consultations" on the issue. "Obviously we don't think we're violating the law or we wouldn't be doing it," he said.

Environmentalists counter that the 2000 Biological Opinion is a legally binding document, and the agencies could be found guilty of violating it even if FWS officials now say the Corps is not required to implement it next year. A FWS official who worked on the Biological Opinion said recently he has not seen any evidence that the document is not scientifically justifiable. In his letter to Fastabend granting the Corps a reprieve from the Biological Opinion next year, Morganweck says he concurs with Fastabend that there will not be enough water in the system to allow for a spring rise, but he does not address the issue of lower summer flows.

In addition to suing over the ESA, environmentalists also contend that the administration is violating the Administrative Procedure Act by delaying the Missouri River decision without just cause. Federal agencies have been considering revising the master manual for the river for the past 11 years. In September 2001, the Corps delayed the decision by releasing an Environmental Impact Statement on the issue that lacked a preferred alternative. The decision was delayed again in May, when the Corps announced it would enter informal consultations with FWS over how to comply with the Biological Opinion.

Environmentalists also contend the agencies are violating the Flood Control Act of 1942 by giving preference to the barge industry over recreation, even though the barge operators are a much smaller player in the local economy. The groups say the barge industry contributes only $7 million to the local economy, while recreation that would be generated by changing river flows would account for $90 million.

But the Coalition to Protect the Missouri River, a group that represents barge interests, says those numbers are flawed.

"We have always stated that the value of river commerce ranges from $77 to $203 million," said Randy Asbury, director of the group. "The comparison the environmentalists are making is not applicable and is meaningless. The ways they value navigation versus recreation are not similar in methodology."

Source; Damon Franz, Greenwire, 11/08/02

Economics Analysis — Value of Fishing and Recreation Exceeds Value of Farming

An economic analysis of Klamath River water use shows that returning the water to the river would generate 30 times more economic benefit than continuing the current practice of diverting it to farmers in the Klamath Basin. The greater economic returns would come from increases in sport and commercial fishing as well as related recreational activities in the Klamath and its tributaries. The report was prepared by the USGS and reported in the November 1 issue of the Wall Street Journal.

Although the report has been peer reviewed and is ready for publication, the Bush administration has refused to release it to the public. Members of the Coalition for the Klamath Basin (CKB) received copies of the report. CKB members include: American Rivers, Defenders of Wildlife, Headwaters Institute for Fisheries Resources, Klamath Basin Audubon Society, Klamath Forest Alliance, Northcoast Environmental Center, Oregon Natural Resources Council, Pacific Coast Federation of Fishermen's Associations, Sierra Club (Oregon Chapter), The Wilderness Society, and WaterWatch of Oregon.

Word of the suppressed report came the same week that a whistle blower from the National Marine Fisheries Service stepped forward to disclose that two scientific reviews mandating higher flows to protect Klamath River salmon were both overridden by non-scientists in order to prioritize irrigation over all other uses. A much weaker alternative flow rate plan prepared by the U.S. Bureau of Reclamation was ultimately adopted. This weaker alternative will cause grave harm to salmon living in the Klamath River as evidenced by the massive fish kill that occurred in the river in late September. This weaker plan is also currently the subject of a court challenge by a coalition of commercial fishermen, conservation groups, Congressman Mike Thompson, and the Yurok Tribe.

Zeke Grader, executive director of the Pacific Coast Federation of Fishermen's Associations said, "This government does a great job of hiding data it doesn't like. The stench of the recent fish kill in the Klamath River is permeating to the highest levels of the Bush administration." The groups challenging the existing Bush administration Klamath River flow plan called for the release of another long suppressed government report: The Hardy Phase II Report. This report lays out the scientific need for far greater releases of water to the Klamath to protect the long term health of Klamath River fish stocks and the communities downstream that depend on them for their economic lifeblood. It has been in "final draft" form since November 2001.

Earthjustice attorney Kristen Boyles said, "We call on the Bush Administration to come clean on the Klamath. First we learn from a whistleblower that science was overridden by politics, and now we learn that the Bush Administration has delayed an economic report that conflicts with its political agenda. The Administration must release the USGS economic report and the final Hardy Phase II Report now so that the decisions in the Klamath can be based on all information."

"We've heard a lot about 'sound science' from this Administration," said Jim Waltman, Director of Refuges and Wildlife Programs for The Wilderness Society. "It's increasingly clear that when they say 'sound' science, they mean science that 'sounds good' to their political allies and contributors. Without access to all the good data that are available, the effort to find lasting solutions in the Klamath is doomed to fail."

"Behind every threatened fish in the Klamath Basin is a Native American family, a commercial fishing family, or a family that depends on river recreation," said Dr. Kate Vandemoer, executive director of WaterWatch of Oregon. "This report shows that they are just as important to our economy as irrigation in the high desert. We need to reduce the demand for water so that everyone can get a fair share."

A copy of the USGS Economic Report is available at: http://www.amrivers.org/docs/klamath%20recreation.pdf. Supporting documentation can be downloaded at: http://www.amrivers.org/docs/Klamath_Doc.pdf

Source: Coalition for the Klamath Basin Press Release, 11/1/02; and The Wall Street Journal, 11/1/02

Private/Public Restoration Project for Missouri River Headwaters

PPL Montana said in early October that it would commit $23 million over the next decade for recreation, fisheries, water quality and wildlife habitat development along a 524-mile portion of the Madison-Missouri River corridor in Montana. "PPL Montana is extremely pleased to be involved in a landmark development project dedicated to long-term environmental stewardship for the state of Montana," said Brad Spencer, PPL Montana vice president and chief operating officer. "This public/private partnership will have an extraordinary impact on some of the state's most valuable resources."

The company will join with federal, state and private groups to pay for improvements in the corridor stretching from Hebgen to the Fred Robinson Bridge. Its commitment has leveraged an additional $51 million in matching funds through partnerships with federal, state and other private organizations, PPL Montana said. Spencer called his company's commitment one of the largest corporate environmental contributions in Montana history.

Joining PPL Montana in the project are the Montana departments of Fish, Wildlife and Parks and Environmental Quality and the U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, U.S. Bureau of Reclamation, Forest Service, USEPA, USGS and the U.S. Department of Agriculture Farm Service Agency. Private organizations include the Cinnabar Foundation, the Fanwood Foundation, Sunburst Unlimited, Trout Unlimited, American Rivers, Montana Stockgrowers and others.

PPL Montana said it will match funds provided by the other partners so everyone involved will have a voice and a financial stake in project development. The partnership, reached through a memorandum of understanding with state, federal and private entities, will allow both PPL Montana and the state to move forward jointly on stewardship projects of common interest. The resource plans were initially developed through a collaborative effort during the

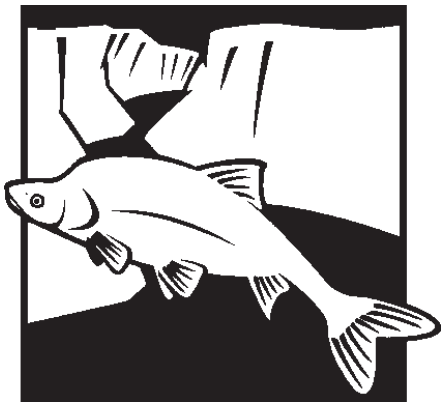
relicensing process for PPL Montana's nine projects on the river system.

The stewardship program and funds will be directed to activities involving conservation reserve enhancement, recreation, fisheries, wildlife habitat, water quality and cultural resources development associated with the Madison-Missouri River system. PPL Montana is a subsidiary of PPL Corp. of Allentown, PA. It bought Montana Power Co.'s dams and share of coal-fired power plants in 1999.

Source: The Billings Gazette, 10/8/02

Colorado River Recovery

Biologists working on a $100 million effort to restore four species of Colorado River endangered fish announced major progress this fall — baby fish. The discovery — that rare razorback suckers raised in hatcheries are reproducing in the wild — comes as a great relief to biologists worried that the artificially raised fish would fail to adapt to a real river environment. "This is great news," said Chuck McAda, a project leader for the U.S. Fish and Wildlife Service. "We were never sure if these fish would be capable of carrying out the normal activities of wild fish."



Biologists recently found at least four fish larvae in the Gunnison River, a tributary to the Colorado. Razorback suckers, which are nearly extinct, have been absent from the Gunnison River since the mid-1980s. In 1996, biologists started stocking the river with hatchery-raised razorbacks, and they are now seeing the results. "This is direct evidence that we can achieve the first step toward recovery of this species in the Gunnison River," McAda said

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Razorback suckers, Colorado pikeminnows, humpback chubs and bonytails once thrived in the Colorado River Basin, but have declined dramatically as the river has been drained and altered for human use. Now all four are targets of a massive rescue effort with a price tag expected to reach more than $200 million.

The razorbacks are raised at a hatchery near Grand Junction, then stocked in the nearby Colorado and Gunnison rivers as young adults. Biologists found the tiny larvae using light traps and fine-mesh nets. Scientists will continue to monitor the Gunnison River to see if the baby razorbacks develop into adults and spawn themselves. That answer won't be clear for some time, as it takes the fish 5-7 years to mature. They can live for 40 years or more.

In the meantime, another man-made flood is planned for the lower Colorado River in the Grand Canyon, but insufficient sediment buildup will likely delay those plans. Federal scientists are still conducting an environmental assessment to see whether they can continue with the plan they had hoped to carry out as early as January. But it appears the 2002 monsoon season never produced a storm large enough to generate the sediment needed to make the flooding beneficial.

"I don't believe we have enough sediment; we have to make that determination," said Barry Wirth, a spokesman for the Bureau of Reclamation. Even without a new flood within the next few months, scientists are looking at ways to use fluctuating flows and other tactics — electroshock — to reduce the number of nonnative trout and improve habitat for the endangered humpback chub.

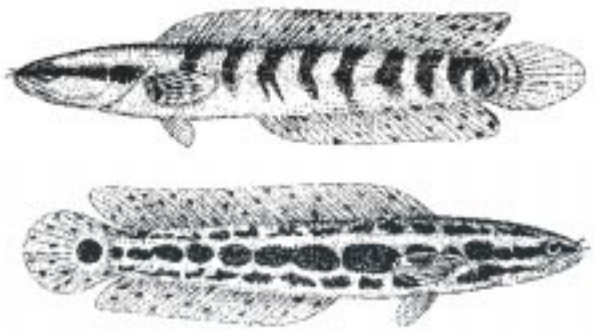
That part of the plan calls for using flows within the Glen Canyon Dam and Power Plant's regular management to help protect the endangered fish from nonnative trout, an aggressive predator of the chub, Wirth said. Fluctuating flows during the winter and early spring will be particularly important for managing trout numbers since the confluence of the Colorado River and the Little Colorado River is valuable chub habitat. "We're trying to reduce the presence of the trout there," Wirth said. Officials also would use electroshock to stun the trout and physically remove them with nets, leaving the chubs behind, he said.

In 1996, officials scoured the riverbed with a seven-day artificial flood in an effort to rebuild natural habitats that damming of the river 40 years earlier had destroyed. The results of that flood melted within months. Before Glen Canyon Dam's construction, natural flooding built up backwaters, eddies and sandbars with silt distributed from the Colorado's tributaries. Those landscape features within the river were considered essential to native plant and fish species, including the humpback chub and the razorback sucker.

Source: Todd Hartman, Rocky Mountain News, 10/1/02; and Arthur H. Rotstein, Associated Press and San Francisco Chronicle, 11/13/02

Snakeheads Listed — Yikes More Snakeheads!

The final rule adding the entire Channidae family of snakehead fishes (28 currently recognized species) to the list of injurious wildlife species under the Injurious Wildlife Provisions of the Lacey Act was published in the Federal Register on 10/4/02. Due to the highly predatory nature of snakeheads, and the increase in importations in recent weeks, this rule was effective upon publication, immediately prohibiting the importation and interstate transport of snakeheads.



African (above) and Asian (below) snakehead.

This listing sent some state law enforcement officers on an immediate seek and destroy mission to ferret out and destroy any snakehead stocks which may remain in their states. Such a statewide search in Kansas uncovered plenty of the toothy fish. Doug Nygren, Kansas Fish Chief said, "We are trying to covertly buy out the existing supply from fish markets and aquarium stores". Then we will come back to the

same dealers whose stocks were exhausted and try to buy more in order to detect any illegal activity.

Kansas law enforcement officers purchased one 15 lb. giant snakehead in Wichita. "It was an impressive specimen!", Nygren said. Kansas is moving to add the snakeheads to their own prohibited species list.

Meanwhile, Indiana has passed an emergency rule adding snakeheads along with white perch; bighead, black, and silver carp to their list of fish that are illegal to possess live in the state without a permit. Anglers must kill their catch. Lawful possession is possible through issuance of an Aquaculture Permit for legitimate medical, educational, or scientific research purposes. Accredited zoological displays are exempt.

Other states might be wise to follow the Kansas and Indiana leads on these issues. The final federal rule on the snakeheads can be found at http://policy.fws.gov/library/02fr62193.pdf. Such a federal ruling on black carp is still under consideration.

Paddlefish Ranching

The aquaculture program at Kentucky State University (KSU) has proposed raising paddlefish in several Kentucky reservoirs. The paddlefish would be cultured in the hatchery, stocked into the impoundments at high densities, and 10 years later harvested by commercial fishermen using gill nets. Most of the targeted impoundments are already heavily used for recreational fishing. Impoundments being considered for the experimental paddlefish ranching project are Beshear, Taylorsville, Barren River, Nolin River, Dewey, Herrington and Rough River lakes.

Paddlefish are presently being commercially harvested in many large rivers of the Mississippi River Basin, largely for their eggs which are then marketed domestically or exported to Europe and Asia as a replacement for sturgeon caviar. After the fall of the Soviet Union, poaching for the caviar industry nearly decimated most eastern European sturgeon stocks, placing increased pressure on other species such as paddlefish as a source of caviar.

The KSU paddlefish ranching proposal gained momentum after it was presented to a number of local politicians. Since then it has evolved into a plan that is said to be moving forward. Because of concerns raised by biologists and the public, the Kentucky General Assembly required that public hearings on the issue be held in September. Final action is still pending.

Concerns about the proposal include: loss of other fish to bycatch in the gill nets to be used during harvest, competition with sportfishing, and potential effects on trophic relationships (i.e. paddlefish are plankton feeders and large numbers of the species could compete with larval gamefish for food). Also, the lakes selected for paddlefish ranching are all impoundments on Ohio River tributaries, and the Ohio supports one of the only stable populations of native paddlefish in the region.

John Pitlo, Iowa DNR, with large Upper Mississippi River paddlefish.

Meanwhile, the Ohio DNR lists paddlefish as threatened in their state, even though there is a small paddlefish commercial fishery on the Ohio River. Finally, paddlefish are considered an interjurisdictional fishery managed jointly in the Ohio River Basin by Illinois, Indiana, Ohio, West Virginia, and Kentucky.

Influx of hatchery-origin fish from the paddlefish ranching project to the Ohio River is likely during high flows from the reservoirs. Biologists are concerned that such contamination by hatchery-origin fish could affect the Ohio River Management Plan, complicate the Ohio River commercial fishery and compromise the genetic integrity of the Ohio River paddlefish stocks.

Kansas Places Moratorium on Commercial Mussel Harvest

The Kansas Wildlife and Parks Commission has approved a 10-year moratorium on commercial mussel harvesting, effective 1/1/03 through 12/31/12. The action was taken at a public hearing in Manhattan on October 24.

Kansas Department of Wildlife and Parks staff had expressed concerns over declining mussel numbers in the state, and the topic had been discussed in several recent Commission meetings. Of the 40 species of mussels found in Kansas streams and reservoirs, 22 are included on the state's lists of endangered, threatened, and species-in-need-of-conservation.

During the early 1900s, mussels were extensively harvested as a source of pearl buttons. However, declines in mussel populations and the introduction of alternate materials for the button industry made the continued harvest of mussels unprofitable, and commercial mussel harvest fell off dramatically by the 1930s. Then in the 1960s, substantial demand for mussels reappeared when the cultured pearl industry began using them. Fragments cut from mussel shells were placed in live oysters to serve as a nucleus for development of cultured pearls.

Demand for mussels continued to fluctuate since the 1970s. In 1996, over 200 permit holders harvested more than 720,000 pounds of mussel shells from Kansas streams and reservoirs. However, the number of mussel harvesting permits sold in Kansas the past two years reflected little demand for shells. Only 10 permits were sold in 2001, and three in 2002.

For further information contact: Tom Mosher, Fisheries Research Coordinator, Kansas Wildlife & Parks, P.O. Box 1525, Emporia, KS 66801, (620) 342-0658

Arkansas/Oklahoma Phosphorous Wars Continue

Arkansas officials say Illinois River phosphorus levels have gone down since the Arkansas-Oklahoma Arkansas River Compact Commission set a goal of reducing phosphorus by 40%. Oklahoma officials are encouraged, but they're also suspicious. How is it, they ask, that phosphorus levels just a few miles downstream are higher than

those reported by Arkansas?

Emon A. Mahony Jr., an Arkansas commission member, suggested that Oklahoma might be doing something in the 15-mile stretch between the two sampling sites to kick up phosphorus levels. Not so, said Duane Smith, a commissioner and director of the Oklahoma Water Resources Board. The site where Oklahoma measures is close to the Arkansas state line. "It's not Oklahoma," Smith said. "It's Arkansas."

The disagreement about the Illinois River's phosphorus levels was a key point of contention at a late September committee meeting of the Compact Commission. It was also another indication that the two states who talk of working together to reduce river phosphorus levels remain skeptical of one another. Mahony wondered aloud why Oklahoma didn't work through the Compact Commission before setting a numeric phosphorus limit earlier this year. Oklahoma's limit of 0.037 milligrams of phosphorus per liter of water in six of its scenic rivers affects Arkansas because four of the waterways start trickling westward from Arkansas.

"Why did you decide not to utilize the compact and instead go it alone?" Mahony asked Derek Smithee, water quality director for the Oklahoma Water Resources Board. Smithee said the Compact Commission shouldn't set water quality criteria, but should help implement it. Later, Smith said he felt Arkansas believed that Oklahoma has played unfair by setting its numeric limit. He said Arkansas over the years hadn't done enough to remove phosphorus from the Illinois River, and he said Arkansas failed to put limits on phosphorus discharges from sewer plants. Only Fayetteville has a phosphorus limit on its sewer-plant discharges. "We looked across the border, and we don't think Arkansas played fair," Smith said.

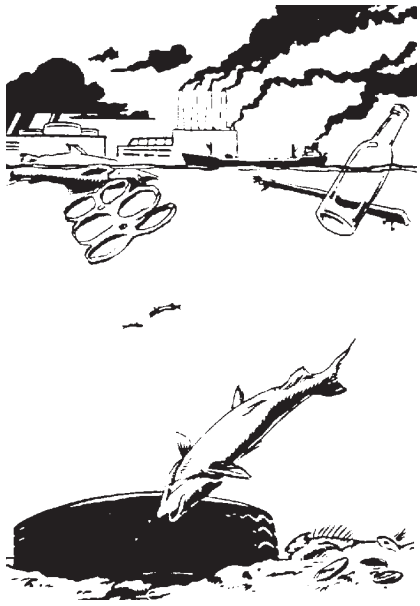
The commission report showed 130,839 kg of phosphorus was the average yearly amount from 1997 to 2001 at a point near Siloam Springs, AR. That's a 31.3% cut from the 13-year average of 190,555 kg that flowed in the river from 1980 to 1993. But 15 miles downstream at Oklahoma's measuring point at Watts, phosphorus was recorded at 144,122 kg/yr. That's higher than the 124,832 kg that flowed at the same spot from 1980 to 1993.

Marc Nelson of the Arkansas Water Resources Center at the University of Arkansas, Fayetteville, does his own sampling of the river, and his research shows increasing phosphorus levels. "I cannot see a decrease," Nelson said when Smith asked him whether the river's phosphorus was up or down. "I can only see an increasing trend." Nelson also managed to offer a reason why phosphorus would decrease in Arkansas and increase in Oklahoma. He said it could be Lake Francis, a wide spot in the Illinois River that's loaded with phosphorus-laden sediment. "It's possible that the sediment is being stirred up and it's moving downstream," Nelson said. "We definitely know it's contributing." Smithee liked Nelson's answer. "That's plausible," he said.

Source: Robert J. Smith, Arkansas Democrat-Gazette, 9/26/02

Gulf Hypoxia and the Upper Midwest

The hypoxia zone or oxygenless dead zone of the Gulf of Mexico has been largely attributed to the effects of the use of excess fertilizers in Upper Midwestern states and its associated runoff via the Mississippi River and tributaries.



Now the Fertilizer Institute and the American Farm Bureau Federation and others have weighed in with their own points. It is simple to detect excess nitrogen in the waterways, they said, but nobody can prove if it is from farm fertilizer, manure, lawn fertilizer, urban sewage or naturally rich soil. If it is from fertilizer, then why has the dead zone nearly tripled in size since the late 1980's, while fertilizer use leveled off?

"There are millions of square miles of the oceans that are naturally hypoxic," said Illinois State Water Survey chief Derek Winstanley, who argues that the dead zone may have lurked in the gulf for centuries. "We need to be looking at other causes." It is true that "nitrogen doesn't have a fingerprint," said John Dunn, an engineer at the USEPA's Kansas City regional office. However, studies by the USGS clearly show the bulk of the nitrogen flux that fuels gulf hypoxia flows through farm states north of the Missouri Bootheel, where the Ohio River meets the Mississippi.

The two most nutrient-heavy states — Iowa and Illinois — together are thought to supply more than 35% of the nitrogen flux throughout the vast river basin. Missouri is among four states that each contribute between 6 and 9% of the total nitrogen flow, said Donald Goolsby, a retired USGS hydrologist. Kansas contributes less than 5%. Goolsby said the levels are relatively low in the Missouri and Kansas rivers because of drier conditions and the kinds of crops grown in the plains from which those rivers flow.

All major indicators, he said, point to nitrogen fertilizer washing through corn and soybean fields. "I'm sure overfertilized golf courses in some places would contribute, as would the fertilizer people put on urban lawns," Goolsby said. "It all contributes... "But if you look at the real hot spots for this nitrogen discharge, they're not high-population areas. They're not places with huge wastewater plants or industrial emissions. It's cropland."

Homeowners who fertilize their lawns often use twice the nitrogen concentration that farmers apply. Golf courses might use five times the concentration, as much as 900 lb/acre, Dunn said. However, Minnesota soil specialist Randall said nitrogen is far better retained in the dense root systems of backyard turf than it is in cornfield rows. (Just don't spill fertilizer on your sidewalks, he advised.)
As for fairways and putting greens are concerned, researchers raise questions of simple square footage. As Jeff Bollig of the Lawrence-based Golf Course Superintendents Association of America notes: "The combined land mass of all the golf courses in the U.S. amounts to only half the size of Connecticut," smaller even than the dead

zone itself.

Estimates of the USGS and other research groups break down sources of nitrogen flux in the Mississippi River basin as follows:
- Most of it — perhaps 60% — comes from fertilizer, plant debris and minerals from soil fodder.
- About 15% is linked to animal manure.
- Between 10 and 19% is traceable to "point sources" such as municipal treatment plants and large slaughter operations, which can be easily monitored by regulators.
- "Other," including urban runoff and atmospheric nitrous oxide, contributes the rest.

Some experts point to the Black Sea as further evidence that heavy fertilizing breeds dead zones. A hypoxic area even bigger than that of the Gulf of Mexico's sickened the Black Sea for decades until the mid-1990s. The return of oxygen there followed the Soviet Union's collapse — farmers lost their state-issued fertilizer.

Don Fischer of Corder, MO says, "Farmers get blamed for everything...We may be causing some of the problems, but we're not causing all the problems." Yet he represents one of the solutions. Corder, past president of the Missouri Corn Growers Association, farms over 600 acres of land in the Kansas City area — land he has farmed for over a half-century. After hearing enough complaints about nitrogen runoff, Fischer, cut his fertilizer back to 130 lbs/acre. "It used to be maybe 200 lbs if I was looking for that big yield," he said.

Fischer learned he could still reap a decent crop and save $17/acre on fertilizer costs, he said. But an even bigger incentive was his belief that if farmers did not take their own steps to cut nitrogen levels, the government might make them. "Farmers are willing to try to solve problems if they can do it on their own," he said. Bob Ball agreed. "Their biggest concern is over some agency regulating their way of life," said Ball, a conservationist for the Natural Resources Conservation Service. "We don't try to persuade them that they're causing problems in the gulf. But if we point out that fertilizer leaving their fields isn't doing anybody any good, they understand that." Experts note that strict rules on fertilizer use are not likely at this time. So policy makers are promoting voluntary programs, including incentives for restoring wetlands that could absorb excess nutrients before they reach the gulf. Congress is expected to pump about $700 million next year into the Environmental Quality Incentives Program. It provides 75% of the costs to farmers implementing earth-friendly measures, such as planting strips of trees and grasses to buffer streams from crops.

Hypoxia forums — including one scheduled this fall in St. Louis — are bringing together farmers, fishers and gulf ecologists to seek solutions short of the federal mandates so feared by farm lobbies. "We want to bring those different worlds together and look at the Mississippi River as one system," said Doug Daigle of the Mississippi River Basin Alliance, an ecological coalition. "Farmers and fishermen are learning they actually have a lot in common." But nobody expects the dead zone, or the debate, to just go away.

Source: Rick Montgomery, Kansas City Star, 10/21/02

Big Sunflower River Project Put on Hold by Court

The Mississippi Supreme Court has reversed the Department of Environmental Quality (DEQ) grant of certification for the Corps of Engineers' Big Sunflower River Maintenance Project because the DEQ failed to make adequate findings or explain the reasoning for its decision. The Court remanded the certification to the Chancery Court with instructions to forward it to the DEQ for more findings and analysis.

The Big Sunflower channelization project involves the dredging of over 100 miles of stream and the clearing of over 28 miles of several rivers to alleviate flooding in the Yazoo-Mississippi Delta. The project would alter nearly 1000 acres of forested wetlands and destroy 43% of the mussel beds in effected areas.

The Sierra Club argued that DEQ failed to adequately consider several factors before granting water quality certification, including feasible alternatives to the project, mitigation measures, impacts on Mississippi waters, and the compliance history of the Corps. The USEPA and U.S. Fish and Wildlife Service proposed a non-structural alternative which the Corps rejected as too costly and ineffective, but the Sierra Club contended that the Corps used faulty land values in its calculation of cost and demonstrated that the non-structural alternative would actually cost less than the proposed project. Nonetheless, DEQ adopted the Corps' conclusions without explaining why.

DEQ found that the Corps would adequately minimize adverse impacts, but the court noted that the Corps did not specify expected impacts or list exactly what mitigation measures were considered. DEQ also failed to supply the court with findings of impact on Mississippi waters or to analyze the Corps' compliance history. As a result, the court remanded the case back to the DEQ for reconsideration and further findings and analysis. So for now, the project remains on hold.

Source: S. Beth Windham and Magnolia, Bravo, Water Log, 11/2/02

Iowa Hog Producer Fined $33 Million

Iowa's largest hog producer was hit with a $33 million court judgment in October in a nuisance lawsuit brought by a group of Sac County property owners. The award is believed to be the largest against a livestock-confinement operation in Iowa and could be the largest in the nation. "This sends a message that these factory farms have got to clean up their act," said Hugh Espey of Iowa Citizens for Community Improvement, an organization that opposes large-scale hog confinements.

The lawsuit was filed two years ago by Doug and Karen Blass, James and Susan McKnight, John and Jan Hendrickson, and Gary and Melissa Langbein. The four couples sued Iowa Select Farms, one of the nation's largest commercial pork producers. They alleged that the company's Sac County hog confinement produced offensive odors, noxious gases and excessive flies.

The case was decided by a Sac County jury, which awarded the eight plaintiffs $1.06 million in compensatory, or actual, damages, plus $32 million in punitive damages.

Thomas Lipps, the plaintiffs' attorney, said the punitive damages appeared to be based on his contention that Iowa Select Farms willfully and recklessly located a 30,000-hog facility on a 640 acre parcel of land without regard to its impact on neighbors.

During the trial, an expert witness for the plaintiffs testified that one hog produces the same amount of excrement as three to five people. Lipps said that meant the farm was producing the same amount of waste as a city of 90,000 to 150,000 people. All the plaintiffs were farmers, he said. Last year, an Ohio jury awarded $19.2 million to 21 property owners who sued a large-scale poultry farm because of environmental issues. According to the National Law Journal, that award was then the largest-ever nuisance judgment against a farming operation.

Source: Clark Kauffman, Des Moines Register, 10/10/02

Duck Manure Electricity

We Energies will begin buying power from a facility that will use duck manure to help generate electricity. The step is part of the company's growing renewable energy program. The contract calls for Maple Leaf Farms of Franksville, near Racine, WI to build, own and operate the plant, which will produce 200 kilowatts of electricity. That's enough to power about 75 homes. The plant began producing electricity this summer, We Energies said.

The deal will help Wisconsin Energy Corp., the parent of We Energies, comply with a state mandate that utilities generate a small percentage of their power using renewable energy. State laws require that by 2011, Wisconsin utilities begin generating 2.2% of their power using renewable energy sources. The laws require that the utilities continuously boost their use of renewable sources gradually, said Annemarie Newman, a spokeswoman for the state Public Service Commission.

"The energy generated by this project will help us achieve the goals we recently set as part of our renewable energy program, which is to have at least 5% of our electric energy sales coming from renewable sources by 2011," said Chris Iglar, a We Energies spokesman. "That's more than double the state's requirement." The company also plans to spend another $6 million yearly over 10 years to reach its renewable energy target, Iglar said.

Duck manure contains methane, which also is found in natural gas. Maple Leaf Farms will store manure in a barn-like facility called a digester, which captures the methane that the manure releases as it decomposes. Capturing methane from animal waste has both environmental and aesthetic benefits. Methane is 20 times more potent as a greenhouse gas than carbon dioxide.

We Energies already purchases electricity from a similar plant in Wrightstown, near Kaukauna. But that plant — Tinedale Farms — uses cow manure instead of duck manure. The electricity generated from the duck farm will provide part of the generation mix used to provide power in the We Energies territory, which covers more than a million electric customers and about 970,000 natural gas customers throughout Wisconsin and Michigan's Upper Peninsula. Altogether, We Energies said, it is generating 140 megawatts of power via renewable energy

Source; Lee Hawkins, Jr., Milwaukee Journal Sentinel, 10/15/02

Farm Runoff Linked to Male Fertility Issues

Men living in agricultural mid-Missouri are markedly less fertile than men living in New York, Minneapolis and Los Angeles, researchers at the University of Missouri-Columbia have found.

The researchers suspect that runoff from farm chemicals may be to blame. The results "are important to couples that are trying to conceive," said research professor Shanna Swan, who led the study. "If we can find out what specific exposures were related to this reduced semen quality, we might be able to prevent delays in conception in the future."

Swan said she hopes the study prompts further inquiry into how agricultural chemicals negatively affect people's bodies. The study, conducted between 1999 and 2001, found that, on average, fertile men in Columbia produced 58.7 million sperm/ml of semen, compared with 80.8 million for men in Los Angeles, 98.6 million for men in Minneapolis and 102.9 million for men in New York City.

On another important measure, sperm mobility, fertile men in Columbia also lagged behind their urban counterparts. On average, fertile men in Columbia produced just 113 million mobile sperm per sample, compared with 162 million in New York, 196 million in Los Angeles and 201 million in Minneapolis. Swan measured mobile sperm by the sample, not by the ml, as was used to measure the number of all sperm. "If you follow couples trying to become pregnant, those that have better semen quality do conceive more quickly," Swan said.

Swan's research corroborates an earlier study that found lower sperm counts among men in Iowa City, IA, the only other semiagricultural region used in a U.S. semen-quality study. That 1974 study found the sperm concentration of Iowa City men was 48 million/ml of semen. Swan did not connect lower sperm counts and quality to particular agricultural chemicals. But the study does highlight the significant difference in land use among the other sites studied. According to the U.S. Department of Agriculture, Swan wrote, about 57% of the land surrounding Boone County, where Columbia is located, was used for agriculture, compared with 19% in Minneapolis, 5% in Los Angeles and 0% in New York.

The study recruited 512 men whose pregnant partners were visiting hospitals for prenatal care in Columbia and the three other cities. Researchers noted where the men had lived before moving to Boone County, if they were not Boone County natives. Swan said even very recent exposure to farm chemicals, not just long-term exposure, could affect one's health.

The Missouri study was published in the November 11th edition of Environmental Health Perspectives, the scientific journal of the National Institute of Environmental Health Sciences. The unit of the National Institutes of Health provided Swan a $2.8 million grant to conduct the research.

Swan, who has been a professor at the University of Missouri's School of Medicine for four years, said she plans to publish a research article also based on the study's data that deals with specific agricultural chemicals. Swan said she also would like to follow the children delivered by the women whose partners participated in the study to see whether where they were conceived - an agricultural or urban area — affected their future health.

"Semen quality doesn't get affected in a vacuum," Swan said. "We might call it the canary in the mine shaft. It indicates other potential reproductive problems because it relates to testicular function. "There may also be problems in the woman's reproductive function. And there may be indications in other health areas, perhaps links to cancer down the line."

One might wonder what this all has to do with aquatic resources, but many of the same problems have been observed in fish — even sex reversal in fish is thought to be caused by man-made chemicals in the water.

Sources: Baltimore Sun and Knight Ridder, 11/12/02

State-of-the-Science of Endocrine Disruptors

On August 12, 2002, the International Programme On Chemical Safety (IPCS) released "Global Assessment of the State-of-the-Science of Endocrine Disruptors."

The conclusion of this report is best summarized in this extract from its Executive Summary: "Overall the biological plausibility of possible damage to certain human functions (particularly reproductive and developing systems) from exposure to endocrine disrupting chemicals (EDCs) seems strong when viewed against the background of known influences of endogenous and exogenous hormones on many of these processes. Furthermore, the evidence of adverse outcomes in wildlife and laboratory animals exposed to EDCs substantiates human concerns. The changes in human heath trends in some areas (for some outcomes) are also sufficient to warrant concern and make this area a high research priority, but non-EDC mechanisms also need to be explored."

The report underlines that the adverse trends in human health warrant concern. It also confirms the strong plausibility of damage to humans from exposure to EDCs, particularly due to the evidence of adverse outcomes in wildlife and laboratory animals. The report is thorough and highlights just how many adverse effects might be linked to EDCs. However, the report is also very scientifically cautious by not accepting endocrine disruption unless there is enough evidence that the chemical in question acts principally via disruption of the endocrine system.

It is not enough for a chemical to be shown to alter hormone levels, nor for an impact to be causally linked to that chemical. Unless the mechanism of action in that specific example is established to be mediated by the endocrine system (rather than the changes in the endocrine system being a consequence of another mechanism of toxicity) — then the evidence is judged to be weak. This is what the report implies when, as noted in the extract above, it states "but non-EDC mechanisms also need to be explored."

It is worth remembering that epidemiological research in 1952 demonstrated that smoking caused lung cancer, but the probable causal mechanism was not found until 1996, and even this is still not universally accepted. DDT is another good example of the delay between evidence of effect and proof of the mechanism. The IPCS report acknowledges that DDT, via its degradation product, caused eggshell thinning, leading to broken eggs and other adverse reproductive effects in several bird species. However, as the report states, "[the] mechanism of eggshell-thinning has never been completely deduced" and there are several hypotheses. Therefore, the report highlights that "it cannot be stated with certainty that it is indeed a result of endocrine disruption."

However, what really matters from a regulatory point of view is the end-result of the exposure, not whether the mechanism of action is known with certainty. It would be totally unacceptable for regulation of chemicals of concern to wait until the precise mechanism of action was known. It is always very difficult to prove that adverse trends in human health are actually caused by any particular contaminant(s).

In conclusion, the IPCS report demonstrates the range of wildlife and human health impacts that could be caused by chemicals with endocrine disrupting properties. Research has shown that vast numbers of aquatic species are being affected by exposure to EDCs, for example the female egg yolk protein, vitellogenin, is produced by juvenile and male fish in a variety of water bodies across Europe, Japan, and North America. There is also, as stated in the IPCS report, "considerable circumstantial and experimental evidence concerning the impact of contaminants with endocrine disrupting properties on immune function in mammalian wildlife."…"One example of where this mechanism might be involved is the contaminant induced immune suppression that has been proposed to contribute to the mass mortalities of marine mammals…". Action needs to be taken now to regulate the production and use of chemicals with endocrine disrupting properties — it is not acceptable to delay controls for which there is reasonable scientific evidence whilst we search for absolute proof of the mechanism of action.

The IPCS is a cooperative programme under the United Nations Environment Programme (UNEP), the International Labour Organisation (ILO), and the World Health Organization (WHO). The two main roles of the IPCS are to establish the scientific health and environmental risk assessment basis for safe use of chemicals and to strengthen national capabilities for chemical safety.

Source: World Wildlife Fund Analysis, August 2002

Privatization of the Corps

As part of a sweeping and controversial restructuring of the Army, the Bush administration has ordered the Army Corps of Engineers (Corps) to open its entire civil works program to competition from private businesses. In an October 4 memo to top subordinates, Army Secretary Thomas White said the Army must focus its energies on "core competencies" while obtaining other goods and services from the private sector when that makes sense.

Among Army operations which White placed outside that core category is the Corps' civil works program, which encompasses hundreds of flood-control and river navigation projects across the country. Up to 32,500 military and civilian employees could be affected.

In an agency-wide e-mail on October 10, Lt. Gen. Robert Flowers, Corps commander

acknowledged that employees have concerns, but said he didn't know enough details to gauge the impact of White's memorandum. "I would like to be able to tell you that we have all the answers to your questions, but at this point, we don't," Flowers wrote.

Regarding Secretary White's October 4 memorandum, Flowers email said, "These are positions considered to be not in direct support of the Army's war-fighting mission that could possibly be performed by other federal agencies or the private sector. This requirement is in support of President Bush's management initiatives for government." He pledged that Corps brass would do their best to make higher-ups understand that "the entire Corps is 'core'."

Under one timetable, Corps officials would have until December to develop a game plan for competition, with implementation to follow at some point after next March. A spokesman for the Corps' district office in New Orleans said it's unclear how White's proposal will affect operations. But he said the Corps already is using outside resources and contractors for much of its public works projects.

"The Corps has for a long time been moving from doing everything itself to using outside companies that are competitive in price," John Hall said. "The people who work for the Corps now are, by and large, office workers who seek bids and manage projects and so forth." He said the Corps still owns and operates some large equipment, in case of emergencies and private contractor scheduling conflicts. "One example is private dredging," he said. "The Corps' dredging fleet today is minimal, just to assure that there are no problems in case private dredges aren't available to keep the port of New Orleans open."

In recent years, the Corps has come under heavy criticism in some circles for embarking on costly and environmentally questionable projects with dubious economic returns. Defense Secretary Donald Rumsfeld reportedly is angling to split the Corps and shift its responsibilities to the Interior and Transportation departments.

To advocates of the practice, privatization of government work offers the opportunity to produce more bang for the taxpayer buck. In his memo, White wrote that the Army had to free up resources quickly for the war on terrorism. The military simply seeks the "best value," Army spokesman Maj. Rudy Burwell said. "It could be in-house. It could be contracted." For federal workers, however, the possibility of privatization inevitably stokes worries about job security, salary and benefits. At the American Federation of Government Employees, a Washington-based union representing some 600,000 workers, Public Policy Director Jacqueline Simon said White is bent on steering contracts to administration friends by bypassing the regulations used for past public-private competitions. "The taxpayer gets the shaft," Simon said, adding that the plan would also have a "terrible" effect on military readiness. Burwell declined to comment on those allegations.

Without question, however, White's proposal dwarfs the Army's two previous forays into privatization. Along with the Corps, more than a dozen other Army organizations would be pushed to open their jobs to competition. Almost 214,000 employees could be affected in all, about three-quarters of them civilians.

Rep. Sonny Callahan, R/AL, who chairs the congressional panel that drafts the Corps' annual budget, said lawmakers have temporarily blocked any transfer of the agency's functions because Congress has yet to finish its work on fiscal 2003 spending bills. Callahan, who is retiring when his current term ends in January, said, "I remain hopeful" that the Defense Department will consult Congress before proceeding with any changes in the Corps' civil works responsibilities.

Sheldon Morgan, president of the Warrior-Tombigbee Waterway Association, predicted privatization would fragment such interlocking missions as flood control and

keeping rivers fit for ship traffic, with devastating results. "You can't separate them; it's like cutting off your arm or leg," said Morgan, whose association represents commercial users of the dredged channels and locks that allow barge traffic connecting the Tennessee River and Gulf of Mexico.

But at Business Executives for National Security, a nonpartisan policy organization in Washington that pushes for greater efficiency in defense spending, analyst Paul Taibl said the Army is following the lead of many corporations by trying to refocus on core missions. "That doesn't mean that the Army won't have to go through a fairly rigorous process before it decides to outsource," Taibl said. "The way the federal rules are written today, it's pretty restrictive." He said federal employees should get "a fair shake" in competing for their jobs.

Howard Marlowe, a Washington lobbyist who represents communities seeking to tap into the Corps' growing role in beach renourishment, saw reason for both worry and optimism. On the down side, Marlowe said, Corps bureaucrats typically take 7 to 15 years from the first study to actually put sand on a beach. On the other hand, he said, communities get high-quality work and a 50-year warranty on beach maintenance. "We don't want to lose that in any way, shape or form," Marlowe said.

Sources: Sean Reilly, Newhouse News Service, 10/17/02; and New Orleans Times-Picayune, 10/17/02

Corps Still "Cooking the Books"?

Two years after the U.S. Army Corps of Engineers (Corps) became enmeshed in controversy over its attempts to manipulate an economic study of a proposed lock expansion on the Mississippi River, the economist who originally brought the issue to light says the Corps is still cooking the books to justify the project.

Donald Sweeney, the Corps economist who revealed two years ago that agency officials pressured him to manipulate the Upper Mississippi River Feasibility Study, said on November 10 that the Corps is still conducting its research in a way that greatly overestimates how much barge traffic the river will sustain in coming years. "The model they adopted is self-serving and will not shine any light on the potential benefits of longer locks," he said.

Since 1993, the Corps has been studying the

feasibility of installing longer locks over a large portion of the river as a way to relieve congestion and facilitate barge traffic. In order for the study to receive congressional authorization, the benefits of the project must outweigh the costs, and Sweeney says the Corps ordered him to rig the study to produce that result. Investigations by the Corps Inspector General and National Academy of Sciences verified Sweeney's allegations.

But in its most recent version of the study, an interim report released in July, Sweeney said the Corps has once again chosen to use an economic model that would exaggerate the amount of future barge traffic. Accord-

ing to Sweeney, the Corps' model does not consider the possibility farmers on the Upper Mississippi may choose to ship their grain using means other than barges, to locations other than river terminals.

Sweeney said, "They eliminate the real-world alternatives people have when faced with congestion on the river." "Their model assumes people will continue to ship on the river regardless of cost. But producers on the Mississippi River have many options — they can ship to ethanol plants, feedlots, crushing plants or other buyers. There are a whole host of options that real-world businesses have when making transportation decisions."

Sweeney said that despite steady or slightly declining barge traffic at most Upper Mississippi locks over the past 20 years, the Corps economic models predict significant increases in barge traffic at those locks in the years to come. Out of five potential scenarios predicted by the Corps for future grain shipments, only one shows the shipments declining.

Denny Lundberg, Corps study manager, said the agency has acknowledged its economic model is not perfect and is working to develop a better one. But he said a model of the type Sweeney recommends using would not be available for years. "We indicated in the report that there is a weakness in the model," he said. "We stressed that was a limitation, but that's the only thing available right now. There wasn't enough time within the confines of completing the feasibility study to complete a new economic model."

Although the Corps is working to develop the "spatial equilibrium" model Sweeney pioneered during his time on the project, that work is being kept largely separate from the Mississippi River study, Lundberg said. He also stressed that the Corps is taking steps to address environmental concerns on the Upper Mississippi. Environmentalists oppose the proposal to expand locks on the river, saying the effort would further degrade an already-beleagured ecosystem. "We have restructured the study so we're not only going to be evaluating alternatives to relieve congestion but also to restore ecosystems," Lundberg said.

But environmentalists are skeptical, saying the plans for ecosystem restoration are likely just empty promises. "The Corps has not committed to implementing the restoration plan," said Scott Faber of Environmental Defense. "There have been promises of restoration in the past, but they still have not done the restoration that was supposed to go with the last lock and dam project."

Both Sweeney and environmentalists also scoff at the notion that it would take seven years, as the Corps is claiming, to complete a new economic model. And even if it did take that long, they say, the Corps construction backlog would make it impossible for the agency to begin work before 2010 at the earliest. But Paul Rohde, vice president of the Upper Mississippi River Basin Coalition MARC 2000, said that if the Corps used a new economic model that considers other transportation options for shipping grain, the study would still find lock expansion to be justified. "If they considered all the transportation alternatives it would still point toward towboats and barges being the most efficient and economically feasible way to move the tonnage we're talking about," he said.

Source: Damon Franz, Greenwire 11/15/02

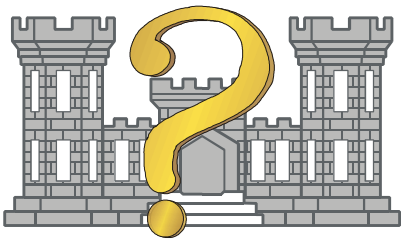
Gag Order on Corps Economist

The U.S. Army Corps of Engineers (Corps) threatened disciplinary action against Dr. Donald Sweeney one of its economists (See previous article) for answering media "questions concerning any past, present or future projects," according to a Public Employees for Environmental Responsibility (PEER) news release. The directive was issued to Sweeney in connection with his being awarded a "Service to America Medal" for exposing the Corps' manipulation of economic studies to justify building unneeded large-scale projects on the Mississippi River.

The Service to America Medal is a newly created award sponsored by the Partnership for Public Service and Government Executives to honor extraordinary acts or achievement by career civil servants. Dr. Sweeney received the medal and a $3,000 honorarium on November 12 at a black tie gala featuring White House Chief of Staff Andrew Card.

Despite high-level participation by Bush Administration officials, the Corps Engineers ordered Dr. Sweeney not to comment on any of the events leading to his award.

"This gag order illustrates how corrupt and out-of-control the Corps has become," stated PEER Executive Director Jeff Ruch whose organization provides legal representation for Dr. Sweeney and nominated him



for the award. "Although Don Sweeney is being honored for service to America, his own agency treats him like a prisoner-of-war, allowed to reveal only his name, rank and serial number."

In a November 7 conference call between Ruch and Corps lawyers, Mississippi Valley Division Counsel Annette Kuz contended Dr. Sweeney's comments about his own case would be "disruptive" to the agency and the basis for disciplinary action against him. Dr. Sweeney informed the Corps he would attend the event on his own time and planned to speak as a private citizen. Dr. Sweeney disregarded the gag order.

In February of 2000, Dr. Sweeney filed a disclosure with the U.S. Office of Special Counsel detailing efforts by top Corps

commanders to "cook the books" on economic studies. His allegations were validated in a Pentagon investigation and review by the National Academy of Sciences. Two Corps generals and a colonel were disciplined.
Despite the furor, the project, reconstruction of the lock system for the Upper Mississippi River-Illinois Waterway (second in cost only to restoration of the Everglades), is now proceeding without incorporating any of the Dr. Sweeney's critiques. At the same time, the issues Dr. Sweeney raised are central to an ongoing congressional debate about the need to reform Corps civil works planning.

Source: Kim McKeggie, PEER News Release, 11/13/02

MICRA-like Organization Being Formed for International Transboundary Rivers

There are 261 transboundary rivers in the world, the basins of which are shared by at least two countries and cover an area of about two-thirds of the continents and host two-fifths of the world population. Fifteen percent of the countries depend on more than 50% of the water resources of upstream countries. Iraq, Sudan, Syria, Egypt, Paraguay, Niger, Congo, Gambia, Botswana, Mauritania, Luxembourg, Romania, the Netherlands, Bulgaria and Hungary receive more than 2/3 of their water resources from bordering countries.

Although many past agreements have been signed between riparian countries to ensure free navigation on transboundary rivers in past centuries, and since the end of the 19th century, to build hydropower dams, today, there are still few agreements, conventions or treaties dealing with pollution control, aquifer management and integrated management of shared river basins.

Similar problems were faced by Mississippi River Basin states when they formed MICRA in the late 1980's. Now appropriate integrated management of rivers, lakes or aquifers, shared by several riparian countries, has become of strategic international significance. This is what lead the International Commission for the Protection of Geneva Lake and the French Rhone-Mediterranean-Corsica Water Agency to propose to organize the first constitutive meeting of a new Network of Transboundary Basin Organizations. The initial organizational meeting was planned for late November.

The objective of the Network is to enable executives and technicians of existing organizations to (1) better know each other and exchange their experiences, (2) compare approaches and methods and thus facilitate the creation and strengthening of new organizations adapted to transboundary basins throughout the world, (3) develop cooperation between the countries concerned, and (4) apply principles of integrated water resource management which support projects dealing with the creation or strengthening of organizations managing transboundary basins.

As in the Mississippi River Basin, such organizations can only help to better manage and protect the world's important freshwater fishery resources. See www.riob.org for more details on the INBO Network

Meetings of Interest

Jan 6-8: MICRA Paddlefish/Sturgeon Committee Meeting, Sheraton Westport Plaza Tower Hotel, St. Louis, MO, (314) 434-5010 or (800) 325-3535. Contact: Bobby Reed, Chairman, (337) 491-2009, reed_bc@wlf.state.la.us

Feb 11–14: International Symposium on the Management of Large Rivers for Fisheries: Sustaining Livelihood and Biodiversity in the New Millennium, Phnom Penh, Cambodia. See: www.LARS2.org

Feb 18–21: Aquaculture America 2003: New Frontiers in Aquaculture, Louisville, KY. See: http://iep.water.ca.gov/calfed/sciconf/2003. Contact: worldaqua@aol.com, 760/432-4270.

Feb 19–21: 25th Annual Southeastern Recreational Research: Celebrating 25 Years of Dynamic Recreational Research, Asheville, NC. Contact: Katrina Krause, 706/559-4244, kkrause@fs.fed.us.

Feb 23–26: 2003 RecFish II Symposium, St. Petersburg Beach, FL. Contact: William Price at Bill.Price@noaa.gov.

Mar 16–19: 2003 Freshwater Mollusk Conservation Society Symposium: Connections...A Focus on Habitat Conservation, Durham, NC. See: http://elipse.inhs.uiuc.edu/FMCS/Symposium. Contact: John Alderman, 919/542-5331, aldermjm@mindspring.com.

Mar 23-27: The Future of Aquatic Ecosystems. Zurich, Switzerland. Organized by the Foundation for Environmental Conservation and Swiss Federal Institute of Environmental Science & Technology (EAWAG). See http://www.icef.eawag.ch. Contact: icef@eawag.ch

July 6-11: Ninth International Conference on River Research and Applications, New South Wales, Australia. See http//:www.conlog.com.au/NISORS. Contact: Ms. Elizabeth Medley, conference@conlog.com.au or A/Professor Martin Thoms, thoms@scides.canberra.edu.au

June 8-11: Eighth National Watershed Conference, Harrahs Council Bluffs Casino & Hotel, Council Bluffs, IA. Contact: National Watershed Coalition, 9304 Lundy Court, Burke, VA 22015-3431, (703) 455-6886/4387, FAX (703) 455-6888 or jwpeterson@erols.com or www.watershedcoalition.org

June 9-12: 12th International Conference on Aquatic Invasive Species, Ontario Ministry of Natural Resources, Windsor, Canada. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776 or profedge@renc.igs.net. Also visit: http://www.aquatic-invasive-species-conference.org

June 17–19: AFS Propagated Fishes in Resources Management Symposium, Boise, ID. See: www-heb.pac.dfo-mpo.gc.ca/congress/pfirm/

Aug 21-22: Maritime Environmental Engineering Technical Symposium 2003. Arlington, VA. Contact David Breslin, BreslinDA@navsea.navy.mil

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

Aug 20-23: AFS Early Life History Section 27th Annual Larval Fish Conference, Santa Cruz, CA. See www.lfc2003.com. Contact: info@lfc2003.com, 831/420-3900.

Aquaculture and Marketing

S. 1494: Lincoln (AR) and 6 Co-sponsors. To amend the Federal Food, Drug, and Cosmetic Act to limit the use of the common name "catfish" in the marketing of fish.
S. 1898: McConnell (KY). To establish the Green River National Wildlife Refuge in the State of Kentucky.

H. R. 2439: Ross (AR) and 10 Co-sponsors. To amend the Agricultural Marketing Act of 1946 to require that retailers of farm-raised fish inform consumers, at the final point of sale, of the country of origin of the commodities.

Corps of Engineers Reform

H. R. 1310: Kind (WI) and 13 Co-sponsors; S. 646: Feingold (WI); and S. 1987: Smith (NH) and 2 Co-sponsors. To reform the Army Corps of Engineers.

H. R. 2353: Tancredo (C)) and 5 Co-sponsors. To revise certain policies of the Army Corps of Engineers for the purpose of improving the Corps' community relations, and for other purposes.

Endangered Species Act (ESA) Amendments:

- S. 911: Smith (OR) and Baucus (MT). To reauthorize the ESA of 1973.
- S. 347: Thomas (CA). To improve the listing, recovery planning, and delisting, and for other purposes.
- S. 1912: Smith (OR) and H. R. 2829: Walden (OR) and 6 Co-sponsors.. To require the Secretary of the Interior and the Secretary of Commerce 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. 1402: Thomas (CA). To reform the regulatory process under the ESA.
- H. R. 2409: Otter (ID) and Simpson (ID). To vest in the Secretary of the Interior functions under that ESA with respect to species of fish that spawn in fresh or estuarine waters and migrate to ocean waters, and species of fish that spawn in ocean waters and migrate to fresh waters.
- H. R. 3705: Pombo (CA). To require the Secretary of the Interior to use the best sound science available in implementing the ESA.
- H. R. 4579: Miller (CA) and 77 Co-sponsors. To ensure the recovery of our Nation's declining biological diversity; to reaffirm and strengthen this Nation's commitment to protect wildlife; to safeguard our children's economic and ecological future; and to provide assurances to local governments, communities, and individuals in their planning and economic development efforts.

Federal Water Pollution Control Act (FWPCA) Amendments:

- S. 678: Bond (MO) and - H. R. 325 : Tanner (TN) and 11 Co-sponsors. To establish a program for fisheries habitat protection, restoration, and enhancement, and for other purposes.
- H. R. 1474: Jones (NC) and 16 Co-sponsors. To address wetlands mitigation banking, and for other purposes.
- H. R. 1750: Dingell (MI) and 29 Co-sponsors. To authorize funding for the State water pollution control revolving fund program for fiscal years 2002 through 2006.
- H. R. 668: Kelly (NY) and 15 Co-sponsors and H. R. 3792: Kelly (NY) and Tauscher (CA). To authorize appropriations for State water pollution control revolving funds, and for other purposes.
- H. R. 4572: Dingell (MI). To increase certain criminal penalties, and for other purposes.
- H. R. 4683: Pallone (NJ) and Shays (CT). To clarify that fill material cannot be comprised of waste.

Forestry

H. R. 1494: McKinney (GA) and 109 Co-sponsors. To save taxpayers money, reduce the deficit, cut corporate welfare, protect communities from wildfires, and protect and restore America's natural heritage by eliminating the fiscally wasteful and ecologically destructive commercial logging program on Federal public lands, restoring native biodiversity in our Federal public forests, and facilitating the economic recovery and diversification of communities affected by the Federal logging program.

Fish and Wildlife

S. 531: Lincoln (AR) and Dorgan (ND) and H. R. 1013: Deal (GA) and 3 Co-sponsors. To promote recreation on Federal lakes, to require Federal agencies responsible for managing Federal lakes to pursue strategies for enhancing recreational experiences of the public, and for other purposes.

S. 990: The American Wildlife Enhancement Act of 2001, Amends the Pittman-Robertson Wildlife Restoration Act to improve the provisions relating to wildlife conservation and restoration programs, and for other purposes. Passed.

S. 1314: Breaux (LA) and Hutchison (TX); H. R. 3104: Peterson (MN) and 5 Co-sponsors; and H. R. 3547: Peterson (MN) and Green (TX). To protect the public's ability to fish for sport, and for other purposes.

S. 1328: Landrieu (LA). "Conservation and Reinvestment Act".

H. R. 3570: Bereuter (NE). To direct the Secretary of the Interior to monitor the health of the Missouri River and measure biological, chemical, and physical responses to changes in river management and other significant variables.

H.R. 3727: Peterson (MN), and 7 Co-sponsors. To authorize the Interior Secretary to issue regulations under the Migratory Bird Treaty Act that would allow states to establish hunting seasons for double-crested cormorants.

Mining

H. R. 4078: Udall (CO). To provide for the reclamation of abandoned hardrock mines, and for other purposes.

Nonindigenous Aquatic Nuisance Species Act (NISA) Amendments:

- S. 1034: Stabenow (MI) and 12 Co-sponsors. To require the Secretary of Transportation to promulgate and review regulations to ensure, to the maximum extent practicable, that vessels entering the Great Lakes do not spread nonindigenous aquatic species, to require treatment of ballast water and its sediments through the most effective and efficient techniques available, and for other purposes.
- H. R. 2732: Baird (WA) and 22 Co-sponsors. To prevent the westward spread of aquatic nuisance species by directing the Secretary of the Interior to prevent westward spread of such species across and beyond the 100th meridian, monitor water bodies, and

provide rapid response capacity in certain Western States, and for other purposes.
- H. R. 3558: Gilchrest (MD) and Underwood (Guam). To protect, conserve, and restore native fish, wildlife, and their natural habitats on Federal lands through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes.
- H.R. 5395: Ehlers (MI) and 41 Co-sponsors. To establish marine and freshwater research, development, and demonstration programs to support efforts to prevent, control, and eradicate invasive species, as well as to educate citizens and stakeholders and restore ecosystems.
- H.R. 5396: Gilchrest (MD) and 41 Co-sponsors. To amend the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 to reauthorize and improve that Act.

Water

S. 350: Chaffee (RI) and 55 Co-sponsors. To amend the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to promote the cleanup and reuse of brownfields, to provide financial assistance for brownfields revitalization, to enhance State response programs, and for other purposes

S. 446: Crapo (ID) and Craig (ID) and H. R. 1156: Simpson (ID) and 4 Co-sponsors. To preserve the authority of States over water within their boundaries, to delegate to States the authority of Congress to regulate water, and for other purposes.

S. 447: Crapo (ID) and 2 Co-sponsors and H. R. 705, Simpson and 6 Co-sponsors. To subject the United States to imposition of fees and costs in proceedings relating to State water rights adjudications.

S. 1137: Harken (IA) and Grassley (IA) and H. R. 2372: Boswell. To direct the Secretary of the Army to convey the remaining water supply storage allocation in Rathbun Lake, Iowa, to the Rathbun Regional Water Association.

S. 1148: Burns (MT) and H. R. 2202: Rehberg (MT). To convey the Lower Yellowstone Irrigation Project, the Savage Unit of the Pick-Sloan Missouri Basin Program, and the Intake Irrigation Project to the appurtenant irrigation districts.

S. 1255: Wyden (OR) and Brownback (KS). To encourage the use of carbon storage sequestration practices in the United States.

S. 1537: Bingaman (NM) and 2 Co-sponsors. To authorize the Secretary of the Interior to conduct a hydrogeologic mapping, modeling, and monitoring program for the High Plains Aquifer and to establish the High Plains Aquifer Coordination Council to facilitate groundwater conservation in the High Plains.

S. 1538: Bingaman (NM) and 2 Co-sponsors and H. R. 3121: Moran (KS) and Udall (NM). To further continued economic viability in the communities on the High Plains by promoting sustainable groundwater management of the Ogallala Aquifer.

S. 1961: Graham (FL) and 3 Co-sponsors. To improve the financial and environmental sustainability of U.S. water programs

S. 2118: Jeffords (VT). To amend the Toxic Substances Control Act and the Federal Insecticide, Fungicide, and Rodenticide Act to implement the Stockholm Convention on Persistent Organic Pollutants and the Protocol on Persistent Organic Pollutants to the Convention on Long-Range Transboundary Air Pollution.

H. R. 1800: Kind (WI) and 20 Co-sponsors. To establish the Upper Mississippi River Stewardship Initiative to monitor and reduce sediment and nutrient loss in the Upper Mississippi River.

H. R. 2694: Horn (CA). To redesignate the Environmental Protection Agency as the Department of Environmental Protection, and for other purposes

H. R. 3561: Linder (GA) and 2 Co-sponsors. To establish the Twenty-First Century Water Policy Commission.

H. R. 4709: Slaughter (NY). To amend the Public Health Services Act to authorize the Director of the National Institute of Environmental Health Sciences to conduct and coordinate a research program on hormone disruption.

Source: U.S. Congress On Line

River Crossings

Mississippi Interstate Cooperative Resource Association
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ADDRESS SERVICE REQUESTED