

River

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Crossings

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Increased International Protection for Sturgeon

Under an agreement reached in Harare (Zimbabwe) during the 10th Meeting (6/9-20/97) of the *Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) all acipenseriform (sturgeon)



"shovelnose sturgeon"

species would be listed on the CITES Appendix II. That appendix controls trade in sturgeons and their products. The adopted resolution recommended the following:

- Parties should provide the CITES Secretariat with copies of applicable legislation on CITES;
- Range States should inform the Secretariat about legal exporters of sturgeon parts and derivatives;
- Importing countries should be particularly vigilant in controlling the uploading of sturgeon products;
- Parties should ensure that all relevant agencies within a Party cooperate on the necessary organization, scientific, and control mechanisms needed to implement the sturgeon listing, and any projects designed to conserve sturgeon species;
- Parties should consider the harmonization of their national legislation

related to personal exemptions for caviar (no more than 250 grams/person);

- Range States of sturgeon species included in Appendix II should consider the feasibility of developing annual export quotas of sturgeon products and communicate such quotas to the CITES Secretariat;
- Parties should monitor the storage, processing and reconditioning of sturgeon products in Customs free zones and free ports, and from airline and cruise line catering;
- The CITES Secretariat, in consultation with the *Animals Committee*, should explore the development of a uniform marking system for sturgeon products and aquaculture stocks to assist in subsequent identification of these species;

- Parties immediately endorse the consideration of the trade in surgeon products by the *Animals Committee*.

Implementation of this resolution is expected to make importation of sturgeon caviar into the US (or anywhere else) much more difficult, restricted, and costly than at present. This is expected to increase the legal and illegal fishing pressure on American sturgeon and paddlefish species, as these species are already widely used as surrogates for the more popular European and Asian caviars. The resolution will become effective on April 1 1998.

Source: *The Sturgeon Quarterly*, Volume 5, No. 1/2, June, 1997

IN THIS ISSUE

Sturgeon Protection Increased	1	Dealing With Disasters	15
Sturgeon Poaching in Russia	2	Topeka Shiner Listing?	15
Sturgeon Closure Recommended	2	Riverine Water Needs	16
Biodiversity Issues	3	Effects of Fish in Lakes	17
Religion and the Environment	5	Zebra Mussel Control	17
Dam Removal Update	5	Unionid Mussels of Kansas	17
MMR Chute Restoration	7	Cormorant Kill	17
River Restoration Initiative	8	Environmental Values Polls	18
UMR Catch and Release	9	Enviro-Performance/Profits	19
River Delta Restoration	9	McKnight Expands	19
Pfiesteria Update	10	Sixteen Worst Subsidies	20
Agricultural Wastes	11	Meetings of Interest	21
Buffer Strip Research	11	Congressional Action	22
Miscellaneous River Issues	12		

Sturgeon Poaching in the Caspian Sea

The actions taken by CITES to protect sturgeon stems largely from illegal poaching in eastern Europe that has increased since the breakup of the Soviet Union. Prior to that time, little poaching occurred and sturgeon harvest was strictly controlled by government owned and operated fisheries.

Now, however, in the Russian part of the Caspian Sea (the Volga River Delta) the level of sturgeon poaching increases each year. Gangs of criminals and fugitives who make their living by illegal sturgeon poaching live on small islands in the Delta. In fact, over 1,100 fugitives were caught by the police in that area between 1994 and 1996, but many river guards are also corrupt and hamper police efforts by working with the poachers.

Sometimes river guards themselves prevent police from arresting poachers by threatening them with machine-guns. At the same time, mafia-type killings of honest policemen and river guards have become a common event in many places of the region, especially in Dagestan.

Gangs of racketeers also completely control the legal catch. During the spawning period, each evening a boat with racketeers approaches each legal fishermen team and takes 15-20 of the largest sturgeons caught during that day. This means that the official statistics of the sturgeon catch lack at least 1/3 of the fish captured. Even legally produced and sold caviar yields little profit to the fishermen and police. Almost all money remains outside the country on the accounts of private Russian companies which sell caviar on the international market.

In Dagestan (an autonomous republic on the eastern shore of the Caspian Sea on the border with Azerbaijan), there are at least 500 gangs located along 650 kms of the shore who specialize in illegal sturgeon catch. Harvest occurs mainly in the sea, and gangs are equipped with weapons as sophisticated as grenade throwers. Recently a military helicopter was

shot down by the poachers.

According the information of *TRAFFIC-Europe-Russia*, approximately 10 tons of frozen sturgeons illegally caught in Dagestan and Kalmykia (another autonomous republic located between Russia and Dagestan) are shipped to Moscow every day. There are between 30 and 50 illegal underground plants specializing in processing and smoking sturgeon meat in Moscow.

In Azerbaijan, poachers are also catching sturgeons in the sea, as far as 20-30 kms from the shore. Gangsters have good boats which are equipped with 5 motors each. Several nets are connected and put in the sea in the form of "a star". This method gives the highest catch of sturgeons.

Source: *The Sturgeon Quarterly*, June, 1997, Volume 5, No. ½

MICRA's Paddlefish/Sturgeon SubCommittee Recommends Basinwide Closure

MICRA's Paddlefish/Sturgeon SubCommittee met in St. Louis, MO on November 13-14, and after review of the current situation regarding CITES and the caviar market recommended that:

- commercial fishing for all sturgeon species be banned throughout the Mississippi River Basin; and
- a similar closure for paddlefish be discussed and considered by the states.

SubCommittee members from 16 states (KS, TN, IA, ND, SD, IN, OH, NE, IL, OK, AR, MS, LA, TX, KY, and MO); as well as U.S. Fish and Wildlife Service (FWS) representatives from the Washington Office and from Regions 1, 2, 3, and 6 were present at the meeting. A major consideration in making the recommendations were the international

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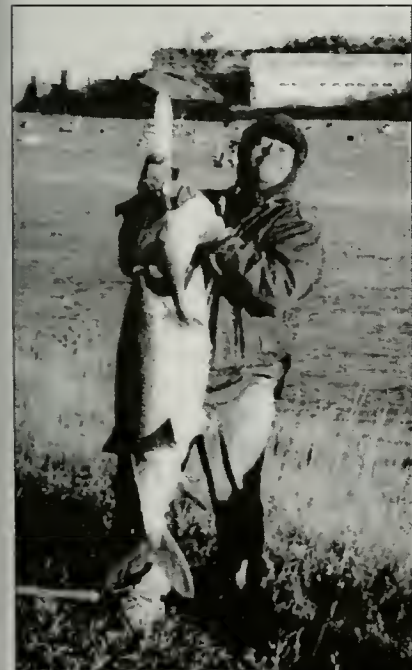
River Crossings is a mechanism for communication, information transfer, and coordination between agencies, groups and persons responsible for and/or interested in preserving and protecting the aquatic resources of the Mississippi River Drainage Basin through improved communication and management. Information 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.

Biodiversity Issues

actions taken earlier this year for sturgeon regarding their CITES Appendix II listing and the situation regarding sturgeon poaching in eastern Europe (see previous two articles).

The CITES action will almost certainly focus attention and demand on Mississippi River Basin sturgeon and paddlefish as replacements for Russian caviar. All agreed that the present condition of Mississippi River Basin sturgeon stocks -- 1) pallid sturgeon are federally endangered and 2) lake sturgeon are protected in several of the basin states -- cannot support the kind of fishing pressure that will almost certainly result.

MICRA Sub-committee members could not, however, reach a similar consensus on a Basinwide closure for paddlefish commercial fishing. This was largely because of the presence of what are currently considered to be viable paddlefish populations on the Ohio River (IN and KY). In the latter case, it was decided instead to elevate the issue to the full MICRA membership, asking that it be a subject of discussion at the Association's December meeting in Milwaukee. The results of those discussions will appear in the next issue of "River Crossings".



Paddlefish taken in the sport fishery below Gavin's Point Dam, SD in 1995.

The need for preserving the Nation's biodiversity is at the very heart of such federal legislation the *Endangered Species Act*, currently up for reauthorization. Biodiversity gets at the issues of management, exploitation, speciation, evolution, and even religion:

- At what point should man prevent the continued loss of species?
- Are man's actions just another part of natural selection; if so, then should species be allowed to become extinct simply because they are not able to adapt to man's alteration of the landscape?
- Does man have a deeper philosophical responsibility to preserve species with which we share the earth?
- Does preservation of biodiversity hold the key to man's own survival in terms of the continued need to find new medicines and cures for constantly evolving parasites and diseases, such as AIDS and the Ebola virus?
- Should natural resource managers (i.e. fish and wildlife agencies and their constituents) bear the brunt of the expense for maintaining biodiversity, or should habitats bought and paid for with funds from hunters and fishers be simply managed for a few "desired" game species?
- At what point should society at large invest in natural resource management to preserve biodiversity beyond that which can incidentally be provided by game species management?

A team of noted scientists told members of Congress on 9/8 that society ought to "move quickly" to preserve biodiversity because human health is "directly dependent" on the health of other species. Scientists believe that only the "surface" of nature's "pharmacological bounty" has been scratched and that "extinctions are shredding pages in nature's library faster than they can be catalogued".

Eric Chivian, director of *Harvard University's Center for Health and the Global Environment*, said many medicines come from threatened species. In 1993, 57% of the 150 most-prescribed drugs in the US came directly from natural sources, according to Francesca Grifo, director of the *Center for Biodiversity and Conservation at the American Museum of Natu-*

ral History. Efforts are underway at the *National Cancer Institute* to test more than 100,000 natural compounds from 25 countries for their effectiveness in fighting cancer, AIDS and other diseases.

"Driven by concerns over rampant habitat destruction and species extinction," many scientists are calling for a comprehensive global biological survey that would count, name and describe species. Supporters of the idea assert that a global biological survey could help counter a general ignorance of species' role in providing food, medicine and "the environmental conditions that sustain all life." But skeptics like *University of Pennsylvania* biologist Daniel Janzen point out that an exact count of species is beside the point. Janzen said, "Whether it is 10 million or 30 million is [not] relevant to their conservation."

Taxonomists agree that the simple part of the global census -- identifying birds, mammals, reptiles, amphibians and flowering plants -- is done. Insects, mites, fungi, bacteria and other tiny creatures represent what *Harvard University* biologist Edward Wilson calls "the black hole of taxonomy": Largely unknown, the creatures' numbers could be 10 times more than the estimate of known species, which is 1.5 million.

Meanwhile, an environmental consultant has compiled "what appears to be the world's first comprehensive index of flora, fauna and microbes" on the World Wide Web. Richard Stafursky of Lewes, DE, who considers himself a "techno-Noah," began building the World Species List in 1994 to illustrate the inter-connectedness of species. Stafursky said he had approached government agencies with a proposal to create such a site, but "I didn't get an answer from them."

The cyber-database currently accounts for about three-fourths of the world's estimated 13.6 million species, he says. And the list is still growing: users from as far away as Costa Rica and Australia have sent additions to the 4,513-file index. The site's organization reflects Stafursky's goal of tying conservation to a "holistic vision" of all species. The site's Web address is <http://envirolink.org./species>.

Russell Mittermeier, president of *Conservation International*, in a *Newsweek* opinion piece said, "...we languish in the Dark Ages when it comes to understanding the diversity of life on Earth." Mittermeier notes that the \$260 million spent on the latest Martian probe is "more than a full year of government spending on biodiversity research on our entire planet".

In the US and Canada the *World Wildlife Fund* (WWF) has identified 13 broad "ecoregions" that "hold as much biodiversity as the Everglades and are even more imperiled". The study suggests that North America is home to "a far more critical share of the world's biological diversity than has been generally recognized," with 32 regions harboring biodiversity that can be classified as "globally outstanding."

WWF's Eric Dinerstein said, "We always tend to equate biodiversity only with places like Brazil or Indonesia. But ... North Americans have won the biological lottery, but forgot to look at the ticket." However, the report also identifies several threatened regions, including the south-eastern pine forest centered in north FL, the central tall grasslands around IA and four regions along the coast of southern CA. The study "appears to be the most extensive ever conducted for the region."

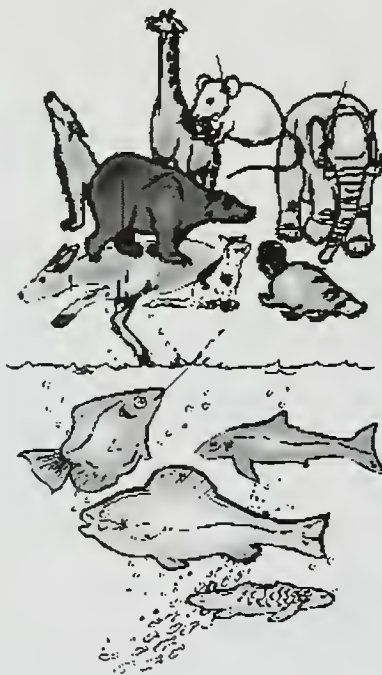
The WWF then announced on 10/30 that it will spend \$10 million to protect 5 of the most endangered ecoregions in North America:

- the Bering Sea (home to more than 525 marine species);
- the waterways of AL, GA and TN;
- the FL Everglades;
- the Klamath Siskiyou Forests in the Pacific Northwest; and
- the Chihuahuan Desert in the southwestern US and Mexico.

The campaign was born of the WWF's *North American Conservation Assessment*, a two-year study involving more than 70 scientists, which determined that 58 of the continent's 116 ecoregions suffer from "severe environmental degradation". The WWF plans to enlist the resources of nonprofit and business groups and governments in its campaign.

According to WWF Vice President Bill Eichbaum, the WWF plans to work on the 5 areas by analyzing the biological diversity and its threats; creating a conservation action plan incorporating economic, environmental and government interests; and composing a strategy to ensure the long-term protection of the biological diversity. "Our hope is by acting before there is a real crisis and by doing it at a larger scale," the ability to conduct long-term restoration is greater, he added. The entire program for the 5 areas is expected to take from 5-10 years.

While biodiversity may be important for the development of future medicines and for man's ultimate survival, it may have little to do with how ecosystems actually function. According to three independent studies recently published in the journal *Science*, the key to how



ecosystems function may not be the number of species (biodiversity), but which ones are included.

The three research groups, working respectively in (1) prairies in MN, (2) grasslands in CA, and (3) subarctic islands in Sweden; provided a variety of evidence suggesting that not all species are created equal when it comes to affecting how ecosystems function. Instead, the presence of certain key species or groups of species -- early or late season growers, for example -- can have great importance. Other

species or groups, it appears, can be lost or gained with relatively little effect.

Commenting on the work, Dr. Phil Grime, an ecologist at the *University of Sheffield* in England, said, "There are often just a few animals and a few plants that are really running the show, and what happens to them is really crucial." As a result, Grime suggested that ecologists should perhaps be less concerned than they have been with overall levels of biodiversity in habitats.

Others, like Dr. Peter Kareiva, an ecologist at the *University of Washington* in Seattle, however, said the new results suggested just the opposite. "The studies show that species richness does matter," Kareiva said. "It's like an insurance policy. The more species you have, the more likely you are to have the right ones. The more you eliminate, the more likely you are to have eliminated some particular function."

What the new research suggests is that in previous studies, increased productivity and increased retention of nutrients were not caused by higher species numbers per se. Instead, simply by virtue of containing more species, biodiverse ecosystems will, on average, always be more likely to include those crucial species or groups that would result in higher productivity or sustainability.

In simple ecosystems like farms or managed forests, those looking to increase productivity or improve drought resistance do not try to achieve their goals by increasing the overall numbers of species that they grow. Instead foresters and farmers simply plant key species that will do the job they want done.

In complex natural ecosystems, however, researchers say such straightforward identification of crucial species is impossible. In such ecosystems, which are bound to undergo unpredictable and uncontrollable changes in everything from climate to the invasion of new diseases over the long term, there are so many possible functions -- for example, the ability to recover from frost damage, ability to retain water, ability to process heavy metals -- that identifying all the important processes is

impossible. Therefore the preservation of biodiversity remains extremely important to the preservation of natural ecosystems.

Along those lines a broad coalition of outdoor enthusiasts continues to pursue a legislative initiative called *Teaming With Wildlife* to help address biodiversity issues. Under the proposed legislation (*Fish and Wildlife Conservation and Enhancement Act*) a user fee or excise tax is proposed (0.25 to 5%) on the retail price of outdoor recreation equipment to help natural resource agencies finance biodiversity preservation.



TEAMING WITH WILDLIFE

a natural investment

While the *Teaming With Wildlife* initiative deserves everyone's support, it is really just a good start. As noted above, the issue of biodiversity preservation is a societal issue that goes far beyond the interests outdoor recreation, and into the interest of man's own survival. Ask anyone with a terminal illness or debilitating disease what they wouldn't give to find a cure for that ailment or disease. Many of those cures likely lie in the diversity of species that only exist in our rainforests, in our native prairies, in our streams, and in our natural river ecosystems.

We need to be smart enough to preserve the treasure chest of information that the earth provides. In order to do that society, at large, must invest in the preservation of natural ecosystems -- recreationists cannot be expected to bear that burden alone!

Sources: National Journal's GREENWIRE *The Environmental News Daily*, 8/5,8/15,9/11,9/16, 11/3/97; Laura Tangle, *US News & World Report*, 8/18-25; Jon Luoma, *New York Times*, 9-16-97; and *Land Letter*, 11/10/97

Religion and the Environment

In a pronouncement that church and political leaders called an "unprecedented religious defense of the environment," the spiritual leader of the Orthodox Christian Church on 11/7 declared the degradation of the environment a "sin."

As part of month-long visit to the US, Ecumenical Patriarch Bartholomew I addressed a symposium on religion, science and the environment in Santa Barbara, CA. Bartholomew said, "For humans to cause species to become extinct and to destroy the biological diversity of God's creation, ... to degrade the integrity of the Earth by causing changes in its climate, stripping the Earth of its natural forests, or destroying its wetlands, ... to contaminate the Earth's waters, its land, its air, and its life with poisonous substances -- these are sins."

Paul Gorman of multi-faith *National Religious Partnership for the Environment*, based in New York City, said Bartholomew's statement marked the "first time a significant religious leader has so explicitly designated crimes against creation a sin." Bartholomew's invocation of the word "sin," Gorman predicted, would elevate environmentalism to "a whole new level of theological inquiry."

Sierra Club Executive Director Carl Pope "said the environmental movement would no longer ignore the power of religion to make a difference." Interior Secretary Bruce Babbitt predicted that Bartholomew's statement will be viewed as "one of the great, seminal important religious statements of our time"

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 11/10/97 and Larry Stammer, *Los Angeles Times*, 11/9/97

East and West Coast Dam Removal

"For the first time in history," the Federal Energy Regulatory Commission (FERC) on 11/25 ordered the destruc-

tion of a hydroelectric dam "that its owner wanted to continue to operate". The decision to not reissue an operating license and order the removal of the Edwards Dam from Maine's Kennebec River was hailed by environmentalists "as a major triumph," but "brought warnings of peril" from the electricity industry.

In a 2-1 vote, FERC said its decision would restore salmon, shad and other fish species to at least 15 miles of the river. In a 7/97 recommendation, the agency's staff said that it would cost more to build fish passages than to remove the dam. But *Edwards Manufacturing Co.*, which co-owns the dam with the city of Augusta, said it plans to appeal the decision.

FERC Chair James Hoecker "emphasized that the decision ... need not be viewed with trepidation by the hydroelectric industry, which provides 14% of the nation's electricity, because Edwards is a special case involving a tiny amount of generation and a great deal of environmental damage." But the decision has been "anxiously awaited" because about 550 dams will come up for relicensing in the next 15 years.

In recent decades, research has shown that dams are the leading culprit in pushing many species of salmon and other sea-run fish toward extinction. Environmentalists are urging that 14 dams be destroyed nationwide. Among those possibly facing removal are:

- the Quaker Neck Dam in NC,
- the Elwha Dam on WA's Olympic peninsula, and
- four Snake River dams in WA state.

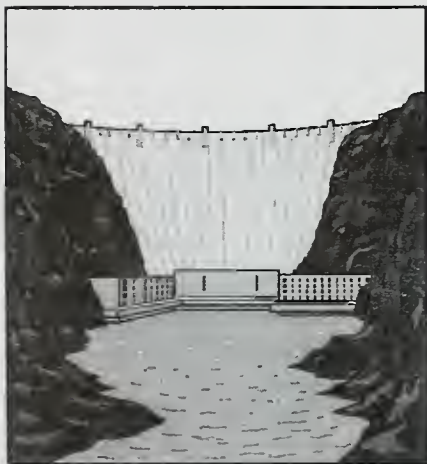
The decision comes "as deregulation of the electric utility industry and technological innovation has begun to punish some hydro dams with market reality". Industrialized nations are also looking to reduce their use of fossil fuels in energy production as attention focuses on the issue of global climate change.

James Evans of the DC-based *Edison Electric Institute*, noting that 95% of the nation's renewable energy comes from hydropower, called the decision "a dangerous precedent". But Margaret Bowman of *American Rivers* was among the enviros who praised the decision. Bowman said, "The US used

to be a leader in building dams. Now we're a world leader in looking at restoring rivers".

Earlier this summer, a series of editorials in the *Boise Idaho Statesman* "may have fundamentally altered the Pacific Northwest's ongoing debate over salmon" restoration. The *Idaho Statesman* "not previously known as a crusader on environmental causes" and "the largest and most influential newspaper in the state," recommended at least partial removal of the four federal dams on the lower Snake River to allow easier migration for chinook and sockeye salmon.

After conducting an economic analysis, the newspaper concluded that the dams "are a burden on ID and the Northwest." The first editorial in the series said, "The region won't be set free until the salmon and steelhead these dams kill are recovered and



balance is restored to our economy, environment and culture."

The newspaper concluded that tearing out the earthen sections of the Lower *Granite*, *Little Goose*, *Ice Harbor* and *Lower Monumental* dams would cost \$509 million a year in lost electrical power and "river-related income" to Lewiston, ID, and in added irrigation costs for WA farmers. But the newspaper calculated that the move would yield \$692 million in benefits from a restored fishery, not having to pay large mitigation costs, and savings in river barge transportation subsidies.

Early this fall, Slade Gorton (R/WA) said he would introduce legislation

and seek funding to remove a small dam in his state with the understanding that larger dams in the Northwest would remain intact. In a lengthy 9/15 floor statement, Gorton said he hoped to use removal of the lower Elwha River dam, near Olympic National Park, as a litmus test for other dam removal plans, one that will almost certainly show such proposals to be prohibitively expensive and of little benefit to endangered species.

Gorton said he will work to complete acquisition of the two Elwha dams with money from the *Land and Water Conservation Fund* (estimated at \$18 million) and will introduce legislation authorizing removal of the lower dam (which is low-balled at \$60 million). However, that bill will contain a provision mandating a study of the dam removal's impact on fish populations before breaching the upper dam can even be considered. Other provisions will ensure the viability of the Port Angeles water supply and bar removal of Columbia and Snake dams without congressional authorization.

Gorton also said his action would remove the "wild card" of potentially reckless administration action on the issue, citing President Clinton's designation of UT's 1.7 million-acre Grand Staircase-Escalante National Monument as an example. "My decision has been driven by the unilateral activism this administration has demonstrated when it comes to complex environmental issues," he said.

But the outcome of an Elwha dam removal already appears will have no influence on bigger Northwest dam decisions, at least as far as Gorton is concerned. "Some groups and elected officials support removal of the Elwha River dams as a first step, a practice run, toward removing Columbia River system hydroelectric dams. Those who want to make a habit of dam removal should understand this proposition: I will never support their proposals to remove Snake or Columbia River dams-never." He added: "We can do more for salmon especially by acting in a more intelligent and coordinated way to restore our Northwest salmon resources. But the costs associated with removing dams on the Snake or Columbia rivers will always dwarf the potential benefit for salmon."

One week after Gorton's announcement, House Resources Committee members savaged the *Sierra Club* for its proposal to drain Lake Powell, the second largest reservoir in the US. The environmental group's board of directors voted last November to support breaching the massive Glen Canyon Dam and draining the lake behind it to restore natural flows to the Colorado River and to re-expose Glen Canyon. The aesthetics of the canyon outweigh the boating, water-supply and power-production capacities of the lake and dam, the loss of which can be compensated by Lake Mead and Hoover Dam further downstream, the group has argued.

But that view hardly washed with National Parks and Public Lands Subcommittee Chairman James Hansen (R/UT), who called the proposal "bizarre" and slated the hearing largely to blow it out of the water for the benefit of the media, he said. Still, Hansen cautioned Rep. Christopher Cannon (A/UT) to show respect for *Sierra Club* President Adam Werbach and the other witnesses when Cannon harshly criticized the proposal. The panel carted out witness after witness to discredit the *Sierra Club* plan, including the top officers of the Bureau of Reclamation (BOR), Western Area Power Administration, UT Department of Natural Resources, AZ Department of Water Resources, the Navajo nation, and a Los Angeles social services group.

Afterwards, Hansen summarized, "It was important to hold this hearing so that the American people can understand just how extreme this proposal is and how it would impact millions of people due to water shortages, higher electricity prices, lost recreation opportunities and severe environmental problems."

Even so, former BOR Commissioner Dan Beard in a 10/6 *New York Times* editorial suggested Hansen and colleagues may have miscalculated. Although the proposal to dismantle the Glen Canyon dam and drain Lake Powell on the UT-AZ border is "breath-taking" in scope, "we shouldn't dismiss the idea". Beard says the House Resources Committee hearing was intended to "embarrass" those who support the idea, but instead "gave legitimacy

to the option" because they "tacitly admitted" that dams are a political choice and "are not permanent fixtures on the landscape." Beard asserts that the impacts of draining Lake Powell would be acceptable because recreationists have alternatives and the loss of hydropower would be "minimal." Beard, now a senior vice president at the *National Audubon Society* said, "Draining a reservoir and restoring a canyon may just be the cheapest and easiest solution to our river restoration problems".

Source: National Journal's *GREENWIRE*, *The Environmental News Daily*, 10/6,10/14, and 11/26/97, Tim Breen, *Land Letter*, 10/10/97, and Tom Kenworthy, *Washington Post*, 10/14

Middle Mississippi River Chute Restoration

The U.S. Army, Corps of Engineers, St. Louis District's (SLD), Avoid and Minimize Team has initiated on-going restorations of Sante Fe and Marquette chutes on the Middle Mississippi River. Sante Fe Chute is located at Mississippi River miles 35 through 40, while Marquette Chute is located between Mississippi River miles 50.1 and 48.0.

The Sante Fe Chute project began in 1996 using the new micro modeling tool at the SLD *Applied River Engineering Center* (AREC). During two meetings, biologists and engineers collaborated on developing cost effective and environmentally sound alternatives. It was determined through model study test results, that the alternative with the greatest potential for aquatic diversity involved the construction of nine perpendicular alternating dikes (similar to that shown in the figure to the right).

As river engineers within the potamology section developed plans and specs from the micro model study, they determined that there was a need for bank protection works along the side channel due to the new sinuous flow pattern created by the dike field. A decreased budget dictated that placement of only six of the nine dikes and the bank protec-

tion works could be pursued. Also, rather than building the dikes "level crested" to a "top of bank" height, they were designed with a sloped height that tied into the bank line at the "top of bank" and sloped toward the center of the channel to +15 LWRP with a 250-foot effective length. *Luhr Brothers*, the construction contractor for the project, completed the dike and revetment works in April 1997.

On 5/28, a multi-sweep, high resolution hydrographic survey revealed similar bathymetry to that displayed in the micro model. This included 20-foot scour holes at the two upper dikes and minimal scour at the other four dikes. Monitoring will be conducted after the next high water event to determine whether additional dike height, as called for in the model study, is required. Infrared photography was collected in July and is currently being analyzed for flow pattern comparisons.

At the Marquette Chute the project purpose was to: (1) increase the aquatic diversity in the side channel, and to connect a scour hole at the lower end of the island to the main channel. In order to achieve the first

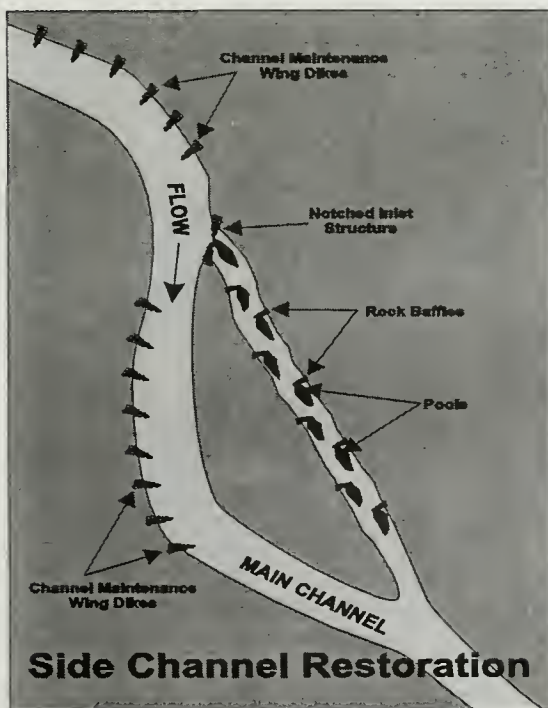
project objective, the side channel depth needed to be increased.

Several meetings were held at the AREC during project planning stages between representatives of the SLD, MO Dept. of Conservation, IL Dept. of Conservation, and U. S. Fish and Wildlife Service. At each of these meetings, representatives were allowed to perform their own tests on the model and offer new alternatives to the modelers.

The model demonstrated that aquatic diversity could be achieved by adding two notches to the existing upper closing structure. It also showed that two dikes in the lower section of the chute would help develop conductivity to the main channel. Both recommendations will be implemented with one alteration -- that only one notch will be added to the closure structure this year with the possibility of the second being added next year. A detailed report of the model study is forthcoming.

Rob Davinroy and the entire SLD AREC staff should be applauded by river biologists, ecologists, and hydrologists alike. They have made major strides in our collective ability to restore habitat diversity to the Middle Mississippi River, and many of their techniques should be applicable to restoration of large channelized rivers elsewhere. The techniques being used on these two side channels are similar to those used (on a smaller scale) as standard operating procedures for trout stream habitat management. This moves us into a whole new realm of opportunities to better manage large rivers -- addressing both game and endangered species issues -- while restoring some semblance of a river's natural dynamics.

Also of interest to river managers is the AREC library. It consists over 2,500 journal articles, technical reports, theses, and textbooks by 4,500 authors on river engineering and micro modeling related topics. Currently, static HTML pages containing contents of the library can be found at <http://www.mvs.usace.army.mil/river/library.htm> and dynamic pages that can be queried are under construction. This card catalog can be searched by either author or title/ subject.



Side Channel Restoration
Typical design of a Middle Mississippi River side channel restoration project, showing a series of alternating rock baffles used to create a sinuous channel and a variety of aquatic habitats.

The newest addition to the library's collection includes databases of both current maps published by USACE and historical maps of the district. Web pages for these databases are pending. Included are St. Louis District navigation maps of the Mississippi and Kankakee rivers and major lakes within the St. Louis District (Rend, Wappapello, Carlyle, Shelbyville, Mark Twain). The historical collection includes the same navigation maps from the 1850s to the 1940s as well as land surveys of the district from the mid 1800's up to 1890, USGS quadrangle sheets from the 1930s, and early 1900s aerial mosaics of the Mississippi and Missouri rivers.

Researchers can search the AREC card catalog on site or contact it at the AREC web site. Queries can also be requested by contacting Karen Rieken by email at rieken@smtp.mvs.usace.army.mil or calling (314) 263-4230.

Contact: Rob Davinroy, Department of the Army, St. Louis District, Corps of Engineers, *Applied River Engineering Center*, Foot of Arsenal Street, St. Louis, MO 63118, (314) 263-4714, davinroy@smtp.mvs.usace.army.mil; or Dave Gordon, gordon@smtp.mvs.usace.army.mil; Rob Hetrick, hetrick@smtp.mvs.usace.army.mil; or Chad Mathes, mathes@smtp.mvs.usace.army.mil

Missouri and Middle Mississippi River Initiative

Senator Christopher Bond (R/MO) announced his Missouri and Middle Mississippi River Initiative on 10/31. Bond's initiative seeks to enhance, preserve and protect habitat for fish and wildlife on the Missouri and Middle Mississippi rivers. The new 5-year \$50 million authorization is a win-win approach that will implement and expand the use of new and innovative measures designed by the Corps of Engineers (COE) to improve habitat conservation without impacting adversely other water related needs, including navigation, flood control, and water supply.

With only scarce dollars and without specific authorization, the St. Louis

District (SLD), Corps of Engineers has been developing ways in which new and existing navigation structures used to guide the river and maintain the channel may be modified to meet environmental as well as navigation goals (See previous article). These innovations have proven successful, earning wide acclaim including a *Presidential Design Award* and *Federal Design Achievement Award*. This legislation seeks to put these successful innovations to work on the Missouri River and expand their employment on the Middle Mississippi by providing a specific authorization and a dedicated source of funds.

This Initiative works "between the banks" whereas complimentary programs such as the *Environmental Management Program* on the Upper Mississippi and the *Missouri River Mitigation Project* have only worked to improve habitat on lands "adjacent to the rivers".

The draft legislation authorizes \$10 million/year over 5 years to develop and implement a plan, including the following activities:

- modification and improvement of navigation training structures to protect and enhance fish and wildlife habitat;
- creation of side channels to protect and enhance fish and wildlife habitat;
- restoration and creation of island fish and wildlife habitat;
- creation of riverine fish and wildlife habitat;
- establishment of criteria to prioritize based on cost-effectiveness and likelihood of success; and
- physical and biological monitoring for evaluating the success of the project.

The draft legislation forbids expressly activities that adversely affect private property rites and water-related activities including flood control, navigation, and water supply. The draft provides that the project be coordinated with other related Federal and State activities and that there be public participation in the development and implementation of the projects. It requires a 25% non-federal cost share and limits the federal cost of any single project to \$5 million. Finally, the draft legislation confers no new regulatory authority and requires compliance with the *National Environmental Policy Act*.



Missouri River near Rulo, NE showing progressive habitat loss caused by development of the federal nine-foot navigation and bank stabilization project.

It is the intention to include this legislation in an omnibus *Water Resources Development Act* the Senate expects to consider in 1998. As of 10/31, supporters of this proposal include the *Missouri Farm Bureau*, *American Rivers*, *MARC2000*, *Missouri Soybean Association*, and *Missouri Corn Growers Association*.

Senator Bond should be applauded for his support of the work that Rob Davinroy and the SLD have been doing on the Middle Mississippi (see previous

article) and expanding it to the Missouri River. Unfortunately however, the requirement for a 25% nonfederal cost share for project implementation will significantly limit the success of this legislation.

The *Federal Navigation and Bank Stabilization (channelization) projects* on both the Middle Mississippi and Missouri rivers are the primary causes for loss of the riverine habitats proposed for restoration under this legislation (see the four historical, 1934-77, Missouri River photographs displayed on the previous page). Restoration of those habitats is critical to the recovery of the Missouri River ecosystem and its threatened and endangered species. Recently developed technologies allow us to now restore those habitats while still maintaining the other federal project purposes, and that restoration should be done at 100 % federal cost.

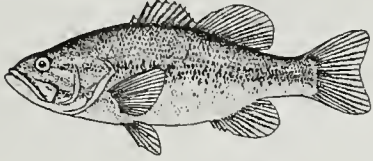
The legislation should therefore be amended to eliminate the 25% nonfederal cost share, and create a special budget item in the COE operation and maintenance budgets for this activity. As noted above, a primary beneficiary of such action would be the federally threatened and endangered species of the Missouri and Mississippi rivers.

UMR Catch and Release

Fishery biologists used to think that recreational fishing pressure had little or no effect on river fish populations. Since then, studies on the Upper Mississippi River (UMR) have shown that some fish species, bass in particular, have strong affinities for particular backwater locations. Mark and recapture studies have shown that it is possible to significantly reduce the number of large adult bass in specific backwaters by fishing.

In 1990 the UMR Pool 13 Brown's Lake area (Jackson County, IA) was enhanced by means of a habitat restoration project. Construction of a water control structure and dredging to increase the flow of oxygenated water, plus a deflection levee to keep out suspended sediment created a Mecca for largemouth bass. It is estimated that angler effort and catch

in Brown's Lake increased by a factor of 10 since project completion. Much of the increased fishing pressure and harvest is suspected to come from the increased number of bass fishing tournaments held in Pool 13. Many of the bass weigh-ins are also held on the IL side of the river which makes the IA Dept. of Natural Resources (DNR) powerless to enforce release site restrictions that might help protect the fishery.



"largemouth bass"

All of these factors have caused the IADNR to consider making Brown's Lake a *"catch and release only"* fishery for all black bass. Upon DNR recommendation, The *IA Natural Resource Board* has issued a *Notice of Intended Action* to amend its fishing regulations to designate Brown's Lake as possibly the first catch and release area for black bass on the UMR. DNR biologists would evaluate the effects of the regulation change through a 5 year monitoring study.

Source: *UMRCC Newsletter*, July/August 1997

River Delta Restoration and Hypoxia

"In the name of economics and the environment," scientists and engineers from several European countries have punched holes in half a dozen dikes and dams, letting the Danube River reclaim more than 9,000 acres of its previously drained delta. A breeding, resting or feeding ground for nearly 325 species, the Danube River delta is Europe's "largest wetland west of the Volga" River.

During the mid-1980s, Romanian dictator Nicolae Ceausescu ordered that large slices of the river delta be turned into grain fields, prompting the building of dikes and the draining of more than 240,000 acres. Now the *Danube Delta Biosphere Reserve*, an agency

created by the Romanian government in 1991, is overseeing a project aimed at reversing "one of the biggest and fastest land grabs in recent history." The effort is funded by the World Bank's *Global Environment Facility* and other foreign donors.

Meanwhile, despite an agreement among nearly 20 European countries to help clean the Danube and other European rivers, the delta continues to suffer from algae blooms sparked by an overload of untreated sewage and farm and industrial runoff from the 8 countries in the watershed.

Similar to the Danube, the Mississippi River Delta's historical network of distributary streams has long been isolated by the levees which maintain the River's commercial shipping lanes. Under the present scenario, sediments and nutrients carried by the River from the entire Basin are transported right past the historical delta, and are injected "hypodermic needle like" into the Gulf of Mexico.

This could be one of the major causes of Gulf hypoxia in that the coastal marshes are no longer allowed to stabilize any of the Basin's runoff materials before they reach the Gulf. Historically, the river flowed through an intricate network of distributary streams and marshes in the delta on its way to the Gulf. During this process, the waters slowed and the coastal marshes stabilized wastes and were themselves stabilized against the Gulf's erosive forces, by the never ending supply of sediments being carried to them from the watershed.

Today we have lost on both accounts. The coastal marshes (1) aren't being allowed to stabilize the River's wastes before they reach the Gulf, and (2) themselves aren't being enriched by the River's sediments.

One solution might be to breach the shipping canal levees in a number of places in order to divert some of the runoff into the coastal marshes. This would not only prevent some of the "hypoxia causing" nutrients from reaching the Gulf, but would also replenish some of the nutrients and sediments of the Gulf coastal marshes that are otherwise being eroded away by Gulf currents.

If the farmers of the upper Midwest are expected to do their part to address the hypoxia issue by reducing nutrient runoff from their crop fields, then the coastal states must do their part as well, by letting some of the River's distributaries and coastal marshes act as the "kidneys of the watershed" as they did historically.

Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 10/20/97 and Marlise Simons, *New York Times*

***Pfiesteria* Update**

In early October, at least 15 more people in MD and VA reported ailments that were linked to exposure to the toxic microbe *Pfiesteria piscicida*. MD officials found short-term memory loss -- "the apparent neurological trademark of *Pfiesteria*" -- in seven state Dept. of Natural Resources employees exposed to the Chicamacomico River. The employees were conducting research on fish kills in the river on 9/13, one day before it was closed. But "the most worrisome aspect of the new findings were that two patients were from Wicomico Creek and the Nanticoke River," where the toxic microbe had not previously been reported.

University of RI researcher Percy Donaghay on 9/26 said the decline of the Chesapeake Bay's oyster population may have removed one of the bay's natural mechanisms for removing microbes such as *Pfiesteria* from the water. The bay's oyster population has dropped by 99% over the last century.

The Washington Post reported on 10/3 that counties on MD's Eastern Shore "are awash in pollutants linked to *Pfiesteria*." "Top" poultry counties produce "enough manure to meet the needs of every crop," yet they (the farmers) also import fertilizers "by the thousands of tons". Amid recent attacks on MD's efforts to reduce agriculture pollution, Tom Simpson of the MD Dept. of Agriculture points out that although the state is 35th in the US in farm acreage, it leads the nation in acres farmed under nutrient-management plans.

"North Carolina is undergoing some anguished second-guessing" about the way it handled outbreaks of *Pfiesteria* since 1991 as the toxic microbe killed hundreds of millions of fish and may have sickened a number of people in that state. The state's "long-standing" position -- that residents had nothing to fear -- "has collapsed" as mounting evidence illuminates the hazards of *Pfiesteria*. At the same time, policymakers and environmentalists have "contrasted unfavorably" NC's "passive" response to MD's more "aggressive" reaction.

As a result, on 10/9 NC officials began posting signs at waterways where *Pfiesteria*-related fish kills have occurred, including parts of the Neuse and New rivers and Pamlico Sound. Also NC officials have begun a new study on *Pfiesteria*'s health risks, and have requested federal funds to build a center to study the microbe. "Some experts say NC's missteps offer lessons" to officials about the importance of heeding warnings "even when scientific proof is lacking".

Meanwhile FL has convened a task force to study the microbe, which has been found in the St. Johns River near Jacksonville.

The *Charleston [WV] Gazette* ran a four-part series in early October on the impact of pollution from WV poultry farms on the Potomac River. Some 17.5 million chickens live in the Potomac Valley region, more than 240 times the five-county area's human population. The newspaper links growth in the poultry industry to recent federal studies indicating the river contains unsafe levels of fecal coliform bacteria. The WV Division of Environmental Protection (DEP) will publish another study on fecal contamination later this year. The DEP does not regulate the poultry industry and relies upon voluntary efforts by farmers to limit water pollution. Three-quarters of the 350 poultry farmers in the Potomac Valley do not take recommended precautionary steps, according to the Agriculture Dept.

Meanwhile, VP Al Gore and MD officials announced a \$200 million program on 10/20 to pay farmers to idle land and create buffers to control runoff from farmland. The program

"could lead to buffers replacing plowed fields along practically all the waterways that flow through farms into the delicate Chesapeake Bay estuary" in the first instance of a state linking its wetlands conservation program with the Agriculture Dept.'s Conservation Reserve Program. The agreement committed \$170 million in federal funds, \$25 million in state funds, and another \$5 million from *The Chesapeake Bay Foundation*.

Former MD Gov. Harry Hughes (D), chair of a commission studying recent outbreaks of *Pfiesteria*, said the new program might help forestall "more drastic regulation" of farm runoff. But farmers expressed only "cautious support" for the program, which aims to take 100,000 acres out of production. Environmental groups, including the *American Farmland Trust*, *Environmental Defense Fund* and *National Audubon Society*, praised the project.

Additionally, the MD panel studying *Pfiesteria* recommended on 10/31 that all state farmers have nutrient-management plans in place by 2002 to curb agricultural runoff. The panel's report suggests disposal alternatives for chicken manure used as fertilizer, such as burning and composting. The report also urges the state to improve water quality by upgrading septic systems and limiting residential fertilizer use. The MD legislature in 1/98 will review the panel's recommendations, which were presented to Gov. Parris Glendening (D).

Meanwhile, mid-Atlantic poultry producers have disputed claims that chicken waste has caused the *Pfiesteria* outbreaks. University of MD biologist Rita Colwell confirmed that scientists have not yet determined what triggered the outbreaks. But MD Natural Resources Secretary John Griffin "said government officials often have to act in the face of uncertainty". At the same time, the producers called on the state to work with them to find uses for chicken waste other than fertilizer.

A congressional subcommittee studying *Pfiesteria* were told by scientists on 10/9 that the recent outbreaks should be studied within the broader national context of other algal blooms, such as red tides. Congress has set aside \$11 million for *Pfiesteria* research, which

the Centers for Disease Control announced on 10/9 it will join.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 9/29,10/3,10/10,10/16, 10/21,10/17,and 11/3/97

Agricultural Wastes

Sen. Tom Harkin (D/IA) on 10/28 introduced a bill that would increase the number of restrictions on large animal farms. On 10/29 Harkin called on the Agriculture Dept. and the USEPA to brainstorm solutions to pollution problems caused by animal wastes.

Noting that animals produce 200 times more waste in the US than humans, Harkin said that "failure to manage animal waste adequately is taking a toll" on the environment and human health. According to USDA estimates released on 10/29, cattle in the US produce more than 90 million tons of waste/yr, pigs produce more than 8 million tons/yr, and chickens produce more than 7 million tons/yr.

Earlier in October the USEPA proposed more frequent inspections and stepped-up enforcement efforts for corporate hog and poultry farms under a new policy to "plug holes in the *Clean Water Act*." EPA's Robert Perciasepe said under the new "holistic approach," regulators would also focus on fertilizer use, urban runoff and sewage-treatment operations that contribute excess nutrients to US waterways. EPA's new policy was to be made available for public comment in late October.

The drive to curb nutrient runoff "has taken on new urgency" since the

Pfiesteria outbreaks in the Mid-Atlantic, which killed more than 1 billion fish and forced the closure of several Chesapeake Bay tributaries (See the October/November issue of *River Crossings* and the preceding article).

Meanwhile, officials from nine "major" poultry producers told the USEPA on 10/28 that they will launch industry initiatives to curb the amount of chicken waste polluting the nation's waterways. Invited to a meeting at the EPA's Region III headquarters in Philadelphia, the executives reportedly told officials that they will reduce water pollution nationwide without being prodded by new regulations. The companies represented were *Empire Kasher Poultry*, *Perdue Farms*, *Tyson Foods*, *Townsend's*, *Pennfield*, *Farmers Pride*, *Wampler*, *Mountaire Farms* and *Rocco*.

EPA Regional Administrator Michael McCabe said the companies revealed few specifics about their plans, but sounded "quite innovative." Among the ideas discussed were linking farmers' production contracts to the use of "best management practices" and altering poultry feed to reduce the amount of phosphorus in waste. Environmentalists say farmers should also limit the amount of chicken waste they use as fertilizer and store manure in sheds for future use. McCabe said, "I definitely felt the industry understands this is an issue they need to address, and that their failure to address it could result in regulatory actions ... that they may find difficult to live with." Without strong industry action, government action would be necessary, he said.

Meanwhile, in IA the USEPA fined Des Moines-based *DeCoster Farms* \$10,000 for spreading manure on a

field which drains into an agricultural well and aquifer, even though the incident did not pollute drinking water. The EPA's Kurt Hildebrandt said the action was the first federal pollution fine against an IA livestock operation.

Regarding the public's views on the issue, the Annapolis-based *Chesapeake Bay Foundation* on 10/28 released a survey of 616 MD and VA residents which revealed that 80% would be willing to pay 10 cents more per pound of chicken if the money was applied to reducing bay pollution. The poll was done by *Widener-Burrows & Associates* in Annapolis and had a margin of error of 5%.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/6,10/9,10/29,10/31/97; Curt Anderson, *AP/San Francisco Chronicle/Examiner* online, 10/28; *Washington Times*, 10/30; *AP/Omaha World-Herald*, 10/5; and Bill Lambrecht, *St. Louis Post Dispatch*, 10/12

Buffer Strip Research

The use of vegetated buffer strips along stream corridors has grown greatly over the past several years, but there has been much discussion about their relative effectiveness. The Interstate Commission on the Potomac River Basin (ICPRB) responded to this issue through a recent staff study which catalogued available information on plant uptake rates of nitrogen and phosphorus. The idea was to develop a guide for the efficient design of stream-side buffer strips.

The project was largely supported by a grant from the VA Department of Environmental Quality under Section 604 (b) of the *Clean Water Act*. In addition to ICPRB staff, Karl Williard of the *Environmental Resources Research Institute* of the PA State University made a significant contribution to the work.

The project report reviews, synthesizes, and presents the available information on nitrogen and phosphorus, addressing the disciplines of forestry, agriculture, and horticulture. This information will help alleviate the problem of nitrogen and phosphorus uptake information not being readily available



to those individuals responsible for designing functional buffer zones. This appears to be the first attempt of this kind.

The main purpose of vegetative buffer strips is to reduce the nutrient load entering streams and rivers by trapping nutrients bound to the sediments in overland flow. These trapped nutrients become sequestered in the buffer zone and are available for root uptake along with the nutrients in solution in the overland and subsurface flow.



Each plant species has different nutrient requirements and therefore has its own distinct nutrient uptake rate. The extensive ICPRB literature search includes direct nutrient uptake and/or related information on optimal fertilizer requirements for many plants. The most useful results are summarized, ranked, and presented as tables in the report. The individual findings from the referenced literature are also presented. Tables are presented for each of the categories of plants that are appropriate for the typical three-zone design of buffer strips. The managed planting of specific plant species can create a more effective buffer zone than one in which random species populate by chance.

A secondary goal of the study was to try to identify some plant species that should be included in buffer zones because of their relatively high uptake rates of nitrogen and phosphorus. It is hoped that the project will provide useful information to the many groups working to protect streams and rivers using buffers to

improve water quality.

Contact: Roland Steiner, ICPRB, Suite 300, 6110 Executive Blvd., Rockville, MD 20852, (301) 984-1908

Miscellaneous River Issues

AL Fish Kills - An early October warehouse fire in Birmingham, AL that released pesticides into waterways has caused massive fish kills and human health problems. An estimated 4,700 gallons of "super-concentrated" Dursban were released into stormwater drains during the 10/2 fire. Emergency response crews built a dam of hay bales and bags of charcoal "as a last line of defense" before tainted water could leave Bayview Lake and enter the Black Warrior River, which is the local drinking-water source. The AL Dept. of Environmental Management on 10/16 said that unsafe levels of Dursban were found in Bayview Lake. Meanwhile, at least 15 firefighters complained of health problems such as nausea, diarrhea and vomiting following exposure to the pesticide. Source: Gita Smith, *Atlanta Constitution*, 10/17/97.

Experimental Pellets - Toledo authorities have endorsed a scheme to use experimental pellets to cover Ottawa River sediment that the USEPA says may be the largest source of PCB pollution in Lake Erie. Early next year, engineers plan to scatter tons of *AquaBlok* bentonite clay-coated pellets over the riverbed. The pellets are designed to fall to the bottom, absorb water, and expand into a "heavy, claylike goo" that creates a "virtually impermeable layer" over the sediment. *AquaBlok's* manufacturer, *New Waste Concepts Inc.*, has tested the product once before, successfully capping the floor of a marshy military area in AK. Officials are unwilling to dredge the Toledo site, which has PCB levels millions of times higher than EPA standards, for fear of churning even more chemicals into the water. The OH Dept. of Development will help fund the \$230,000 *AquaBlok* experiment. Source: Jim Nichols, *Cleveland Plain Dealer*, 11/3/97.

Grand Canyon Flood - For the second time, federal officials on 11/3 began artificially flooding the Colorado River

in the Grand Canyon to restore eroded camping beaches, enhance fish habitat and make room in Lake Powell for the expected winter runoff from the Rocky Mountains. The two-day flood, proposed earlier this year by *American Rivers*, called for releasing 31,000 cfs through the Glen Canyon Dam. The first such flood, which lasted seven days in March 1996, released 45,000 cfs through the dam and deposited up to 12 ft. of sand on Grand Canyon beaches. This year's flood is intended to restore beaches in Marble Canyon, the upper part of the Grand Canyon. Source: Steve Yozwiak, *Arizona Republic*, 11/3/97.

IL Livestock Regs - The IL legislature in early November passed a measure to tighten the regulation of large-scale livestock operations by authorizing the state Dept. of Agriculture to conduct annual inspections of manure lagoons. Some central IL lawmakers had pushed for a more comprehensive bill, which would have authorized the ILEPA, not the state Agriculture Dept., to monitor the farms. But Rep. Duane Noland (R) said that expanding the role of the ILEPA "doesn't satisfy those who want more restrictions, and it just further irritates those who are in the industry." The bill awaits Gov. Jim Edgar's (R) signature. Source: Adriana Colindres, *Springfield [IL] State Journal-Register*, 11/15/97

MN Fish Eradication Banned - Anoka County, MN, District Judge Ellen Maas on 10/30 blocked the MN Dept. of Natural Resources from poisoning carp and other fish in Howard and Mud lakes. Howard Lake resident Patricia Yaritz on 10/24 filed the lawsuit, contending that the DNR failed to assess the project's effects on other natural resources. Source: Dean Rebuffoni, *Minneapolis Star Tribune*, 11/1/97

MO Chickens - "A new battle [is] brewing" in MO over the poultry waste that is spoiling streams while producers are governed by regulations with "loop-holes big enough to drive manure trucks through." The Ozarks of southwestern MO have seen a three-fold increase in poultry farming over the last 6 years. Last year, 250 million chickens and 22 million turkeys produced more than a million tons of manure. But MO environmental regulations do not address phosphorus, a key compo-

ment of poultry manure that can choke aquatic life. Nor does the state regulate the contractors who haul away manure or the spreading of manure by farmers with less than 100,000 birds. David Shorr, director of the state Dept. of Natural Resources said, "It has grown so quickly down there that it may have outstripped our regulatory regimen." At the urging of the USEPA in October, MO officials began a "poultry dialogue" that could bring about a plan to manage poultry waste. Meanwhile, citizen patrols are watching farms and reporting possible unsound waste-management practices to the DNR. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 11/26/97 and Bill Lambrecht, *St. Louis Post-Dispatch*, 11/23/97

MT Mine - Hoping to prevent *Stillwater Mining Co.* from building an impoundment to store wastes, land-owners along the Stillwater River near Nye, MT, have petitioned Stillwater County commissioners to create a zoning district that would exclude industrial uses. But Chris Allen of *Stillwater Mining* said the site is ideal for storage because it is away from the river, the groundwater is deep, and the soils have poor permeability. Source: Clair Johnson, *Billings Gazette*, 11/2/97.

NC Sewage Penalties - "Speaking in unusually blunt terms," NC Gov. Jim Hunt (D) on 10/20 warned that the state intends to impose stiffer penalties on municipal wastewater-treatment plants that pollute waterways. His remarks came as state regulators begin to implement the stricter discharge limits adopted by state lawmakers last summer following a spate of "highly publicized" waste spills. Hunt, speaking at the *NC League of Municipalities* annual meeting in Raleigh said, "I don't want there to be any misunderstanding on how the governor stands on this. ... We're going to get tougher and tougher". Source: John Wagner, *Raleigh News & Observer*, 10/21/97

NE Streams - The city of Lincoln has petitioned the Dept. of Environmental Quality to create a "special fifth category" for NE streams to recognize that some waterways are not

"high-quality habitat deserving of stringent pollution regulations." Environmentalists contend city officials are trying to avoid spending \$35 million to upgrade two wastewater-treatment plants that discharge into Salt Creek. The EPA has opposed changing the creek's designation. Source: Julie Anderson, *Omaha World-Herald*, 11/14/97.

NE Water Permits - "Hundreds" of state air and water quality permit applications are "stacked up" at the NE Dept. of Environmental Quality, raising questions of whether pollution may be increasing as permit review stalls. As of October, the DEQ had an estimated 600 permit applications pending, including an "unprecedented" number of applications to build or expand hog-confinement facilities. DEQ Director Randy Wood acknowledged that the backlog may mean more pollutants are being discharged than would be allowed under updated permit standards. The department plans to hire 12 new employees to review the applications. Meanwhile, the USEPA has been helping with wastewater discharge inspections in NE to give state officials more time to deal with the backlog. Source: Julie Anderson, *Omaha World-Herald*, 11/14/97

NWF Slams State Runoff Programs - Seventeen states do not even minimally comply with federal regulations designed to protect waters from polluted runoff, according to a *National Wildlife Federation* (NWF) report released in early October. The *Clean Water Act* requires states to inventory waters at risk from nonpoint-source pollution, then determine acceptable levels of pollution and implement rules to keep contamination below those levels. The NWF rated all 50 states on their compliance with this provision, giving grades of "failing," "poor," "weak" or "good," but not one state received a rating of "good." The group notes that in particular, MD and VA "could have been spared" from recent outbreaks of *Pfiesteria* if they had followed the act's runoff provisions. Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/14/97 and *National Wildlife Federation* News Release 10/9/97

OH Barge Firm Sentenced - A barge transport company and its former vice

president will pay fines totaling \$272,500 and serve two years probation for conspiring to dump oil into the Ohio and Mississippi rivers. Cincinnati-based *M/G Transport Services Inc.* and J. Harschel Thomasse, who retired in 1992, were convicted in 1995 of a felony charge of violating the *Clean Water Act* and a misdemeanor charge of failing to report an oil spill. On 7/7, US District Court Judge Herman Weber in Cincinnati reversed several related jury verdicts against the firm and Thomasse, citing a lack of evidence. During sentencing in late October, Weber noted that the company has agreed to a \$3.9 million settlement with the federal government. He declined to impose the maximum fine of \$700,000 on the company, but he warned that the firm could face additional fines if it is found guilty of any other violations during probation. Thomasse will pay a \$22,500 fine. Source: John Nolan, *AP/Journal of Commerce*, 11/4/97

OH sewage release - The Metropolitan Sewer District in Cincinnati, OH, in early October released 6.5 million gallons of raw sewage into the Ohio River, "creating a mess at a nearby marina." The district said it intentionally released the waste to finish construction at its Little Miami treatment plant, but that the material was supposed to have been screened to remove solids and chlorinated to kill bacteria. Source: *AP/Cleveland Plain Dealer* online, 10/15/97

PA Farm Waste Plan - PA agriculture officials on 10/9 approved the first manure-management plan under new state rules that are "among the most stringent" in the US. To prevent groundwater pollution and curb runoff of animal waste into state waterways, about 2,500 livestock and poultry producers in PA are now required to show that manure is being properly applied on-site or safely disposed of elsewhere. Doug Goodlander of the state Agriculture Dept. said the rules will not dramatically impact farmers because most already have nutrient-management plans. Dan Greig, a Chester County, PA, environmental official, said the cost of hiring consultants to develop waste-management plans will be offset by the savings from using free manure instead of commercial fertilizers. In exchange for adopting

the controls, farmers will be granted limited protections if manure problems occur. Source: Susan Stranahan, *Philadelphia Inquirer*, 10/10/97

SD Tribes/Mining Suit - The Justice Dept. and a SD Indian tribe are seeking legal redress from a mining firm they contend has polluted several rivers with toxic mine tailings. In a suit filed on 11/25 in the US District Court in Rapid City, SD, the DOJ and the *Cheyenne River Sioux* allege that San Francisco-based *Homestake Mining Co.* fouled waterways with more than 100 million tons of tailings laced with cyanide, mercury, arsenic and other gold-mining waste. The suit is similar to one filed in 9/97 by SD charging that the firm polluted Whitewood Creek in the Black Hills for about 100 years, stopping in 1977. An 18-mile stretch of the waterway was on the federal Superfund list for 10 years until it was cleaned up and removed last year. The most recent suit, filed under Superfund and the *Clean Water Act*, seeks yet-undetermined damages to restore wildlife habitat and clean up federal and tribal property near the Belle Fourche, Cheyenne and Missouri rivers. Sources: National Journal's *GREENWIRE*, *The Environmental News Daily*, 11/26/97 and *AP/San Francisco Chronicle/Examiner* online, 11/26/97

TX Springs - "Thousands" of natural springs in TX have dried up over the past few decades, in part because state laws "provide little protection" against their demise. Dating from about 1900, the "rule of capture" in TX allows cities, farmers and industrial plants to pump "unlimited" amounts of groundwater from wells on their property -- "even if this causes springs to dry up". Other state and local laws have fostered urban sprawl, which has also tapped spring flows and polluted the aquifers that supply them. One study estimates that one in four springs has been destroyed. The decline of springs has threatened public water supplies and "a host of unique species", such as the endangered Barton Springs salamander, that need the steady temperature and flow of the springs to thrive. In west TX, state and federal wildlife officials have

fashioned an "ingenious" deal with farmers who irrigate with coveted water from San Solomon Springs. To preserve habitat for the endangered Comanche Springs pupfish and the Pecos gambusia, officials secured a "small portion" of the farmers' water allocation and created a cienega, or a "prime" desert wetland habitat. In return, the farmers' potential liability under the *Endangered Species Act* for harming the fish "has been vastly reduced". Sources: National Journal's *GREENWIRE*, *The Environmental News Daily*, 11/26/97 and Ralph Haurwitz, *Austin American-Statesman*, 11/23/97

Value of beach recreation - CA officials are seeking \$20 million in damages stemming from a 1990 oil spill "in a complex civil suit" that "promises to raise significant legal issues about how to put a price tag on an oil spill's effects." The "central question" will be "how to calculate the cost to the public of a lost day at the beach." The state contends it is owed \$15/day/person -- or \$12 million -- from *Attransco*, which owned the tanker that spilled 400,000 gal. of oil off the coast of Huntington Beach in February 1990. CA seeks another \$8 million in civil penalties for the unlawful discharge of oil. The *Attransco* shipping company's lawyer, David Woolley, asserts that only 208,000 gal. spilled. He says his client should pay at most \$6/person/day, or \$1.2 million, for the spill that closed some popular beaches for 5 weeks. Michael Leslie, an attorney for CA, said the trial is one of the first to focus on the "loss of use" issue, which has drawn the attention of both environmental and oil industry groups. Source: Deborah Schoch, *Los Angeles Times*, 10/5/97

WI Cranberry Marshes - As WI farmers seek to take advantage of rising demand for cranberries, some environmentalists are concerned that farming operations are encroaching on sensitive wetlands. In the last 5 years alone, the amount of land devoted to growing cranberries in WI -- the top producer in the US -- has increased by 25% to more than 15,000 acres. Some predict the state's cranberry industry could triple in coming years. But enviros worry that the expansion of cranberry bogs will affect neighboring wetlands that filter pollutants from area waterways and serve as critical

habitat for loons, herons, osprey, bass and bluegill. The USEPA this year has filed four cases against WI cranberry growers whom the agency contends have expanded into sensitive areas without required permits. But despite opposition from environmentalists and fishing groups, the *WI Natural Resources Board* has recommended that the state legislature ease rules governing expansion of cranberry bogs. Sources: National Journal's *GREENWIRE*, *The Environmental News Daily*, 11/26/97 and Peter Kendall, *Chicago Tribune*, 11/25/97

WV Development - "Rapid" tourism development in WV's Canaan Valley threatens to choke the Blackwater River unless ski resorts, state parks and condominium complexes substantially limit their sewage discharges, say federal and state regulators. The USEPA and the WV Dept. of Environmental Protection on 10/22 proposed that sewage discharges in the valley be cut by as much as 75%. The growing amount of discharge spurred by development is depleting the supply of dissolved oxygen in the Blackwater, according to a joint report by the agencies. The report was required by a settlement of a 1995 suit filed under the *Clean Water Act* by the *Ohio Valley Environmental Coalition* and the *West Virginia Highlands Conservancy*. Meanwhile, the DEP has sued the *Halltown Paperboard Co.*, contending the mill's nitrogen and suspended solids discharges into Flowing Spring Run have frequently exceeded state limits. Rep. Bob Wise (D/WV) has also been urging *Allegheny Wood Products* to preserve the tourism value of the Blackwater Canyon as it logs a 3,000-acre parcel adjacent to the Monongahela National Forest and Blackwater Falls State Park. The firm plans to harvest 500 acres. Wise's call came as the state Division of Natural Resources (DNR) announced that WV in FY97 spent \$11 million more on state parks and forests than it brought in -- "the largest gap to date." But DNR Deputy Chief Ken Caplinger on 11/3 noted that despite the subsidies, the state's parks are among the most self-sufficient in the nation. Source: Ken Ward, *Charleston [WV] Gazette*, 11/2/97; *USA Today*, 11/3/97; Ward, *Charleston [WV] Gazette*; *AP/Charleston [WV] Gazette*, 11/3/97; *AP/Charleston [WV] Daily Mail*, 10/31/97; *AP/mult.*, 11/4

Yellowstone Mine - Crown Butte Mines Inc. has given the federal government until 1/12/98 to complete an agreement to halt the firm's proposed *New World Mine* outside Yellowstone. This marks the fourth deadline extension since the original agreement was announced by President Clinton in 8/96. Sources: National Journal's GREENWIRE, *The Environmental News Daily*, 10/17/97 and Erin Billings, *Billings Gazette*, 10/15

Dealing with Natural Disasters: A New Model

A new model of public-private cooperation is beginning to address the staggering costs of natural disasters, which in recent years have averaged \$1 billion/week in the US. *Public Private Partnership 2000* (PPP 2000), a unique alliance of Federal, private-sector, and non-profit agencies, is redefining society's approach to handling earthquakes, floods, hurricanes, tornadoes, landslides, wildfires and other natural disasters.

"This is a historic occasion," said Harvey G. Ryland, president and chief executive officer of the *Institute for Business and Home Safety* (IBHS), welcoming approximately 100 invited guests to the first PPP 2000 forum. "From home builders to home buyers, inspectors to insurers, private citizens to public interest groups, researchers to regulators, PPP 2000 brings all stakeholders to the table to develop durable, long-term solutions to the spiraling toll of natural disasters."

The mid-September forum was the first in a series dedicated to exploring new approaches to reducing the economic, environmental, and human costs of natural disasters. The forum, *Insurance Initiatives of the Private Sector*, was cosponsored by the *U.S. Subcommittee on Natural Disaster Reduction* (SNDR) and IBHS.

More than 36 million people now live in counties vulnerable to hurricanes along the Gulf and Atlantic coasts. The total insured exposure is estimated at \$3.15 trillion on those coasts alone. The projected cost of a repeat of the 1906 San Francisco earthquake is \$105 billion in insured

losses, 8,000 deaths, and 18,000 serious injuries. A repeat of one of the 1811-1812 earthquakes in the New Madrid zone could cause more than \$100 billion in insured losses.

"The costs of dealing with disasters are simply too great for any one sector of society to handle," said Dr. William Hooke, chair of the SNDR. "We need to create effective partnerships among all the interested parties, each of whom brings significant knowledge and a unique perspective to the issue."

Over the next year, PPP 2000 will sponsor more than a dozen forums on topics such as:

- the uncertainty of managing cata-



Missouri River floodplain residence destroyed during the 1993 floods.

- strophic risks (12/97),
 - cities and megacities at risk (1/98), and
 - reducing losses from floods (3/98).
- "At each forum, our goal will be to develop specific strategies or actions to mitigate the effects of natural disasters," said Hooke. "For example, in discussions at the first forum, the participants proposed the creation of a **Disaster Impact Statement**, analogous to the Environmental Impact Statement required for any significant public or private development/reconstruction activity."

"Two other essential components for reducing the losses arising from natural disasters in the US are sound applied research and a better knowledge of the natural hazards with which we live," said Ryland. "The creation of PPP 2000 reflects an awareness that neither government regulation nor market-based practices alone sufficiently protect the Nation and its citizens. A coordinated effort among all the stake-

holders is needed to develop lasting solutions that enable people to live and prosper in an atmosphere of personal safety and financial security."

PPP 2000 is a cooperative endeavor of the 19 Federal agencies forming the SNDR (subcommittee of the *National Science and Technology Council's Committee on the Environment and Natural Resources*), the IBHS (a property/casualty insurance organization dedicated to reducing deaths, injuries, property damage, economic losses, and human suffering caused by natural disasters), and more than 20 other private-sector organizations.

Copies of the Report on the first Forum are available from the USGS EarthFax fax-on-demand system at (703) 648-4888; press 1, then press 2, then request document number 1800.

Contact: Kathleen Gohn (SNDR) 703/648-4732 or Margaret L. Sheehan (IBHS) 617-722-0200, x. 214

Topeka Shiner Proposed for Listing

The U.S. Fish and Wildlife Service (FWS) is seeking public comments on a proposal to list a small native fish, the Topeka shiner *Notropis topeka*, as an endangered species under the *U.S. Endangered Species Act*.

The Topeka shiner once lived in portions of KS,IA,MN,MO,NE, and SD. The species is now found primarily in a few scattered tributaries within the Missouri and Mississippi river basins and the Flint Hills region in KS. Many populations are very reduced in numbers, and are geographically isolated from other populations.

The Topeka shiner is already protected under state law in MO and KS. MN, NE, and SD consider it a species of concern, with no legal protection. The Topeka shiner does not receive any special recognition in IA. The species is adapted to prairie streams with high water quality and pools containing cool, clear water, most often associated with spring or seep flows. The fish is considered an indicator of the health of aquatic ecosystems, which in turn has implications for the quality of water available for human use and

recreation.

The primary threat to the Topeka shiner today is loss of habitat from stream sedimentation and decreased water quality. The fish would benefit from actions that protect natural stream systems, their riparian vegetation and their natural flow.

A conservation agreement is in place for the Topeka shiner in the *Mill Creek Watershed District* in KS. The agreement was developed jointly by the FWS, the KS Department of Wildlife and Parks, and the *Mill Creek Joint Watershed District No. 85*. It focuses on reducing and eliminating some of the more significant threats to the species resulting from flood control measures proposed for implementation within the basin, maintaining core populations of the species necessary for long-term viability, while still allowing the District to achieve an effective level of flood control.

One of the major threats facing the Topeka shiner, in portions of its range, is the construction of dams. Due to a combination of factors, including increased predation and blockage of upstream and downstream migration, the Topeka shiner has been known to disappear from streams where dams are constructed.

The *Mill Creek Watershed Joint District No. 85* approached the FWS and the KS Department of Wildlife and Parks in an attempt to coordinate their proposed tributary dam construction in such a way as to minimize impacts on the species and ensure its maintenance in the basin into the future. The Conservation Agreement outlines specific steps which will be taken by all three entities in an effort to meet the dual goals of species conservation and flood protection. At the heart of the agreement is the designation of all streams in the Mill Creek basin based on their degree of importance to the species.

Anyone with biological information or comments on the status of this species is requested to provide information to the U.S. Fish and Wildlife Service, Ecological Services, 315 Houston Street, Suite E, Manhattan,

KS 66502. All data received will be reviewed by the FWS before a final decision is reached.

Source: FWS News Release

Riverine Water Needs

Brian D. Richter, Jeffery V. Baumgartner, Robert Wigington, and David P. Braun of *The Nature Conservancy* have proposed a new method for setting streamflow-based river ecosystem management targets. Their new method, called the '*Range of Variability Approach*' (RVA), derives from aquatic ecology theory concerning the critical role of hydrological variability, and associated characteristics of timing, frequency, duration, and rates of change, in sustaining aquatic ecosystems.

The method is intended for application on rivers wherein the conservation of native aquatic biodiversity (i.e. Topeka shiner - see previous article) and protection of natural ecosystem functions are primary river management objectives. The RVA uses as its starting point either measured or synthesized daily streamflow values from a period during which human perturbations to the hydrological regime were negligible. This streamflow record is then characterized using 32 different hydrological parameters. Using the RVA, a range of variation in each of the 32 parameters, e.g. the values at + 1 standard deviation from the mean or the 25th to 75th percentile range, are selected as initial flow management targets.

The RVA targets are intended to guide



the design of river management strategies (e.g. reservoir operations rules, catchment restoration) that will lead to attainment of these targets on an annual basis. The RVA will enable river managers to define and adopt readily interim management targets before conclusive, long-term ecosystem research results are available. The RVA targets and management strategies should be adaptively refined as suggested by research results and as needed to sustain native aquatic ecosystem biodiversity and integrity.

The RVA is designed to bridge a chasm between applied river management and current theories of aquatic ecology. Virtually all methods currently in widespread use for determining instream flow will possibly lead to inadequate protection of ecologically important flow variability, and ultimately to the loss of native riverine biodiversity and ecosystem integrity. Current aquatic ecology theory and empirical observations suggest that a hydrological regime characterized by the full or nearly full range of natural variation is necessary to sustain the full native biodiversity and integrity of aquatic ecosystems. The RVA addresses this paradigm by incorporating into river management targets a suite of ecologically relevant hydrological parameters that comprehensively characterize natural streamflow regimes.

The dependence of native aquatic biota on specific values of the hydrological parameters employed in the RVA has not been widely, nor comprehensively, substantiated with statistical rigor. Much of what aquatic and riparian ecologists know or believe about the biotic consequences of flow alteration has been derived from:

- comparisons of dammed vs undammed rivers;
- measured differences in fish or invertebrate communities at increasing distances downstream from dams;
- correlations developed between long-term ecosystem changes and a limited number of hydrological parameters; or
- simply from inferences drawn from (relatively short-term) observations of flow and fluvial processes and biotic distributions or growth rates associated with hydrological gradients.

Virtually all such studies have statisti-

cal weaknesses that limit inference regarding causation between flow and biota, because flow perturbations cannot be replicated or randomly assigned to experimental units.

While the accumulated evidence in support of the natural flow paradigm is overwhelming, others may be less convinced or ready to use it as a guide in river management. In the present RVA design, flexibility in setting specific flow management targets was emphasized, while retaining what could be considered to be the backbone of the approach: the use of natural variability characteristics as ecosystem management guides, accompanied by adaptive refinement of flow targets as ecological research accumulates.

Source: Freshwater Biology (1997) 37, 231-249 31997 Blackwell Science Ltd, Freshwater Biology, 37, 231-249

Contact: Brian D. Richter, Biohydrology Program, *The Nature Conservancy*, PO Box 430, Hayden, CO 81639; Jeffrey V. Baumgartner and Robert Wigington, *The Nature Conservancy*, 2060 Broadway, Suite 230, Boulder, CO 80302; and David P. Braun, *The Nature Conservancy*, 1815 N. Lynn St, Arlington, VA 22209

Effects of Fish in Lakes

Field surveys and experiments conducted over several decades have shown that fish can directly or indirectly affect virtually all biological and chemical components of lake ecosystems. Despite the publication of several excellent reviews and books on aspects of fish effects, a comprehensive bibliography has not been available.

Dr. Ray W. Drenner, a professor of biology at Texas Christian University, has recently compiled and installed on his home page a 1500-reference bibliography on the effects of fish on lakes (<http://www.bio.tcu.edu/bio/drenner.html>). The bibliography covers a wide range of topics including: feeding behavior and selectivity of freshwater fish; factors controlling prey availability and fish feeding

rates; niche partitioning and competition; effects of fish removal for renovation of fish communities; fish polyculture; effect of species introductions, biomanipulation; and direct and indirect effects of fish on physical, chemical, and biological components of lakes.

The literature published on this ecologically important topic has grown rapidly since 1960. The bibliography is organized by year of publication, and then by author, to give users a sense of how the field has developed and changed through time. It is hoped that this bibliography will assist new researchers find their way into this large literature.

Contact: Ray E. Drenner, Department of Biology, Texas Christian University, P.O. Box 32916, Fort Worth, TX 76129

Source: Ecological Society of America, Bulletin; 78(3) July 1997

Zebra Mussel Control

Forty-seven chemicals having potential for preventing the attachment of zebra mussels *Dreissena polymorpha* have been identified and tested. For each chemical, 15 zebra mussels (5-8-mm shell length) in each of two replicates and six treatments were exposed for 48 hrs. followed by a 48-hr. postexposure period in untreated water. Eleven of the chemicals inhibited the reattachment of zebra mussels after the 48-hr. exposure; eight had EC50 values ranging from 0.4 to 5.4 mg/L, and three had EC50 values ranging from 19.4 to 29.0 mg/L. Based on an analysis of chemical cost, solubility in water, anticipated treatment concentrations, and potential hazards to humans or the environment, three of the most promising chemicals, all antioxidants, (butylated hydroxyanisole [BHA], tert-butylhydroquinone, and tannic acid) were tested on nontarget fish (bluegill, *Lepomis macrochirus*; channel catfish, *Ictalurus punctatus*; and rain-



"zebra mussel"

bow trout, *Oncorhynchus mykiss*). These chemicals were not selectively toxic to zebra mussels; only the tests with bluegill and BHA and with channel catfish and tannic acid had 48-hr LC50 values greater than the concentrations effective for preventing the reattachment of zebra mussels. Although the attachment of zebra mussels can be prevented with selected antioxidants, an alternative formulation should be investigated to minimize effects on nontarget organisms, such as fish.

Source: Abstract from W. Gregory Cope, Michelle R. Bartsch and Leif L. Marking. 1997. Efficacy of Candidate Chemicals for Preventing Attachment of Zebra Mussels (*Dreissena polymorpha*). Environmental Toxicology and Chemistry, Vol. 16, No. 9, pp. 1930-1934.

Unionid Mussels of Kansas

An illustrated guide to the Unionid Mussels of KS is now available from Karen J. Couch. Forty-five KS mussel species and forms (including rare and extirpated) are depicted in full color. Interiors and exteriors of shells are shown. The easy to read text, gives shell description, sexual dimorphism, size, habitat, known fish hosts, range, and similar species. Price is \$56.95, plus \$4.00 for shipping and handling per book. Remit payment (check or money order) to Karen Couch, 12 Ventura Lane, Olathe, KS 66061-3057. Web site: <http://www.molluscs.net/karen.htm>.

USFWS May Permit Unlimited Cormorant Kill

The US Fish and Wildlife Service (FWS) is considering a proposal to allow fish farmers in 33 states to kill unlimited numbers of double-crested cormorants, a large water bird that is protected under the *Endangered Species Act*.

Catfish farmers in the South say their ponds are "magnets" for migrating cormorants, which consume 18-20 million catfish each winter and cost them millions of dollars worth of their potential harvest.

Because the species is protected, catfish farmers need FWS permits to shoot a limited number of the birds and must report the number they kill. Biologist John Trapp of the FWS said fish farmers shoot 4-8,000 birds each year without a noticeable impact on the migrating population. Under the relaxed rules, Trapp estimated that 92,000 birds, or 5-10% of the population, would be shot.

National Aquaculture Assn. President Jim Ekstrom said the proposed policy change "is vital to our industry." But conservation groups contend the depredation rule would set a "dangerous precedent" because it is intended to ease an administrative and budgetary burden within the FWS. The FWS is expected to make a decision on the proposal later this year.

Source: National Journal's GREENWIRE, *The Environmental News Daily*, 10/7/97

Environmental Values Polls

Two out of every three Americans consider themselves environmentalists, and "public concern is rising," according to a recent poll by the McLean, VA-based research firm *Wirthlin Worldwide*. Of those responding to the survey:

- 68% "place[d] themselves squarely in the pro-environmental camp",
- only 4% said they were "unsympathetic" to environmental concerns,
- 76% said environmental improvements should be made regardless of cost,
- only 25% said economic growth should be sacrificed to protect the environment, and
- 70% said there can be a balance between economic growth and the environment.

The pollsters report that Americans' concern about the environment appears to be "rooted in an increasing awareness that such issues affect their personal health and well-being." For example:

- 37% said current environmental problems have harmed them personally,
- 42% believe air quality in their community has grown worse,
- 79% said they thought environ-

mental problems would get significantly worse during their lifetimes,

- 76% said they are more concerned about the environment now than five years ago,
- Almost half said there was too little environmental regulation,
- 21% said there was too much,
- 41% agreed that environmental groups sometimes exaggerate environmental threats to garner public support,
- 56% "believe the threats are as serious as claimed.", and
- 37% said the media exaggerates environmental threats.

With one exception -- the computer industry -- more people associate industries with causing environmental problems than with solving them. But asked how good a job businesses and governments are doing at protecting the environment, respondents give above average grades" -- ranging between 5.6 and 6.4 on a 1-10 scale -- with "businesses in your community" scoring highest.

Wirthlin Worldwide, headed by Pres. Reagan's former pollster Richard Wirthlin, surveyed 1,040 adults from 8/22-31/97. The poll has a margin of error of +/-3%.

In a second poll developed by the *Newseum* in Arlington, VA, the *Freedom Forum Media Studies Center* in New York and the *Roper Center for Public Opinion Research* at the University of CT, 59% of those responding said they were "very" or "extremely" interested in news coverage of environmental issues. Only local news and crime rated higher in interest. But when asked about the quality of media coverage on the environment, only 44% rated it as "good" or "excellent." The poll of 1,500 adults was conducted from 1/10-26/97 and has a margin of error of +/-2.5%.

According to a survey released by the DC-based *National Environmental Education and Training Foundation* (NEETF). People with higher levels of environmental knowledge see greater opportunities for compromise between economic and environmental demands,

The 1997 *NEETF/Roper Starch Worldwide Survey* is the sixth in an annual series that has gathered data on Amer-

icans' views on the environment. For the first time this year, the pollsters also assessed people's knowledge of environmental issues with a 12-question, "fairly easy" quiz. But only 32% had nine or more correct responses, and only 10% made the "Environmental Dean's List" with 11 or more correct answers. For example, only 33% of respondents knew that the primary source of electricity in the US is burning fossil fuels; nearly one-half thought hydropower was the main source of energy; only 23% knew that runoff is the chief cause of water pollution; and nearly one-half thought factories were the main source. The pollsters observe: "If the public fails to understand complex or even simple environmental issues, it will be much more difficult to get their support for changes and remedial programs."

For the sixth year, a clear majority -- 65% to 25% -- said environmental protection and economic development "can go hand-in-hand." When asked to choose whether the environment or the economy should be given priority if no compromise were possible, more people said they would choose the environment (69%) over the economy (15%). But illustrating the link between environmental knowledge and opinions, 74% of respondents with report-card scores of 9 or higher believed compromise was generally possible, compared to only 52% of those who scored 5 or lower.

For the first time, the survey also assessed respondents' environmental behaviors. Ninety-nine percent said they try to conserve energy, 91% save water and 88% recycle. And people who participate in outdoor sports scored "significantly" higher than others on the environmental report card, averaging 7.5 questions answered correctly compared to 6.3.

Conducted by research firm *Roper Starch Worldwide*, the random telephone poll of 1,501 adult Americans received funding from the USEPA and the CA-based *Compton Foundation*. It has a margin of error of +/- 2.5%.

Additional data from the poll follow:

Do you think environmental protection laws and regulations ...

	1997	1996	1992
Have not gone far enough	46%	45%	63%
Have struck the right balance	27	28	17
Have gone too far	17	19	10

Do you think environmental protection and economic development can go hand in hand, or that we must choose between them?

Hand in hand	65%
Must choose	25
Depends	4
Don't know	6

What do you think is the most important environmental problem our country faces?

Pollution	60%
Garbage and landfills	9
Natural resources	6
Other	11
Don't know	14

Should environmental education be taught in schools?

Should be taught	95%
Should not be taught	2
It depends	2
Don't know	2

Technology will help solve environmental problems

Strongly disagree	13%
Mostly disagree	20
Mostly agree	41
Strongly agree	22
Don't know	4

In yet another poll conducted for *NBC News* and the *Wall Street Journal*, it was noted that voters believe that hazardous or toxic waste is the most serious environmental problem in the US. Twenty percent of the 1,007 respondents polled identified hazwaste as the top problem. The destruction of natural resources was cited by 18% of respondents, followed by solid waste (13%), water pollution (13%), global warming (10%) and air pollution (9%). Although global warming was cited as a top issue, 59% of respondents said more research on climate change is necessary before the US takes action to prevent it. Twenty-eight percent of those polled said immediate action is needed, while 9% said concern over climate change is "unwarranted." The poll, conducted by

DC-based *Hart-Teeter* from 10/25-28/97 has a margin of error of +/-3%.

Finally, a *USA Today/CNN/Gallup* poll reveals that the public ranks the environment as the 7th most important issue facing lawmakers, behind education, crime, Social Security, Medicare, health care, and budget deficits. Global warming ranked as the 9th most important issue. The poll of 1,008 respondents was conducted from 10/27-29/97, and has a margin of error of +/-3%.

Sources: *Wirthlin Report*, 8/9/97; Jerry Spangler, *Salt Lake Deseret News*, 10/9/97; National Journal's *GREENWIRE*, *The Environmental News Daily*, 10/15/, 11/3, and 11/13/97; Richard Benedetto, *USA Today*, 10/31; and NEETF release, 11/13

Enviro-Performance Equals Economic Profit

Firms that earn high marks for their environmental practices are better financial performers, according to two new studies. The *World Business Council on Sustainable Development* (WBCSD) found that "environmental value drivers," or actions to boost environmental performance, can give companies a competitive edge regardless of their size or sector. Investment firms are increasingly using these indicators in financial analyses, according to a WBCSD report, which was produced by executives from 40 companies including *DuPont Co.* and *Swiss Bank Corp.*

Another new study of environmental performance and profits shows that companies that go "beyond compliance" yield the highest returns on assets. Michael Russo of the University of Oregon and Paul Fouts of Golden Gate University ranked the environmental performance of 243 companies on a five-point scale. The study, which will be published in the *Academy of Management Journal*, found that each one-point increase in environmental performance was reflected in a 1.6% higher return on assets.

Russo said his study does not prove a direct link: "Environmental perfor-

mance causes something, which causes something else, which causes increased performance". The WBCSD said a direct relationship between performance and profit often is "not readily apparent." But the WBCSD study predicts that environmental bench marking -- both within and between industry sectors -- "will emerge as an increasingly important tool" for assessing environmental performance more objectively.

Source: National Journal's *GREENWIRE*, *The Environmental News Daily*, 10/2/97

McKnight Foundation Expands Mississippi River Program

The board of directors of *The McKnight Foundation* has voted to expand its program of environmental grant making to protect the Mississippi River. Over the next 5 years McKnight will dedicate \$23 million to river conservation, up from \$10 million during the previous 5 years. McKnight is the largest environmental funder in the Mississippi River Valley.

By the year 2000 McKnight plans to contribute \$5 million/yr. to conservation efforts on the Mississippi River and its tributaries. That compares to about \$3 million this year. The program will continue to emphasize the Upper Midwest, although grants are made for work in all 10 Mississippi River states.

The board approved the increase after looking at the program's impact over its first 5 yrs. "It was clear that the environmental organizations we support have made gradual but steady progress against difficult odds," said Michael O'Keefe, the Foundation's executive vice president. "They have helped protect drinking water by lowering pollution in the Mississippi, reduce flood damages, conserve riverside natural areas, and protect low-income communities from toxic contamination. But their work has just begun. This is a long-term effort whose ultimate goal is to leave our natural resources clean and abundant for future generations."

During the next 5 years McKnight's Mississippi River Program will focus on

four types of projects:

- **Creating Mississippi River greenways in Minneapolis-St. Paul, the Quad Cities of IA and IL, and St. Louis, MO.** The Foundation will support riverfront parks, trails, and open areas that encourage recreation along the river, protect riverside lands, help rehabilitate inner-city neighborhoods, buffer drinking water from pollution, and increase appreciation of the river as a community asset.

- **Protecting rural watersheds and river corridors.** Most such grants will go to organizations working in the Minnesota River Valley and the blufflands from southeastern MN through IA and IL. Activities may include restoring wetlands, educating the public about clean water issues, and reducing farm runoff that pollutes the Mississippi downstream. For example, runoff from Midwestern farms and cities has created an oxygen-depleted "dead zone" in the Gulf of Mexico, spanning thousands of square miles, where fish and plants are harmed by pollution.

- **Ensuring that environmental protection receives equal consideration with economic development in federal navigation and flood control projects.** The Foundation will provide funds to promote environmentally beneficial river projects and to expose wasteful or damaging programs.

- **Building a potent constituency for river protection.** The Foundation will make grants to strengthen the capacity of groups protecting the Mississippi's environment and to support other conservation efforts all along the river, including projects to help poor people reduce pollution in LA and other southern states.

More information is available on McKnight's grant program in their free booklet entitled: *Mississippi River Program: Guidelines for Grant Applicants*.

Contact: Sylvia Paine, Communications Officer or Dan Ray, Program Officer for the Environment (612) 333-4220

Sixteen Worst Subsidies

River of Subsidy - How Taxpayer Investments are Wasted in the Mississippi River Basin, is a report re-

leased on 10/23 by the *Taxpayers for Common Sense*. The report funded, in part, by the *McKnight Foundation* (see previous article) lists the following as the 16 worst taxpayer subsidies in the Basin:

- **Upper Mississippi Lock Expansions:** Doubling the size of three locks on the Mississippi River would increase an unjustified subsidy for commercial navigation, cost federal taxpayers \$500 million, fuel demand for even more lock expansions and exacerbate environmental problems.

- **Yazoo Backwater Pumping Station:** This project is designed to reduce flooding on farmland yet would increase flooding in other areas and cost federal taxpayers \$143 million.

- **Mississippi River Gulf Outlet:** Operation of this waterway for just 3.5 ships/day costs federal taxpayers \$13 million/year and destroys coastal marsh and wildlife habitat.

- **West Pearl River Navigation:** Reopening this waterway for only minimal commercial traffic would cost federal taxpayers \$15 million over five years and destroy one of the most recognized scenic rivers in the country.

- **Big Sunflower River Flood Control:** Dredging of the Big Sunflower River would only protect against 1-3 year floods, yet would cost federal taxpayers \$62 million and destroy habitat for rare native freshwater mussels.

- **Bonnet Carre Freshwater Diversion Project:** This project was designed to mitigate environmental damage, but it threatens to harm the environment more than it would help and would cost federal taxpayers \$63 million.

- **Missouri River Navigation:** Operation and maintenance of this underused commercial waterway only brings 1% of the river's economic benefits, costs federal taxpayers \$35 million every 5 years and has adverse effects on several fish species.

- **Red River Waterway:** The Corps reported that the \$600 million federal cost to extend this waterway would outweigh the project's benefits and would be an environmental and human health hazard.

- **Lock and Dam 1 and St. Anthony Falls Locks and Dams:** Even the Corps can hardly justify the \$3 million annual operation and maintenance expenses for this underused system that could be put to better use.

- **Non-Federal Levee Repairs:** The federal government has wasted mil-

lions of taxpayer dollars and promoted floodplain development by repairing local levees for over fifty years.

- **St. James Bayou-New Madrid Floodway:** Local residents would pay very little while federal taxpayers would be stuck with an \$80 million tab and be exposed to unnecessary risks for this flood-control project, which would destroy over 20,000 acres of fish and wildlife habitat.

- **Kaskaskia River Navigation:** This channel was constructed to support the nation's demand for high sulfur coal which has curtailed in recent years, and has commercial traffic on the channel yet federal taxpayers still invest \$1.4 million annually to keep the channel running.

- **Marsh Lake Dike Construction:** This \$12 million project is designed to replace a functional, existing structure that is less expensive and less harmful to the environment.

- **National Flood Insurance Program:** This program was originally intended to prevent people from living in the floodplain but had the opposite effect subsidizing development in the floodplain and shifting risks from landowners to federal taxpayers.

- **Federal Crop Insurance:** Federal crop insurance costs federal taxpayers too much because it does not discriminate against farmers who farm in high-risk floodplain areas, and it overpays private insurance companies for their services.

- **Cabins Under Corps Jurisdiction:** Built counter to Corps policy, these cabins were scheduled to be phased out in 1988 but remain an eyesore and a waste of taxpayer money.

This report has to be given credit for equally bashing nearly every segment of society who, in one way or another receives a government subsidy. In so doing, however, it may do more harm than good, in that those targeted by the report may just dig in their heels and fight back against what they view as a frontal attack by the "environmental lunatic fringe".

The projects listed probably do need to be altered, or in some cases drastically changed, or even eliminated; but we have to be careful not to "throw the baby out with the bath water". We have made great progress in the last 20 years working with developmental interests on our rivers to soften projects and bring about important habita-

restoration projects.

There isn't a government program in existence that couldn't use some scrutiny and periodic "belt tightening" -- including environmental programs. All subsidized programs need a periodic, fair, and impartial review by an independent auditor, so that all of the benefits and impacts generated can clearly be displayed. This would "put

them to the test" to see if they can stand on their own in the face of the economic costs and the tangible and intangible damages that they generate. Only after passing such a test should any subsidy be continued.

Unfortunately, many of the projects listed have not been put to that test; in fact most, haven't been reviewed in decades. Such a review is needed,

and if this report provides the catalyst to make that happen, then it has served a useful purpose. If not, it has probably done more harm than good.

Copies of the entire report are available from *Taxpayers for Common Sense* at (202) 546-8500, Ext. 111. The report is also available on the internet at www.taxpayer.net.

Meetings of Interest

January 6-15: The Degraded Earth Renewed: Current Practice and Future Prospects for Land Restoration and Conservation, Oxford, England. Contact: International Seminars, 1 Beaumont Place, Oxford, OX1 2PJ. FAX: 44 (0) 1865-557368, or see <http://www.britcoun.org/seminars>.

January 10-12: Managing Manure in Harmony with the Environment and Society, Ames, IA. Contact: Bob Ball, NRCS, Parkade Center, Suite 250, 601 Business Loop 70 West, Columbia, MO 65203, (573) 284-4370; email: bobb@mo.nrcs.usda.gov.

February ? : Lower Mississippi River Conservation Committee 5th Annual Meeting, Memphis, TN. Contact: Ron Nassar, LMRCC Coordinator (601 629-6602).

March 6-8: Freshwater Mussels Conservation, Captive Care, & Propagation, Columbus, OH. Contact: Doug Warmolts, Columbus Zoo, 9990 Riverside Drive, P.O. Box 400, Columbus, OH 43065, (614 645-3400, email: dwarmolt@colzoo.org

March 9-10: Restoration Evaluation Criteria Workshop, San Diego, CA. How should performance of restoration projects be evaluated, and multiple (and often conflicting) restoration goals be achieved? What should be the methods of evaluating achievement of these goals, and how close to achievement of performance goals is good enough? Contact: Edith Read, SERCAL President, c/o Psomas and Associates, 3187 Redhill Avenue, Suite 250, Costa Mesa, CA, 92626, (714) 751-7373 ext. 2133, Fax: (714) 545-8883. Email: eread@psomas.com.

March 16-19: 8th International Zebra Mussel and other Aquatic Nuisance Species Conference, Sacramento, CA. Contact: Elizabeth Muckle-Jeffs, (800) 868-8776 email: profedge@renc.igs.net

March 17-21: 13th Annual U.S. Regional Association of the International Association for Landscape Ecology, Michigan State University, East Lansing, MI. "Applications of Landscape Ecology in Natural Resource Management", fisheries, human dimensions, planning, range, soils, timber, water, wildlife and other resource subjects will be emphasized. Contact: <http://www.fw.msu.edu/iale98>, or William W. Taylor, Department of Fisheries and Wildlife, 13 Natural Resources Bldg., Michigan State University, East Lansing, MI 48824, (517) 355-1810, Fax: (517)432-1699, email: iale98@perm3.fw.msu.edu.

March 20-24: 63rd North American Wildlife and Natural Resources Conference, Orlando, FL, Session: Nonindigenous Species: Methods of Introduction and Impacts. Contact: Richard E. McCabe, Wildlife Management Institute, (202) 371-1808

March 22-25: The Floodplain of the Future, 2nd Annual Conference on Natural Resources of the Missouri River Basin, Nebraska City, NE. Contact: Pam Haverland, USGS/BRD, Environmental & Contaminants Research Center, 4200 New Haven Road, Columbia, MO 65201, (573) 876-1841, FAX (573) 876-1896, E-mail: pamela_haverland@nbs.gov.

April 15-17: Team Wetlands: 101 Ways to Win for Wetlands, Arlington VA. The American Wetlands Month Communities Celebration emphasizes

interactive sessions on how to build community wetlands programs and projects. Contact the Terrene Institute at (703) 548-5473; email: terrinst@aol.com.

April 29-May 3: Rivers - The Future Frontier, Anchorage, AK. Contact the River Management Society at (406) 549-0514; email: rms@igc.apc.org.

May 3-6: Watershed Management: Moving from Theory to Implementation, Denver, CO. Water Environment Federation. (703) 684-2400.

June 8-12: 19th Annual Meeting of the Society of Wetland Scientists, Anchorage, AK. Contact: Terry Brock, Box 22014, Juneau, AK 99802, (907) 586-7863, FAX (907) 586-7922, e-mail: tbrock@ptialaska.net or visit the SWS web page at <http://www.sws.org>

June 8-12: GCIP Mississippi River Hydrometeorology Conference "Predicting Climate Variability and it's Implications for Water Resource Management. Regal Riverfront Hotel, St. Louis, MO. The conference will highlight scientific developments in the GEWEX (Globe Energy and Water Cycle Experiment continental-scale International Project (GCIP). In addition it will address other climatological, hydrometeorological and environmental research issues in the Mississippi River Basin.



June 23-28: First International Ictalurid Symposium - Catfish 2000 Davenport, IA. Contact Steve Eder, Missouri Dept. of Conservation, P.O. Box 180, Jefferson City, MO 65109-0180, (573) 751-4115, FAX

(573) 526-4047.

8617, Ext. 209.

August 23-27: 128th Annual Meeting of the American Fisheries Society, Harford Civic Center, Hartford, CT. Contact: Paul Brouha, (302) 897-

September ? : 88th Annual Meeting of the International Association of Fish and Wildlife Agencies. Contact: Georgia Department of Natural Resources.

Congressional Action Pertinent to the Mississippi River Basin

Agriculture

H.R. 2692, Bob Smith (R/OR.) to combine the Consolidated Farm Service Agency and the Natural Resources Conservation Service of the Agriculture Department as one agency and to ensure equitable treatment of socially disadvantaged farmers, ranchers and department employees.

Environment

H.R. 2818, Peter DeFazio (D/OR.) to repeal the pilot recreation fee program and establish a royalty on hardrock minerals and direct revenues to public recreational sites managed by the Interior Department and Forest Service.

Fish and Wildlife

S. 361 (Jeffords, R/VT) amends the Endangered Species Act to prohibit the sale, import, and export of products labeled as containing endangered species.

S. 491 (Ford, R/KY) to amend the National Wildlife Refuge System Administration Act of 1966 to prohibit the Fish and Wildlife Service from acquiring land to establish a refuge of the National Wildlife Refuge System unless at least 50% of the land owners in the proposed refuge favor the acquisition.

S. 751 (Shelby, R/AL) to protect and enhance sportsmen's opportunities and conservation of wildlife.

H.R. 374 (Young, R/AK) amends the Sikes Act to enhance fish and wildlife conservation and natural resources management programs.

H.R.1718 (Cunningham, R/CA) to protect and enhance sportsmen's opportunities and enhance wildlife conservation.

H.R. 2894, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act of 1973 enabling federal agencies responsible for the preservation of threatened and endangered species to rescue and relocate members of any of those species that would be taken in the course of certain reconstruction, maintenance or repair of federal or non-federal man-made flood control levees.

H.R.2911, Wally Herger (R/CA) and Richard Pombo (R/CA) to amend the Endangered Species Act improving the ability of individuals and local, state and federal agencies to prevent natural flood disasters.

Flood Insurance

H.R. 230 (McCollum, R/FL) to ensure that insurance against the risk of catastrophic natural disasters, such as hurricanes, earthquakes, floods, and volcanic eruptions, is available and affordable, and to provide for expanded hazard mitigation and relief.

Forests

S. 977 (Robert Torricelli, D/NJ) and John Kerry, D/MA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 to ban clearcutting and strengthen preservation on federal lands, and designate ancient forests, roadless and other areas where no logging may occur.

S. 1058 (Richard Durbin, D/IL) to amend the National Forest Management Act of 1976 to ban timber sales where the cost of making timber available for the sale is greater than the expected revenues from the sale in the Shawnee National Forest in IL.

S. 1253, Larry Craig (A/ID) to streamline the forestry decision-making process in the Bureau of Land Management and Forest Service with a

multi-use outlook.

S. 1254, Larry Craig (A/ID) to outline a process by which states could take over the management of federal lands for 10-year periods with Congress' approval.

H.R.101 (Baher, R/LA) amends the National Forest Foundation Act to extend and increase the matching funds authorization for the foundation, to provide additional administrative support to the foundation, to authorize the use of investment income, and to permit the foundation to license the use of trademarks, trade names, and other such devices to advertise that a person is an official sponsor or supporter of the Forest Service or the National Forest System

H.R.1376 (Eshoo, D/CA) to amend the Forest and Rangeland Renewable Resources Planning Act of 1974 and related laws to strengthen the protection of biodiversity and ban clearcutting on federal lands and to designate certain federal lands as Northwest Ancient Forests, roadless areas, and special areas, where logging and other intrusive activities are prohibited.

H.R.1861 (Hinchey, D/NY) amends the Forest and Rangeland Renewable Resources Planning Act of 1974, the Federal Land Policy and Management Act of 1976, the National Wildlife Refuge System Administration Act of 1966, the National Indian Forest Resources Management Act, and title 10 of the U.S. Code to strengthen the protection of native biodiversity and to place restraints upon clearcutting and certain other cutting practices on U.S. forests.

H.R. 2127 (Frank Riggs, (R/CA) to streamline Forest Service operation by contracting out some services connected with planning and implementing programs in national forests.

H.R. 2458 (Helen Chenoweth, R/ID) to authorize the Agriculture and Interior secretaries to remove forest floor overgrowth and conduct other management practices where federal lands abut urban areas.

H.R. 2789, Cynthia McKinney (D/GA) to eliminate commercial logging on federal lands and facilitate economic recovery and diversification of communities dependent on logging.

Grazing

H.R. 547 (Nader, D/NY) requires the Interior and Agriculture secretaries to establish grazing fees at fair market value for use of public grazing lands.

H.R. 2493 (Bob Smith, R/OR) the Forage Improvement Act of 1997, to make "moderate" changes to grazing regulations, such as setting a formula for fees at \$1.84 per adult head of cattle per month, up from the current amount of \$1.35. The bill also would guarantee lease renewal after 10 years if ranchers have followed all lease terms, and it would codify the structure and duties of Resource Advisory Councils, which give the federal government advice on managing federal lands. Approved by the House on October 30.

Land Acquisition

H.R. 1487 (Campbell, R/CA) to provide off-budget treatment for one-half of the receipts and disbursements of the Land and Water Conservation Fund, and to provide that the amount appropriated from the fund for a fiscal year for federal purposes may not exceed the amount appropriated for that fiscal year for financial assistance to the states for state purposes.

H.R. 1732 (Kildee, D/MI) to amend the Land and Water Conservation Fund Act of 1965 to provide for off budget treatment of the receipts and disbursements of the land and water conservation fund and the accounts established under that act.

Mining

S. 325, S. 326, and S. 327 (Bumpers, D/AR) to repeal the percentage depletion allowance for certain

hardrock mines, provide for the reclamation of abandoned hard-rock mines, and ensure federal taxpayers receive a fair return for the extraction of locatable minerals on public domain lands, respectively.

H.R. 2945, John Duncan (R/TN) and Jim Hansen (A/UT) to amend the Land and Water Conservation Fund to establish a Community Recreation and Conservation Endowment with certain escrowed oil and gas revenues.

Parks

S. 991 (Frank Murkowski A/AK) to make technical-changes to Omnibus Parks and Public Lands Management Act of 1996.

H.R. 104 (Bartlett, R/MD) authorizes the private ownership and use of National Park System lands.

H.R. 901 (Young, R/AK) to preserve the sovereignty of the U.S. over public lands by requiring that United Nations heritage designations be subject to congressional approval. Approved by the House on October 8.

H.R. 2143 (Miller D/CA) to provide certain escrowed oil and gas revenues be available to improve national parks' visitors facilities.

Public Lands

S. 477 (Hatch, R-UT) amends the Antiquities Act to require an Act of Congress and the consultation with the governor and state legislature prior to establishment by the president of national monuments in excess of 5,000 acres.

S. 691 (Murkowski, R/AK), to require public review and the authorization of Congress for any presidential designations of national monuments, biosphere reserves, and world heritage sites on public lands.

S. 749 (Dorgan, D/ND) to provide for more effective management of the National Grasslands.

S. 1118 (Frank Murkowski, A/AK) to set up a Community Recreation and Conservation Endowment of \$800 million for the state side portion of the Land and Water Conservation Fund

from oil and gas revenues.

S. 1176 (Craig Thomas, R/WY) to elevate the role of local and state governments under the National Environmental Policy Act. NEPA outlines the review process the federal government must follow before taking major actions on federal lands. Environmentalists in general oppose the measure for placing local governments above other residents and groups.

H.R. 919 (Miller, D/CA) establishes fair market value pricing of federal natural assets, and for other purposes.

H.R. 2223 (J.D. Hayworth (R/AZ) To amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

H.R. 2502 (John Duncan, R/TN and Bill Jenkins, R/TN) to amend the Land and Water Conservation Fund Act of 1965 to allow national park units that cannot charge entrance fees to retain other fees.

H.R. 2223, J.D. Hayworth (R/AZ) to amend the Recreation and Public Purposes Act to allow the conveyance of public land and forests to local education agencies for elementary, secondary and charter school use.

Refuges

H.R. 511 (Young, R/AK) to amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the refuge system.

H.R. 512 (Young, R/AK) to prohibit the expenditure of funds from the Land and Water Conservation Fund to create new National Wildlife Refuges without specific authorization from Congress. Passed by the House Resources Committee. Opposed by the President.

H.R. 1420, the National Wildlife Refuge System Improvement Act of 1997 reforming the management of the National Wildlife Refuge System. Passed by both houses and signed into law by the President on October 9.

Takings

S. 709 (Hager, R/NE) to protect private

property rights guaranteed by the fifth amendment to the Constitution by requiring federal agencies to prepare private property taking impact analyses and by allowing expanded access to federal courts.

S. 781 (Hatch, R/UT) to establish a uniform and efficient federal process for protecting property owners' rights under the fifth amendment.

Water and Wetlands

H.R. 128 (Crapo, R/ID) to preserve the authority of the states over waters within their boundaries, and to delegate the authority of the Congress to the states to regulate water.

H.R. 227 (McColum, R/FL) directs

the Secretary of the Army to conduct a study of mitigation banks.

H.R. 238 (Robert Menendez D/NJ) to amend the **Oil Pollution Act of 1990** to make the act more effective in preventing oil pollution in the nation's waters through enhanced prevention of, and improved response to oil spills, and to ensure that citizens and communities injured by oil spills are promptly and fully compensated, and for other purposes.

H.R. 550 (Oberstar, D/MN), NonPoint Source Water Pollution Prevention Act of 1997 amends the Clean Water Act to establish requirements and provide assistance to prevent nonpoint sources of water pollution, and for other purposes.

H.R. 640 (Hostettler, R/IN) amends the wetland conservation provisions of the **Food Security Act of 1985** and the **Clean Water Act** to permit the unimpeded use of privately owned cropland and pasture land that have been used for the planting of crops or the grazing of corn in a least 5 of the preceding 10 years.

H.R. 2556, Jim Saxton (R/NJ) to reauthorize the **North American Wetlands Conservation Act** and the **Partnerships for Wildlife Act**.

Sources: Land Letter, STATUS REPORT, Vol.16, No. 2,5,8,11,13 17 20, 25, and 26; and NOAA Legislative Informer, 3/97, Issue



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