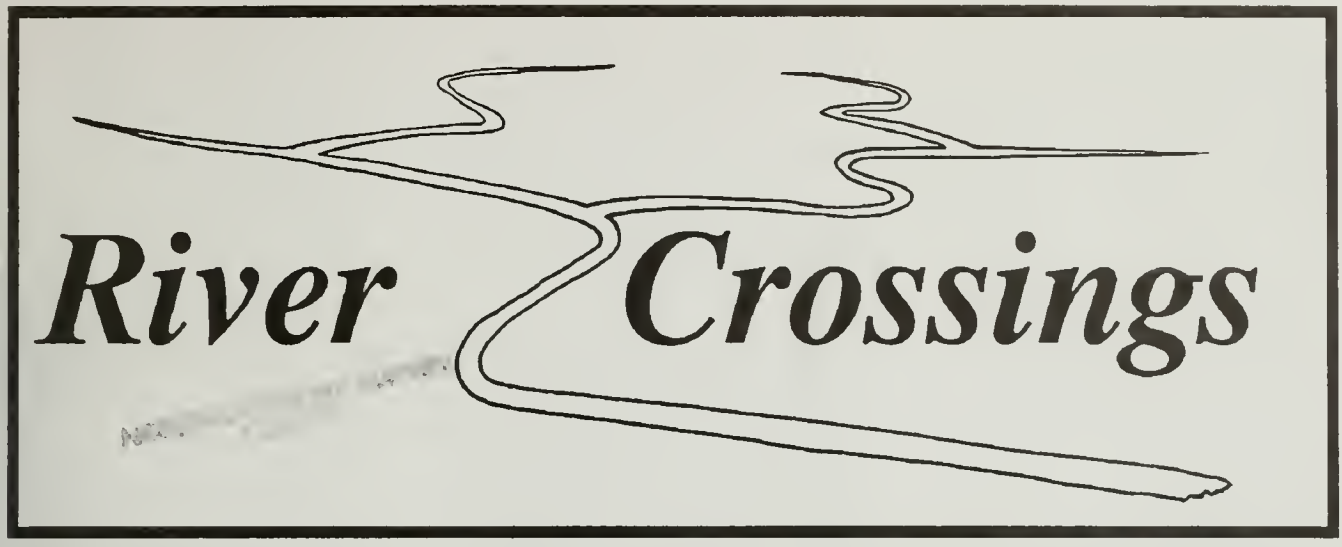

Volume 2 July/August 1993 Number 4

Congressional Hearing Held On H.R. 2500, Cooperative Interjurisdictional Rivers Fisheries Resources Act of 1993

On August 3rd the Subcommittee on Fisheries Management of the Merchant Marine and Fisheries Committee held a hearing on H.R. 2500, the Cooperative Interjurisdictional Rivers Fisheries Resources Act of 1993.

Gary Matlock (National Marine Fisheries Service), Gary Edwards (U.S. Fish and Wildlife Service), Wes Sheets (Nebraska Game and Parks Commission), Mark Reeff (International Association of Fish and Wildlife Agencies), Paul Brouha (American Fisheries Society), and Norville Prosser (Sport Fishing Institute) all testified in support of the Act. H.R. 2500 would create a National Council on Interjurisdictional Rivers and test fund MICRA over a 3-year period.

The Illinois Department of Conservation and American Waterways Operators (AWO) both submitted written testimony at the hearing. The Illinois Department of Conservation testimony supported the bill, but that of the AWO (the trade association representing the navigation industry) clearly opposed it.

The AWO testimony referred to the National Council as unnecessary bureaucracy and complained of its proposed cost in these days of deficit spending. AWO compared the National Council's proposed $1 million budget to the smaller budget of the Inland Waterways Users Board ($200,000) which advises Congress and the Corps of Engineers on navigation structures on the inland waterway system.

The AWO testimony claimed that navigation projects "created" many of the water areas utilized by the public for recreation and fishing today, but said nothing of the huge cost of maintaining or replacing those navigation structures. As a case in point, reconstruction of the Lock and Dam 26 at Alton, IL in the early 1980's cost the taxpayer over $1 billion. The AWO testimony also failed to recognize the impacts that navigation projects have had on native fish and wildlife species.

AWO concluded their testimony by saying that they see no reason to fund a costly $2 million "pilot test" of MICRA. AWO suggested just letting MICRA test itself, and then if it works use it elsewhere.

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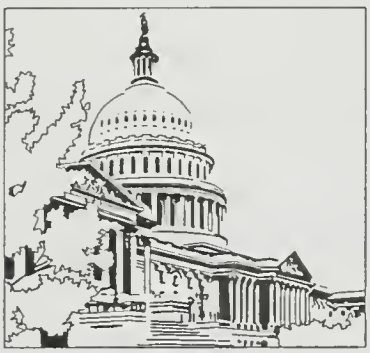
The hearing itself became somewhat of a "buzz saw" for the panel who gave oral testimony, because Congressmen Don Young (R/AK) and Gene Taylor (R/MS) picked up on the AWO position and aggressively cross examined panel members. The panel did an admirable job of countering Young and Taylor's negative arguments, but the controversy did cast doubt on the potential success of H.R. 2500 in its present form.



No one seems to be suggesting that H.R. 2500 is doomed because of the arguments of two Congressmen. Other Committee members remained silent and Chairman Manton seemed supportive. Additionally many other Congressmen will have something to say about the future of this Act.

What does seem sure is that H.R. 2500 will likely surface from the Merchant Marine and Fisheries Committee in a form different from when it was originally introduced. At the hearing it seemed that MICRA will have a better chance of being funded than will the National Council on interjurisdictional rivers. In fact, Congressman Young stated in his opening remarks that we could save a lot of time with this Act if we were to rewrite it to be just a MICRA funding bill and get on with it.

Congressman Young and Taylor didn't seem to be well informed on all of the bill's merits. Supporters of the bill should therefore renew contacts with their respective Congressmen, answer any questions which may come up, and continue to stress its importance to the future of our interjurisdictional rivers' fisheries.

Steering Committee Meeting

The MICRA Steering Committee met in Kansas City, MO on June 28th. Members from nine states and one federal agency attended.

Agenda items included (1) the Paddlefish/Sturgeon Committee's Strategic Plan, (2) the National Framework for the Management and Conservation of Paddlefish and Sturgeon Species, (3) the Interjurisdictional Rivers Fisheries Resources bill, (4) funding of MICRA projects through cooperative Federal Aid projects, and (5) election of new officers.

Kim Graham (Missouri) reviewed comments received on the Paddlefish/Sturgeon Committee's Strategic Plan and commented on how he and the Coordinator had addressed them. The states present unanimously opted to endorse the Plan, but in the absence of MICRA by-laws, decided to conduct a final mail review to gain acceptance by all the states.

The Fish and Wildlife Service's Framework for Paddlefish and Sturgeon Conservation and Management was summarized by Lee Hillwig of the Service's Arlington, VA

River Crossings

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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.

office. Hillwig explained that MICRA was recognized by the Framework as the coordination point for all federal paddlefish and sturgeon activity in the Mississippi River Basin. He said that for the Framework to be successful, strong endorsement is necessary by all constituents, especially MICRA. It was agreed that while the MICRA Paddlefish/Sturgeon Plan is related to the Service's Framework Plan, the MICRA document should not be viewed as a "step-down" plan.

Discussion regarding the, then soon to be introduced, Cooperative Interjurisdictional Rivers Fisheries Resources Act concluded that strong support for the bill is needed from all the states. The Coordinator agreed to develop informational materials and distribute them to the "*River Crossings*" mailing list as soon as the bill is introduced.

Materials regarding the potential for funding of MICRA projects through the cooperative federal aid program was presented by Bob Adair, Fish and Wildlife Service, Twin Cities, MN. These materials will be sent out to all member states for review. It should be made clear that use of the federal aid program is, of course, up to each individual state.

Wes Sheets ended his term as MICRA Chairman by announcing results of the 1993 election. Jim Fry (Missouri) automatically succeeded to the Chairmanship, Wayne Pollock (Tennessee) was elected Vice Chairman, Frank Jernejcic (West Virginia) was elected to a second term and Mike Conlin (Illinois) and Herb Jones (TVA) were elected to first terms on the Policy Review Committee.

The Steering Committee agreed to pursue development of MICRA by-laws and to form a MICRA Exotic, Transgenetic, and Non-Indigenous Stocking Policy Committee in 1993-94.

The Great Flood of 1993

Flood crests and property damages caused by the Mississippi River Basin floods of 1993 have reached record levels, but the actual amount of discharge contributing to this devastation is well below the historic record level (1,300,000 cfs) which occurred in 1844.

Currently available information suggests that the volume of water at many sites along the Missouri, Mississippi and Illinois Rivers in mid July was 30 percent below previous record flood events. By these standards, the "Great Flood of 93" is more on the order of a 100 year flood event (by volume) than a new "flood of record".

Table 1 displays various historic stages and discharges at St. Louis. You can see from this table that the 1973 "flood of record" (by river stage) passed only a little over 65% of the volume of water of the 1844 "flood of record" (by volume). By volume the 1973 flood ranked only 7th for the period of record. Estimates vary, but it is largely agreed that the 1993 flood passed something on the order of 1,000,000 cfs at St. Louis and crested at a stage close to 50 ft., making the "Great Flood of 1993" the 2nd or 3rd largest recorded flood by volume, and the number one flood of record by stage.

This apparent dichotomy (lower flows producing higher flood stages) is the result of many factors, but channelization of mainstem rivers and their tributaries, floodplain encroachment through construction of levees and dikes, wetland drainage and watershed land use patterns are important contributors which also produce major impacts on fish and wildlife resources.

Watershed development and poor land conservation practices coupled with channelization increase run-off rates. Levees and dikes constrict the floodplain, reduce water storage capacity and produce relatively higher river stages for a given volume of water. When levees are breached or overtopped, the resultant flooding and property damage is much greater than might have occurred had sufficient channel and floodplain storage capacity been maintained between the levees.

Figure 1 depicts a cross section of the Mississippi River at St. Louis showing flood height with levees (1973) and without levees (1844). This figure clearly shows how the levees "squeeze" the river into a narrow channel where the water has no place to go but up. This forces the river's water through a narrow "funnel-like" opening left between the levees, and causes upstream ponding of the river (Figure 2). These "ponded" floodwaters back up into tributaries and onto upstream lands, many of which never flooded before the levees were in place.

Its easy to see from Figure 1 why the devastation is so great when a levee breaks. A wall of water as much as a 50 feet deep, with all the force of water backed upstream, is sent gushing across the once protected area. When this occurs the awesome force of water can sweep away whole houses, destroying everything in its path. This situation was actually caught on tape last month by one of the national television networks. A whole house was just washed away when one of the levees broke!

Without levees, as seen in Figure 1 (1844) the same water is spread out across the entire floodplain causing little structural damage. Channel constriction, federal levees, levee and drainage district levees and private levees account for most of the floodplain encroachment in the Upper Mississippi and Missouri river drainage basins. Much of the decline in Mississippi River Basin riverine fishery resources can be attributed to this loss of habitat. Dikes and levees have isolated the Basin's rivers from historic floodplains, fragmented the river

Table 1. Worst Floods on the Mississippi River at St. Louis

By Volume of Water

Rank	Date	Cubic Feet Per Second	River Stage (in feet)	Type of Flood	River-stage Rank
1	June 27, 1844	1,300,000	41.32	500-year	2
2	June 10, 1903	1,019,000	38.00	100-year	9
3	May 19, 1892	926,500	36.00	50-year	#
4	April 26, 1927	889,300	36.10	40-year	#
5	May 3, 1883	862,800	34.80	30-year	#
6	July 15, 1909	860,600	35.25	30-year	#
7	April 28, 1973	852,000	43.30	30-year	1
8	June 20, 1908	850,000	34.95	25-year	#
9	April 30, 1944	844,000	39.14	25-year	6
10	May 24, 1943	840,000	38.94	25-year	8

By River Stage Readings

Rank	Date	River Stage (in feet)	Cubic Feet Per Second	Type of Flood	Volume Rank
1	April 28, 1973	43.23	852,000	30-year	7
2	June 27, 1844	41.32	1,300,000	500-year	1
3	July 21, 1951	40.28	782,000	20-year	#
4	July 1, 1947	40.26	783,000	20-year	#
5	May 4, 1983	39.27	708,000	10-year	#
6	April 30, 1944	39.14	844,000	25-year	9
7	October 9, 1986	39.13	728,000	15-year	#
8	May 24, 1943	38.94	840,000	25-year	10
9	June 10, 1903	38.00	1,019,000	100-year	2
10	December 7, 1982	37.98	739,000	15-year	#

Not listed in top 10 of this category

Source: U.S. Army, Corps of Engineers/St. Louis Post-Dispatch

ecosystem into isolated components, reduced nutrient inputs and productivity, reduced habitat diversity, and completely eliminated vast areas of vital spawning and nursery habitat.

Levees became a major point of contention during the 1993 flood because as the Mississippi River flooding moved downstream, it became painfully obvious to homeowners in its path that the levee system was constricting the river and causing waters to back up in tributaries and flood unprotected areas, many of which undoubtedly had never before been flooded.

News reports of levee breaks and the resultant anticipated reduction in flood crest reinforced the fact that the levees were preventing flood waters from inundating natural floodplains, most of which are currently used for agricultural production. These levees were, in fact, adding to flood damages in unprotected areas.

In many instances farmers, intent on keeping their croplands dry, continued pumping interior drainage waters from agricultural levee districts, despite rising flood waters. Some of these pumping systems use pipes 96" in diameter, so in many ways they were like small tributaries contributing to the flood. These interior runoff waters, pumped into an already flood swollen river, contributed significantly to the inundation of neighboring towns and communities.

At Hannibal, Missouri it was reportedly necessary to add two ft. of sand bags to the top of the city's 500-year flood wall in order to protect the city's historic district. This, in order to keep pace with the raising of ag levees across the river in Illinois. As each levee was raised, flood waters just kept rising in other

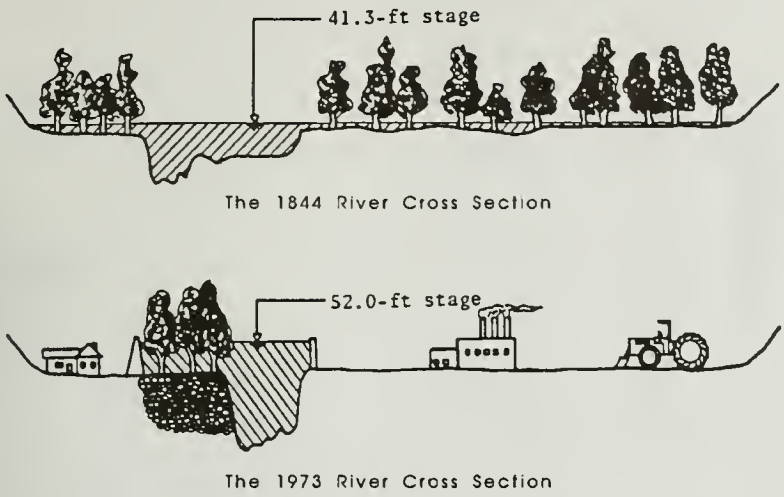


Figure 1. Cross section of the Mississippi River at St. Louis as it might have appeared during the record flood of 1844 (1,300,000 cfs) and as the same flood appeared in 1973 with the levee system in place (Simons, et al., 1975).

areas; each levee district, city or town frantically tried to build higher and higher levees.

Eventually, however, the waters just got too high and the levees began to fail, one by one, some that protected towns and villages and some that protected ag land. As each levee broke, neighboring towns and levee districts breathed a temporary sigh of relief as flood crests dropped, almost instantaneously by as much as two feet. In fact, in one instance near Quincy, Illinois, farmers complained that an agricultural levee had been deliberately sabotaged by some unknown person, causing inundation of thousands of acres of cropland. Whether or not such sabotage occurred is unknown, the incident remains under investigation. But this incident illustrates the recognition by farmers that their levees were, in fact, viewed by other citizens as contributing to the problem.

Agricultural levees bordering the Mississippi and its tributaries were originally designed to be breached at flood stages lower than those protecting cities, towns, and industrial installations. However, instead of being breached at the appointed river stage, many of the levees were raised by as much as 8 ft. by panicked farmers in a futile effort to keep floodwaters off of their fertile croplands.

The flood of '93 was indeed a "battle of levees. It pitted land owner against land owner in a race to see who could raise their levee high enough to beat the rising waters." Most of the flood damage on the Upper Mississippi occurred between Dubuque, Iowa and Cairo, Illinois. Upstream from Dubuque there are few levees and downstream from Cairo the river's channel is not as constricted and thus is allowed to widen out into a federally maintained floodway (wide enough to accommodate all the flow without loss of property or massive destruction).

It is important to note that the damage caused by the Flood of 1993 did not come without warning. As long as 142 years ago Charles S. Ellet, Jr., a civil engineer criticized the building of levees in the Mississippi River Basin. Mr. Ellet wrote a report to Congress in 1851 stating that:

(1) Levees increase the height of flood levels by constricting the river and forcing water to flow higher and faster, and

(2) they encourage development of the flood plain.

Congress refused to listen, and the farms, businesses and houses that were built on the floodplain behind levees became sitting ducks for the inevitable floods that occurred again this year.

Since the days of Mr. Ellet, geologists,

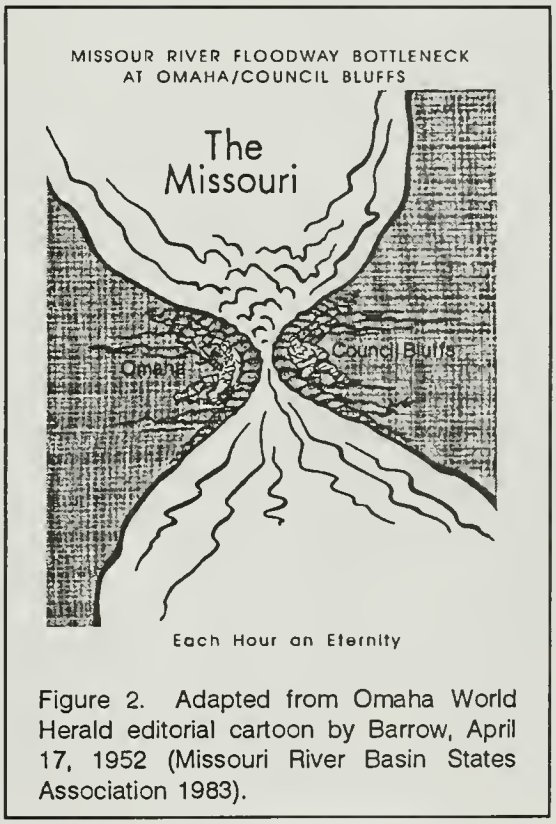


Figure 2. Adapted from Omaha World Herald editorial cartoon by Barrow, April 17, 1952 (Missouri River Basin States Association 1983).

biologists, and environmentalists alike have continued to argue against the ills of floodplain development and levee construction.

In 1953, after the great 1951 flood, Dr. Walter Kollmorgen, geographer at the University of Kansas made the following observations:

- Urban and industrial losses would be largely obviated by set-back levees and zoning, and thus cancel the biggest share of the assessed benefits which now justify big dams.

- Farm improvements in valleys several miles or less in width would be zoned to flood-free elevations and therefore cancel the second highest assessed benefits which now largely justify the big dams.

- Crop losses on wide floodplains would be mitigated by damming narrow tributary valleys -- largely V-shaped valleys -- but occasional losses would be accepted on this usually highly productive land.

- Land and soil destruction by flooding is largely a myth and therefore does not justify flooding out one set of farmers behind dams to save another set of farmers below the dams.

- Water navigation on the Missouri as a cheap mode of transportation is a total myth and justifies no expenditures whatsoever.

Geologist Charles B. Belt Jr. of St. Louis University studied the flow of the Mississippi during the flood of 1973, and compared it to flows in pre-levee days. Belt warned against the threat of future flooding. The 1973 flood crested at 43.3 feet at St. Louis; the flood of 1993 broke that record stage by 6-7 ft.

The St. Louis Post Dispatch quoted Mr. Belt as saying "The levees in '73 caused the water level to be about 8 feet higher than it would have been in the 19th century. Floods are not caused by man", he said. "They're caused by rain. But the fact of the matter is, in '73 the flood record here at St. Louis was manmade."

The Post Dispatch quotes Roger Pryor, Coalition for the Environment, as saying much the same thing about the Flood of '93. "They've been referring to this as a disaster caused by nature. This is human caused, and that's the real disaster here."

Pryor says that government projects have played a vital role in the destruction totals. "The Corps builds better levees; they are spending our money," he said. "Those levees don't fail, but they contribute to flood height, which causes the other levees upstream to fail."

According to the same Post-Dispatch article, St. Louis District, Corps of Engineers officials didn't accept any responsibility for the flooding. Gary Dyhouse, District hydrologist, was quoted as saying, "...if levees result in flood plain development, that's a concern for the local governments, which pass the enabling zoning laws." He said further that, "The federal government is not in the land-use zoning business. All the Corps levees were built to protect development that's been there for a long time. Granted, though, once you get protection for land behind a levee it becomes more attractive to development."

Environmental groups across the nation are calling for the government to reconsider federal flood insurance programs, and to discourage building on the floodplain. They also suggest that the levee system be rebuilt to allow part of the flood plain to revert to wetlands to act as relief valves for floodwater. Farming and recreation may be allowed, but no structures.

Sources: St. Louis Post-Dispatch; USA Today; Simons, D.B., et al. 1975. The River Environment - A Reference Document. U.S. Fish and Wildlife Service. Contr. No. CER 75-76, DBS-PFL-YHC-SAS-14.; Missouri Basin States Association. 1983. Missouri River Flood Plain Study - Final Report, Billings, MT.; and Kollmorgen, W.M. 1953. Settlement Control Beats Flood Control. Economic Geography, Vol. 29, No. 3, pp. 208-215.

Corps Appoints Flood Czar

Army Chief of Engineers Lt. Gen. Arthur E. Williams named Brig. Gen. Albert J. Genetti Jr., on August 4th to coordinate flood recovery efforts of the U.S. Army Corps of Engineers throughout the Middle and Upper Mississippi and Missouri River Basins.

Genetti, currently commander of the Corps' Ohio River Division in Cincinnati, has been appointed Deputy Director of Civil Works for the Middle and Upper Mississippi Basin. He will head a St. Louis based team of 30 Corps professionals to oversee the inspection and restoration of levees and other flood protection works under the authority of Public Law 84-99.

"This extraordinary flood event, which caused extensive damage over such a wide-spread area, demands a rapid, coordinated engineering effort that is responsive to all those communities affected by this national tragedy", Williams said General Genetti will bring compassion, environmental concern, engineering skill and a sense of urgency to this vital recovery effort."

Genetti and his team will develop a strategy and management plan for Corps' efforts in the disaster area. The team will coordinate the efforts of three engineer divisions and six engineer districts directly involved in this recovery.

Additionally, the team will work closely with other federal agencies and state and local officials to ensure understanding of and compliance with Public Law 84-99 during the restoration of federal and eligible

nonfederal flood protection works to pre-flood condition.

Public Law 84-99, Flood and Coastal Storm Emergencies, authorizes the Chief of Engineers, acting for the Secretary of the Army, to perform emergency operations for both flood response and post-flood recovery activities and rehabilitate flood control works damaged by flood.

Izaak Walton League of America Tells Senate Panel That the Corps of Engineers "Mismanages" the Mississippi

The director of the Izaak Walton League of America's (IWLA) Midwest Office told a hearing before the U.S. Senate Subcommittee on Clean Water, Fisheries and Wildlife on August 4th, 1993 that the Corps of Engineers has mismanaged the Mississippi River.

The IWLA recommended that a panel be convened under the auspices of the National Academy of Sciences to evaluate river management and advise Congress on future planning on the river.

"I am here today, not to tell you that I have all the answers to the management questions raised by the flood waters, but to tell you that we need answers to these questions before we embark on the enormous federal spending that will be required to restore the Mississippi in the aftermath of the flood," said Paul Hansen, director of the IWLA Midwest Office. "I am here with one simple suggestion and request, that you require the Corps to divert a significant portion of their action "feasibility" study to conduct an independent analysis of the management of the Mississippi with the National Academy of Sciences." This report can then be used by Congress and the President to determine the most cost-effective means of managing the Mississippi in the future – for flood control, for the environment, and for navigation. The extensive damage caused by these floods serves to highlight the fact that the U.S. Army Corps of Engineers manages the Mississippi in a manner that sacrifices the multiple purposes of river management to the single purpose of navigation.

'Such a comprehensive and independent study could be completed for a fraction of the $33.6 million now being spent by the Corps on "feasibility" studies for the single purpose of a major navigation capacity expansion – a project that is deemed "unwise" and "not justifiable" by the only independent and academic analysis that it has been given (by the University of Iowa's Public Policy Center).

'While the floods of 1993 would have been devastating to human development on the historic floodplain under any river management scheme, they have clearly been made worse by the drainage of wetlands, channelization of the river and construction of levees."

The IWLA also made the following recommendations for changes in the Clean Water Act which they feel would benefit the Mississippi River:

- Providing a special designation for the Mississippi River. In previous revisions of the Clean Water Act, Congress has provided special designation for the nation's largest lake system and the nation's largest estuary. Special status for the Great Lakes and the Chesapeake Bay have vastly improved the management of these water bodies. It is time to extend this to the nation's largest river system.

- Encouraging a watershed-based approach to protection and restoration of waterbodies. To be successful, efforts to protect and restore the Mississippi and most other waterbodies must be based on watershed strategies that account for land uses in the watershed and their downstream impacts. Water quality protection efforts in this country are moving in this direction, and changes are needed in the CWA and its programs to reinforce this approach.

- Dealing more effectively with polluted runoff. Current totally voluntary approaches to non-point source problems are simply not working in the Mississippi basin. The country needs to lean more toward limited regulations that will provide the enforcement tools necessary to back up other approaches. Possible watershed-based models for dealing with polluted runoff more effectively are the new Coastal Zone Act Reauthorization Amendments (CZARA) to the Coastal Zone Management Act (CZMA), which attempt to encourage coastal states to take a more active approach to addressing non-point source threats, and the

proposed Oberstar polluted runoff bill, H.R. 2543.

• Strengthening wetland protection. The 404 wetlands sections of the current Clean Water Act must be revised or completely restructured to provide increased protection to wetlands, including taking cumulative losses into account.

• Fostering citizen participation. A certain amount of, Section 319 Non-point funds should be allocated to fund volunteer water monitoring programs that build citizen awareness, knowledge and support for their waterways. In addition, an urban watershed restoration project is needed to assist citizens groups in urban areas where low-income and ethnic minorities often use dangerously polluted sections of the River and its tributaries for subsistence fishing and other purposes.

• Improving procedures for setting standards. Standards should incorporate meaningful biocriteria that indicate the health of ecosystems much more effectively than numeric standards. In addition, better coordination of monitoring and standard setting is needed that considers cumulative impacts and overlapping permitting by multiple jurisdictions.

• Strengthening enforcement of current Clean Water Act provisions. Enforcement of the Clean Water Act should be strengthened by establishing mandatory minimum penalties for serious violations, based on current U.S. EPA and New Jersey Clean Water Enforcement Act definitions that reduce economic gains enjoyed by violators. In addition, discharge reporting and inspections should be increased, and current obstacles to citizen's suits removed.

• Restoring aquatic ecosystems. The National Research Council's report Restoration of Aquatic Ecosystems (National Academy Press, Washington, DC, 1992) should form the basis for the design of a national aquatic ecosystem restoration strategy. Aquatic ecosystem restoration projects should be designed to sustain and enhance the diversity of native species and ecological communities on a regional scale.

The IWLA has been deeply involved in Mississippi River conservation issues since 1924, when the League sponsored legislation to establish the Upper Mississippi National Wildlife and Fish Refuge.

Contact: Paul Hansen, Director Midwest Office, Izaak Walton League of America, 5701 Normandale Road, Suite 210, Minneapolis, MN 55424. (612) 922-1608.

American Rivers Blames the Floods of '93 on Environmental Tampering

"With severe flooding along the Mississippi River expected to continue for several more weeks, it is timely and important to point out that the increasing severity of these floods over the years is, to a large extent, rooted in environmental tampering and ignorance of the river's natural cycles.

'The problem along the Mississippi and elsewhere is not simply that it's been raining a lot. The Mississippi River today is not the Mississippi of years past. And the same is true for rivers across the country. We have destroyed large portions of the natural vegetative strips along rivers, dredged and straight-jacketed rivers, and damaged their natural flow patterns with numerous dams and levees. In fact, the engineering by the U.S. Army Corps of Engineers, which was supposed to reduce flooding, has instead made flooding problems worse over the years, and has given people living near rivers a false sense of security. Consequently, when the rains come, there is precious little vegetation and natural river bends left to slow and absorb floodwaters. The rain water no longer spreads over the flood plain to nourish the riparian land, and causes problems, instead."

Contact: Randy Showstack, American Rivers, 801 Pennsylvania Ave., S.E., Suite 400, Washington, D.C. 20003, (202) 547-6900.

Coalition for Aquatic Ecosystem Restoration Develops Mississippi River Watershed Restoration Strategy

The Coalition for Aquatic Ecosystem Restoration, an organization of non-governmental organizations (NGOs), met on August 3rd in Washington, D.C. to discuss Mississippi River flooding and a Watershed Restoration Strategy.

The meeting was headed by the World Wildlife Fund and the Environmental Defense Fund. The Coalition's principles related to restoration of aquatic ecosystems follows:

• The National Research Council's report Restoration of Aquatic Ecosystems (National Academy Press, Washington, D.C., 1992) should form the basis for the design of a national aquatic ecosystem restoration strategy.

• Aquatic ecosystem restoration projects should be designed to sustain and enhance the diversity of native species and ecological

communities on a regional scale.

• Federal and State agencies and/or non-governmental organizations should perform regional surveys of aquatic ecosystem restoration opportunities throughout the United States. Such surveys should take into account the hydrology, geology, topography, climate, soils, chemistry, and biological communities within each watershed studied.

• All Federal agency programs should take advantage of restoration opportunities. An examination of existing Federal programs to identify potential alterations that would facilitate restoration programs should be performed. Federal agencies, non-Federal agencies, and non-governmental organizations should be encouraged to work collaboratively as a cost-effective means to achieve restoration.

• The Federal government should establish programs in the U.S. Environmental Protection Agency, U.S. Department of Agriculture, U.S. Department of Interior, U.S. Army Corps of Engineers and other agencies to provide technical assistance and grants in aid to local units of government and non-profit organizations to facilitate collaborative watershed and aquatic ecosystem restoration and protection projects.

Contact: Tim Searchinger or Jim Tripp,, Environmental Defense Fund, 1875 Connecticut Avenue, NW, 10th Floor, Washington, D.C. 20037, (202) 387-3500, or Constance Hun, World Wildlife Fund, 1250 Twenty-Fourth St., NW, Washington, D.C. 20037-1175, (202) 293-4800.

Coalition for Aquatic Ecosystem Restoration Meets with Gore and Babbitt

The Coalition for Aquatic Ecosystem Restoration met with Al Gore and Bruce Babbitt to discuss actions and strategies the federal government should take in response to the 1993 flood.

Everyone agrees that the victims of this year's flooding should be provided appropriate assistance, but the method of controlling future flooding should be given serious evaluation.

Gore and Babbitt reportedly agreed that the U.S. Department of the Interior should play a lead role, at the federal level, in developing an action strategy to address the flooding issue as it applies to the long term response.

In other words, a "heads-up" approach should be developed early on to avoid over reaction in the hurry to repair flood damages. Such over reaction to the emotional side of the issue could result in repeating the mistakes of the past. Such an action strategy is presently being drafted, and the MICRA Coordinator, among others, has been asked to participate.

The River Floodway Concept A Reasonable and Common Sense Alternative for Flood Control

The lengthy quotation which follows builds a good case for implementation of the floodway concept on the Missouri River. It was taken from the following document: Missouri Basin States Association. 1983. Missouri River Flood Plain Study - Final Report, Billings, MT.

"The need for increased levels of flood plain management along the Missouri River has been recognized by state and federal water resource planners and managers for many years. Development of the flood plain along 753 river miles, covering nearly 2 million acres in five states (South Dakota, Iowa, Nebraska, Kansas, and Missouri) has given rise to a wide variety of management problems. Of fundamental concern to flood plain planners and managers, is the slow but continual loss of floodway conveyance capacity and evidence that river stages are increasing during periods of flooding. This loss has been attributed to bank stabilization and navigation structures, accretion of land in and along the channel, construction of agricultural and other private levees within the floodway, and construction of facilities in the floodway that are related to public, commercial, or industrial development. The weak, fragmented and inconsistent legal and administrative framework has been another major concern. Authority for management of the flood plain is divided vertically among various levels of governments, geographically by five states, and functionally through various state and federal agencies which makes it difficult to achieve a coordinated, compatible approach.

'In the study area, encroachment takes the form of residential, commercial, industrial and farm

structures, transportation and utility systems, levees and river control structures, and recreational facilities. Throughout the study area, the bank stabilization project has been the most pervasive improvement which has reduced the carrying capacity of the channel and floodway. Through it, the overall channel width has been progressively narrowed, and numerous secondary channels (chutes) have either been silted in or closed off by successional processes into forested or other wetlands. The lateral dikes induce increased hydraulic resistance along the banks and have also narrowed flow width. Furthermore, the channel areas land ward of the protruding dikes have progressively filled, creating accretion land. This land is then converted to crop land, which then is often protected by levees.

'Analysis of discharge/stage trends plotted over the past 30 years provide an indication of the effect of encroachments on the flow characteristics of the channel and adjacent over bank areas. These curves between Omaha and the mouth indicate rotation, with stages shifting upward in the higher discharge range. In Reach 2, the Nebraska City gaging station is illustrative. At normal flows of 30,000 to 40,000 cfs, stages have been constant over time. At 100,000 cfs, however, there has been a 4 to 5 ft. rise since the 1930's. In addition, channel capacity has been reduced from 150,000 to about 90,000 cfs. At St. Joseph in Reach 3 a similar trend was observed, although a channel cutoff does confuse the situation somewhat. In Reach 4, for conditions near bankful at 200,000 cfs, rises of 2 to 3 ft. are indicated at the Waverly and Boonville gaging stations. At Hermann, while no clear indication of a rising trend occurs at flows 300,000 cfs or less, a 3 to 4 ft. increase is indicated at discharges of 400,000 to 500,000 cfs. Near the mouth of the river, the Missouri River Flood Plain River Stage and Levee Inventory Study did not analyze stage/discharge trends- or project estimated effects of the 1844 flood onto today's condition. However, data in the 1974 Baseline (Vol. II) study by the Corps of Engineers, Kansas City District, indicates that the 1844 flood would now crest about 10 ft. higher at Boonville and 12 ft. higher at Hermann. An unpublished river stage/discharge study by C.B. Belt, Washington University (1980) provides data at St. Charles. It was estimated that a 5 ft. stage increase would occur under a bankful discharge of 200,000 cfs, while a 7 to 8 ft. stage rise would occur at 500,000 cfs.

'Historically the Pick-Sloan plan and the bank stabilization and navigation project have been the catalyst for development along the Missouri River. They did not, however, provide a comprehensive approach to flood plain management or development. The Pick-Sloan Plan was authorized to provide a 3,000-ft. flow way from Sioux City, Iowa to Kansas City, Missouri and a 5,000-ft. flow way from Kansas City to St. Louis. The concept was structural in approach as Congress did not contemplate supplemental regulation. While the plan progressed in the 50's and 60's, it ground to nearly a standstill in the 70's, largely due to economic considerations and lack of local acceptance by levee districts and a few landowners along the riverbank who would be adversely affected. By contrast, the bank stabilization project did not encounter difficulties and was completed in 1980.

'As an operational flood plain management tool, the Pick-Sloan Plan is no longer considered viable because: (1) adequate returns in terms of flood loss savings do not exist for structural measures, and (2) the NFIP (National Flood Insurance Program) approach, nonstructurally oriented, is now being emphasized..."

The flood of 1993 may change this!

"...The Pick-Sloan Plan utilized the concept of equal and opposite levee setback for flow way encroachment, or the idea that equal amounts of land on opposite sides of the river would be dedicated to flow way purposes. Under this concept, the property owners can easily determine how far they can encroach into the flood plain as a levee defines the floodway border. The bank stabilization project was not conceived to provide either flood plain management or flood control benefits. However, it did stabilize the banks, prevented the destruction of considerable development from bank erosion, and has made the flood plain appear a safer place for development"

The Pick Sloan Plan which created the large Missouri River reservoirs in the Dakotas and Montana thus also authorized a floodway from Sioux City, IA to the mouth at St. Louis, MO. As stated in the above quotation from the Missouri Basin States Association, this floodway was not completed, in large part, because of landowner opposition. These same landowners will now (in 1993), undoubtedly look to the government to assist in the recovery of private lands and property that perhaps could have been protected had the proposed Pick-Sloan floodway been implemented.

The following questions thus beg to be answered:

(1) Should society pay flood damages to landowners who are reported (by the Missouri Basin States Association) to have prevented completion of the Pick-Sloan floodway?

(2) Should the Pick-Sloan floodway be implemented now to prevent future losses?

The latter seems to be the "common sense approach" to future flood damage reduction. Large portions of the Missouri River floodplain between Sioux City and St. Louis experienced extensive flooding in 1951, 1952, 1973, 1984, and 1986; and now again in 1993. When is enough, enough!

Pick-Sloan should thus be re-evaluated in light of the current flood, environmental considerations, increasing flood stages, and escalating damage claims. Implementation of the Pick-Sloan floodway would not only provide flood control benefits, but significant benefits to fish and wildlife species; possibly even heading off the impending listing of endangered species.

The floodway (Figure 3) authorized by Pick-Sloan between Sioux City, Iowa and Kansas City, Missouri was 3000 ft. wide. Average width of the Missouri River channel in that reach is 700 ft., leaving 2300 additional feet needed to complete the authorized floodway (in theory 1150 feet on each side of the river). This corridor, stretched over the 383 mile reach in question totals 106,857 acres in area.

Pick-Sloan authorized a 5,000 ft. flood way from Kansas City to the mouth at St. Louis. Average width of the River channel in this reach is 1200 ft., leaving an additional 3800 feet needed to create the authorized floodway (in theory 1900 feet on each side of the river). This corridor stretched over the 367 mile reach in question totals 169,042 acres in area.

Total acreage authorized for a floodway from the head of navigation, just above Sioux City, Iowa to the mouth is thus 275,899 acres. This would provide a significant amount of flood storage capacity.

Missouri River bank stabilization and navigation projects have caused the direct loss of 100,300 acres of aquatic and 374,300 acres of terrestrial habitat in the floodplain between Sioux City and St. Louis. Those losses have occurred in the 300,000 acres formerly covered by the natural river and an adjacent 364,000 acres of active floodplain erosion zone.

Channelization has also shortened this reach by approximately 127 miles (1980 USFWS Coordination Act Report). Much of this loss is attributable to accretion of land in formerly diverse floodplain habitat and its subsequent conversion to private land and intensive agriculture. The vast majority of this land is now also protected by levees which contribute to further floodplain encroachment, development and habitat losses.

Aquatic riverine habitat losses have directly impacted native Missouri River fishes. The pallid sturgeon is federally-listed as endangered and five other species (lake sturgeon, paddlefish, sicklefin chub, sturgeon chub and blue sucker) are C-2 candidates under review for listing. Many other native Missouri River fish stocks are severely depleted.

River biologists generally equate the current threatened status of these fish stocks to losses in quantity and quality of habitats such as sloughs, chutes, backwaters, braided channels, wetlands, etc. Isolation of the river from its floodplain through levee and dike encroachment and flow modification to eliminate the natural hydrograph (periodic seasonal flood pulses) have reduced nutrient and carbon inputs, while restricting access to seasonally flooded spawning and nursery habitat. The result is an expanding list of endangered, threatened and depleted fishes.

There are two essential elements to achieve optimum restoration and recovery of Missouri River fish stocks. The first of these is re-establishing some measure of the natural hydrograph which includes a spring flood pulse. The Corps of Engineers Master Manual review (currently underway) is looking at a large number of Missouri River operating alternatives. Some of these are environmental quality (EQ) alternatives which require implementation of a modified natural hydrograph.

sicklefin chub

The second essential element is to restore and re-create quantity and diversity of riverine habitats and insure access to seasonal habitats and nutrient inputs through overbank flooding. This can best be accomplished through implementation of a floodway concept (Figure 3) involving setback levees to provide floodway capacity as envisioned in the original Pick-Sloan Plan.

The estimated costs of implementing

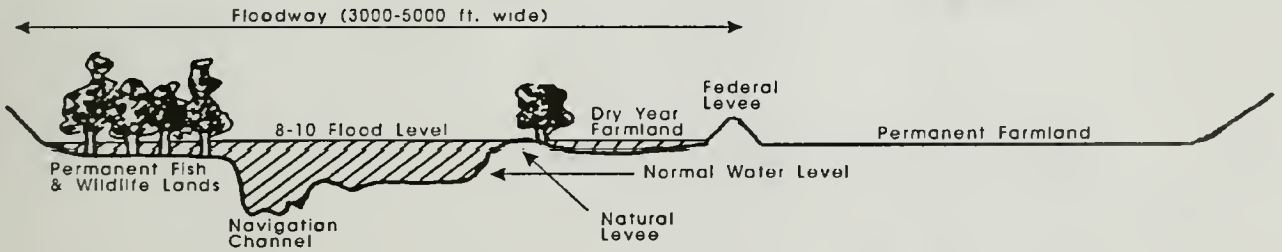
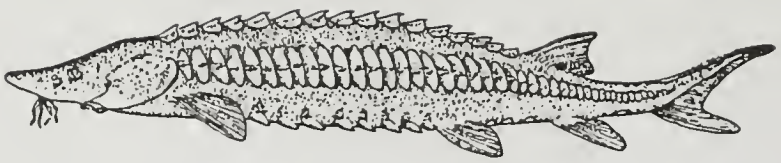


Figure 3. Hypothetical floodway showing various possible land uses. Any mix of the navigation channel and other land use could occur along any given river reach.

the floodway concept are great, but shrink quickly in comparison to the estimated $12 billion dollars needed for damage recovery from the 1993 flood, and to the $25 billion [reported by the Kansas City Star (7-17-93)] spent by the Corps of Engineers since 1927 to build the existing levees, dams, and channels along the Mississippi River and its tributaries.



lake sturgeon

Fee title acquisition of the entire Missouri River floodway would involve 275,899 acres at an estimated cost of $231,755,160. Flood easements could be used in lieu of acquisition on some lands, thereby allowing it to remain in agriculture, but subject to periodic flood losses. Additional costs may be incurred for levee construction at the limits of the designated floodway.

blue sucker

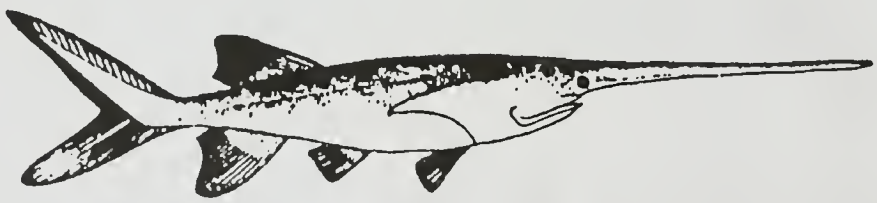
Cost estimates are based upon recent acquisitions of $1,100/acre for levee protected cropland, $600/acre for unprotected cropland and $300/acre for forest, wetland and shrub land. It is further assumed that approximately 60% of the acreage is in levee protected cropland, 20% is unprotected cropland and 20% is forest, wetland, shrub, etc. A quarter of a billion dollar investment in such a floodway is thus a rather reasonable and insignificant one-time cost for future protection against repeating the estimated billions lost to this flood.

The "Great Flood of 93" can thus provide a rare opportunity to serve the national interest by re-evaluating and pursuing the long overdue floodway alternative on the Missouri and other large rivers, while avoiding future human and economic loss. Many costly and pervasive problems could be resolved in this single, all-encompassing action.

Recurrent flood damages, economic losses and government disaster relief costs would be greatly reduced or eliminated. Many natural resource and endangered species issues could be resolved without the great expense and controversy of listing. Most of the economic values associated with the river such as recreation, water supply and hydropower would be unaffected or enhanced. Flood control would be enhanced, but there would be some loss of navigation benefits and agricultural production within the floodway. Some of this could likely be mitigated by providing for agricultural farming leases in dry years when water in the system does not occupy the entire floodway.

Implementation of the floodway concept also provides a grand opportunity to implement national objectives for biodiversity and ecosystem based management, while avoiding another of the costly, divisive and controversial "train wrecks" Interior Secretary Babbitt has referred to in reference to the spotted owl/developmental issue in the Northwest.

The current flood was, without a doubt a great human and economic disaster, however, if our leaders chose, the flood can also provide the stimulus necessary to focus public attention on an opportunity to get out in front of the flooding problem, and address many controversial issues at one time. Implementation of some form of the floodway can do just that. Strong, decisive leadership at state, local, and federal levels will be needed to make this happen!



paddlefish

Large River Fishery Resources Flood Impact Assessment Proposal

Extensive flooding throughout the midwest has set new records for river stages, property damage and agricultural crop losses. The Upper Mississippi, Missouri, and Illinois rivers and their major tributaries have all been affected.

From a fisheries viewpoint, the "Great Flood of 93" may, however, have been one of the most beneficial events in recent history. Flooding is the fuel which maintains and renews the dynamic equilibrium of large river ecosystems. Flood timing and duration may not have been ideal for all species, but measurable benefits

for many fish populations and communities are anticipated.

The levees that were breached provided access for these fish to historic floodplain spawning habitats. These habitats were not just inundated by a single "flash" event, but by waters that came up and stayed up throughout the summer. Young hatched this summer have had time to complete their first growing season before the rivers receded.

A multi-year management survey of fishery resources of the Missouri, Mississippi and Illinois River and selected tributaries is being proposed by Region 3, U.S. Fish and Wildlife Service biologists to document the fact that spring and early summer flooding restores some measure of the natural hydrograph, reconnects the river to vital production areas, and increases diversity and quantity of essential habitat. If providing access for large river fishes to backwaters and floodplain habitat through breached levees and dikes can help restore depleted fish stocks, the results should be directly measurable by standard fishery management indices such as year class strength, young of the year abundance, young/adult ratios, condition factors and growth rates.

A project designed to collect information for evaluating these indices is being recommended by the Fish and Wildlife Service's Columbia, Missouri; Winona, Minnesota; and Carterville, Illinois Fishery Resources Offices (FRO's).

Federal trust fishery resources such as endangered, threatened and candidate species, fish populations associated with National Wildlife Refuges impacted by flooding, and interjurisdictional fisheries resources would be targeted. The project would also attempt to assess impacts on mainstem and selected tributary riverine fish communities as a whole.

The project would be coordinated with the states and other entities through the Service's Region 3 Large River Fisheries Coordination Office, Mississippi Interstate Cooperative Resource Agreement (MICRA), Upper Mississippi River Conservation Committee (UMRCC), and Missouri River Natural Resources Committee (MRNRC). It is anticipated that individual state biologists would want to participate at different levels of the project.

The proposed efforts would be compatible with and complimentary to assessments being conducted by others. Data collected routinely by the Mississippi River Long Term Resource Monitoring Program (LTRMP) field stations would be utilized when applicable, but the proposed effort would go well beyond the geographic area and regimented approach of LTRMP which restricts their work to a few designated Mississippi and Illinois river pools. Relevant data collected by any other agencies or programs throughout the affected area would be incorporated to the maximum extent possible.

The "Great Flood of 93" thus provides a rare, perhaps once in a lifetime, opportunity to evaluate potential benefits of floodplain habitat restoration on depleted large river fishery resources at a grand scale. It also provides an opportunity to gather information which may support Fish and Wildlife Service objectives of biodiversity and ecosystem based management strategies for restoration and maintenance of Federal trust resources on large interjurisdictional rivers. These unique circumstances will likely not recur for many years.

Individual states are encouraged to support this effort through individual cooperative efforts, or by jointly participating in a coordinated federal project. More information can be obtained on the project from Jim Milligan or Jerry Rasmussen at (314) 876-1911. Information on joint participation by the states through cooperative federal aid projects can be obtained from Bob Adair (612) 725-3596.

Pallid Sturgeon - "The Spotted Owl of the Missouri River?"

As the Missouri and Mississippi rivers return to normal, according to an article in the St. Louis Post-Dispatch (7-18-93), the rivers' barge industry fears another--potentially deadlier--foe: "the pallid sturgeon".

The pallid sturgeon makes its home in the Missouri and lower Mississippi rivers and is listed on the nation's endangered species list. That endangered status, says the Army Corps of Engineers, may force the Corps to reduce the water presently being released from upriver dams to keep the Missouri River navigable in downstream states.

According to navigation interests such a cut also could affect the Mississippi River, and its barge traffic south of St. Louis, because the Missouri River is the largest tributary of the Mississippi.

The Corps is considering a plan that would reduce the flow of the Missouri River every August and September -- an act that it acknowledges could affect commercial navigation downstream during those months.

The idea is to recreate the Missouri River's natural hydrograph, with heavier flows in the spring and lighter

flows in the late summer than occurs under the presently controlled situation.

The Corps says that this change could aid the spawning of the pallid sturgeon and other upstream fish that are also in short supply. Opponents, including Missouri, Iowa and Kansas navigation interests, contend that an August-September shutdown would destroy commercial navigation on the Missouri River because barge companies say they can't stay in business if they can't ship during those months. The result, opponents say, would be increased transportation costs for Midwestern farmers and others who rely on rivers as the cheapest way to transport their products.

Supporters of a more natural hydrograph disagree, saying the river would still be navigable in the Spring to bring fertilizer upstream, and in the Fall to carry harvested crops downstream. It also may be navigable at shallower than 9-foot draft, even during August and September.

The downstream states accuse the Corps of Engineers of using the pallid sturgeon as a ruse to help upstream states, which have been clamoring for years for more water in their lake reservoirs to bolster their recreation industry.

"The issue is still recreation upstream vs navigation and flood control downstream," said Marc Solomon, legislative aide to Sen. John C. Danforth, R-MO., who is among those leading the opposition.

The Corps denies any subterfuge. It says it is considering several alternatives as it decides whether to stay the course or make changes in its management of the Missouri River and its six upstream dams and reservoirs.

But, in fact, the pallid sturgeon's endangered species status may leave the Corps few options in choosing an approach, says Col. John Schaufelberger, commander of the Corps' Missouri River Division. "It's native fish vs. navigation," he said. "In my personal view, this dispute is like the one in the Pacific Northwest between the spotted owl and timber industry."

Some Missouri officials disagree. Ron Kucera of the state's Department of Natural Resources concedes that the pallid sturgeon is rare. But he says the fish needs changes in its habitat that have little to do with changing the flows in the Missouri River (Editorial Note - One such change may be access to floodplain spawning and rearing habitats). Kucera accuses the Corps of trying to appease the politicians in Montana and North and South Dakota, where the largest dams are situated.

Reducing releases from the dams would raise the water levels in those states' reservoir lakes. Droughts in the late 1980s reduced the lakes' water levels. The 1990s have brought more rain, but those states complain that their lakes haven't been allowed to keep a fair share of the water because of downstream navigation needs.

pallid sturgeon

Gov. Ed Schafer of North Dakota contends that the Corps, in the upstream states' view, has always been partial to the downstream states. "In our opinion, the barge traffic has been given much more attention than the recreation and the wildlife issues," Schafer said.

The Corps' Larry Cieslick, who is heading the review of the Missouri River management plan, says the Corps is being objective. The fact is, he said, that commercial navigation accounts for only $16 million of the $1.28 billion that the Corps says is generated annually by the use of the Missouri River. Ranking first is hydropower, followed by water supplies, recreation, flood control and then navigation.

Danforth's aides say such a comparison bolsters the senator's contention that the Corps has departed from its traditional emphasis on flood control and commercial navigation.

In February, Danforth and Rep. Alan Wheat, D-Kansas City, co-wrote a letter to President Bill Clinton asking him to block any Corps plan that would hurt river navigation. The letter was signed by more than 70 other members of Congress, both Republicans and Democrats.

That appeal has delayed the Corps' timetable for reaching a decision. A final draft was to be completed this spring, but has been pushed back to early next year.

To stem some of the downstream states' concerns, the Corps distributed to state and federal officials a preliminary draft containing seven alternatives. Of the seven proposals, one calls for the status quo. Of the remaining six, Missouri officials claim four would reduce flows on the lower Missouri River and endanger navigation.

The amount of water in the six lake reservoirs has increased by almost 25

percent just since January, said Duane Sveum, who oversees the controversial issue." Chris Sifford, a spokesman for Missouri Governor Carnahan said, "Right now, we're focusing on the flood. We'll focus on this later."

Gov. Schafer of North Dakota agrees with the down stream states on one point. "In all honesty, I don't think the pallid sturgeon is the issue. It's that recreation has to be considered on the same level as barge traffic."

National Rivers Coalition Awards Eleven Conservation Seed Grants

The National Rivers Coalition, chaired by American Rivers, has announced seed grants to 11 grassroots conservation organizations across the U.S. The grants will assist river protection efforts in Alabama, Colorado, Connecticut, Florida, New Hampshire, New Jersey, New Mexico and Wyoming.

The grants, totalling $11,000, were distributed by the coalition and funded by Recreational Equipment, Inc. (REI), a nationwide retailer of outdoor gear and clothing.

"Some of these local groups exist on a shoestring budget. These grants can make a big difference," said Suzi Wilkins, director of outreach and education for American Rivers.

"We're grateful that, for six years in a row, REI has supported the coalition."

At its summer meeting, the coalition awarded seed grants to the following groups: the Cahaba River Society in Alabama, the Western Colorado Congress in Colorado, the Rivers Alliance of Connecticut, Save Our Creeks in Florida, the New Hampshire Rivers Campaign, the Merrimack Valley Paddlers in New Hampshire, the New Jersey Chapter of the Sierra Club, Amigos Bravos in New Mexico, the Clean Water Network in Washington, D.C., the Powder River Basin Council in Wyoming, and the Wyoming Outdoor Council.

The two grants received by the Wyoming Outdoor Council could make a big difference in that state, for example. The Council received a $750 grant to fight a proposed dam that would destroy critical wildlife habitat in Medicine Bow National Forest, and to protect rivers in Shoshone National Forest from impacts of oil and gas development. Segments of several rivers, including the Yellowstone, are threatened. A second $750 grant will be used to protect Clark's Fork of the Yellowstone from a proposed gold mine in the river's headwaters. The mine could potentially release acid and heavy metals into the river.

"Clark's Fork is Wyoming's only Wild and Scenic River, but already on the horizon is an inconceivable threat to this pristine area," said Stephanie Kessler of the Wyoming Outdoor Council. "This money won't change the world, but it will help make Wyoming people more aware of this threat."

The National Rivers Coalition includes American Rivers, National Audubon Society, American Canoe Association, River Federation, River Network, Sierra Club, American Whitewater Affiliation, and The Wilderness Society.

Flood/Non-Flood Images Available From EOSAT

EOSAT, distributor of data from U.S. Landsat satellites, will provide a free demonstration set of images of the St. Louis, Mo., area to the news media, government agencies, and any interested party. The imagery, nearly cloud free, clearly illustrates how devastating this flood has been. The set includes two images--a July 4, 1988 image acquired during a relatively dry period, and a July 18, 1993 image, where the water has risen 46.5 feet.

Color transparencies and color photographs of the images were available for distribution on Tuesday, July 20. EOSAT representatives also will be available to interpret the images and discuss the use of remote sensing data during and after the flood crisis.

Contact: Carla Adam, Earth Observation Satellite Company, 4300 Forbes Boulevard, Lanham, Maryland 20706-9954, (301) 552-0549.

Meetings of Interest

Conference on Western Wetlands and Riparian Areas - Public/Private Efforts in Recovery, Management, and Education

Topics include: research, delineation, and inventory efforts; outreach/education; management strategies; restoration, creation, and enhancement techniques; financial incentives; regulations and policies; and partnerships for protection.

The conference is sponsored by the Thorne Institute, USEPA Region 8, Colorado Department of Natural Resources, Montana Department of Natural Resources, North Dakota Water Users Association, Utah Department of Wildlife Resources, and Wyoming Game and Fish Department.

It will be held in Salt Lake City, UT. on September 9-11, 1993. Contact Susan Foster, Thorne Institute, 5398

Manhattan Circle, Suite 120, Boulder, CO 80303 (303) 499-3647.

A New Era for Western Public Lands

Conference will explore the changing context of public lands policy, conflicts between public values and private rights, and emerging ideas about integrated management of resources within ecosystems and watersheds.

The conference will be held on September 19-24 in Boulder, CO. Cost is $250, with discounts available for government, academics, and nonprofit groups. It is sponsored by the University of Colorado Natural Resources Law Center and the Law Review.

Contact: Katherine Taylor, Campus Box 401, Boulder, CO 80309-0401 (303) 492-1288.

Symposium on Agricultural Nonpoint Sources of Contaminants: Focus on Herbicides

This symposium is sponsored by USEPA and USGS and will be held at Lawrence, Kansas. Contact Larry Fergusun, USEPA, 726 Minnesota Avenue, Kansas City, KS 66101 (913) 551-7447.

47th Annual Conference of the Southeastern Association of Fish and Wildlife Agencies

The 47th Annual Conference of the Southeastern Association of Fish and Wildlife Agencies will be held at the Hyatt Regency in Atlanta, Georgia, October 10-13, 1993. "The Ecology of Growth and Development" is the conference theme.

Concurrent sessions will be held for Wildlife, Fisheries, Nongame, Law Enforcement, Information & Education, Legal, and License/Fiscal Administrators, as well as several other important Saturday and Sunday "pre-conference" sessions involving a variety of groups such as Wildlife and Fisheries Extension Specialists and the National Association of University Fish and Wildlife Professionals, and with such important subjects as Minorities in Natural Resources and the Restoration of Bottomland Hardwoods.

This is a must conference if you are an environmental professional in the Southeast (Texas to Florida to Maryland to Missouri, including Puerto Rico and the Virgin Islands). Meeting registration information is currently available from Bill Fletcher, Georgia. Wildlife Resources Division, 2150 Dawsonville Highway, Gainesville, GA 30501. You can also FAX him a request at FAX (706) 535-5953.

The Future of America's Rivers

American Rivers will host "The Future of Americas's Rivers" - a major rivers conference, November 4-7, in Washington, D.C.

The conference will shape future river protection policy and will celebrate the 25th Anniversary of the enactment of the National Wild and Scenic Rivers System. Several federal agencies and other conservation organizations will cosponsor the event. For conference information, contact American Rivers, Inc.; 801 Pennsylvania Ave. SE; Washington, D.C. 20003; (202) 547-6900.

55th Midwest Fish and Wildlife Conference

This year's conference will be held at the Regal Riverfront Hotel, St. Louis, MO. The theme of the conference is "New agendas in Fish and Wildlife Management: Approaching the Next Millennium". Undoubtedly, many formal and informal discussions will also occur regarding the floods of 1993.

For additional information contact: Norm Stucky, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102, (314) 751-4115.

Congressional Action Pertinent to Mississippi Basin Rivers

Administration

S. 171 On May 4, the Senate voted 79-15 to approve. This bill elevates the Environmental Protection Agency to a Cabinet-level department.

H.R. 1893 (Hansen, R-UT) would require Senate confirmation and set five-year terms and professional standards in selection of heads of Bureau of Land Management, National Park Service, Forest Service and the Fish and Wildlife Service.

Agriculture

H.R. 2264, the tax bill, caps enrollment in the Conservation Reserve Program at 36.5 million acres through 1995, while reducing the ultimate size to 38 million acres.

Biodiversity

H.R. 1845, (Studds, D-MA) creates the National Biological Survey in the Interior Department to assess, inventory and protect nation's biological resources.

S. 1008 (Baucus, D-MT) authorizes creation of the National Biological Survey in the Interior Department.

Coasts

H.R. 1899 (Laughlin, D-TX) establishes a Gulf of Mexico program at EPA aimed at controlling gulf pollution.

Endangered Species

House Merchant Marine panel held hearing May 27 to brief members on how the Endangered Species Act works.

H.R. 1992 (Smith, R-OR) amends Endangered Species Act by establishing "public interest" test before listings, and peer review for listings and critical habitat designation; the bill also bars scientists involved in listing from receiving university grants to study species and requires compensation for any loss of property value due to the act.

S. 921 (Baucus, D-MT) and **H.R. 2043** (Studds, D-MA) reauthorize and double spending for the Endangered Species Act, while emphasizing species protection on public land, multi-species listings and recovery plans, and greater emphasis on conserving candidate species; private land owners would be eligible for assistance to conserve species.

H.R. 2207 (Brewster, D-OK) amends Endangered Species Act by requiring study of impact of listings on hunting, fishing and wildlife management as well as by seeking ways to raise money from non-hunters to protect endangered species.

Fish & Wildlife

H.R. 2264, passed by the House, allows federal government to phase in $15 million-per-year charge to most federal water project water users to be used to offset project damage to fish and wildlife habitat.

H.R. 2360 (Lehman, D-CA) elevates Fish and Wildlife Service's office of law enforcement to directorate level.

H.R. 2500 (Gunderson, R-WI) provides for National Council on interjurisdictional rivers fisheries resources, and funding for MICRA. Hearing held on August 3rd by the Subcommittee on Fisheries Management of the Merchant Marine and Fisheries Committee.

Forests

H.R. 873, passed by the House, authorizes up to 80,000-acre addition to Gallatin National Forest in Montana.

Land Conservation

H.R. 2031 (Payne, D-VA) excludes from estate tax the value of land subject to a permanent conservation easement on land within 50 miles of a metropolitan area or national park.

S. 721 Senate Energy Committee held hearing May 18. The bill targets $5 billion in Land and Water Conservation Fund spending over five years for federal and state land acquisitions and recreation projects.

S. 1013 (Chafee, R-RI) excludes from estate tax the value of land subject to a permanent conservation easement on land within 50 miles of a metropolitan area or national park.

Parks

H.R. 1716 (Skaggs, D-CO) bars dams and reservoirs on North Saint Vrain Creek and authorizes Park Service to acquire land for Rocky Mountain National Park in Colorado.

Public Lands

H.R. 643, H.R. 1602 to raise grazing fees on public lands.

H.R. 1750 (Vucanovich, R-NV) makes permanent the current formula for determining public land grazing fees.

H.R. 1805 (Kildee, D-MI) hikes penalties and fines for dumping solid waste or illegally cutting, developing or transporting timber on public land.

S. 896 (Metzenbaum, D-OH) raises public land grazing fees to private land rates, gives breaks on fees for good stewardship while requiring study of public land to assess its suitability for grazing.

H.R. 2080 (Vento, D-MN) seeks to standardize procedures for withdrawing public land for military use with greater emphasis on environmental values.

H.R. 2328 (Vento, D-MN) creates Public Lands Corps for 16- to 25-year-olds to plant trees, fight fires, restore trails, control erosion and preserve historic sites on federal and Indian lands.

Recreation

H.R. 2264 The House-passed reconciliation bill, gives Agriculture, Army and Interior secretaries authority to set and charge various admission, camping, commercial tour use and rights-of-way fees at federal recreation areas.

Water and Wetlands

H.R. 1701 On April 21 a House Energy panel approved. The bill authorizes state revolving loan fund for drinking water treatment projects.

S. 171 On May 4, Senate adopted amendment to the EPA- to-Cabinet bill, that requires administration to send report to Congress within 90

days on differences between Clean Water Act section 404 wetland permitting requirements and farm bill's swampbuster requirements while considering whether to make Soil Conservation Service the sole agency making wetland determinations on farmland.

S. 815 (Lieberman, D-CT) and **H.R. 1720** (Lowey, D-NY) authorizes $28 billion in spending over seven years for grants for water pollution and estuary cleanup.

H.R. 1801 (Visclosky, D-IN) creates trust fund using Clean Water Act fines and penalties to be used for water pollution cleanup.

H.R. 1865 (Mineta, D-CA) authorizes $2.6 billion in spending over three years for new state revolving loan fund for water supply systems.

H.R. 1907 (Peterson, D-FL) provides EPA with flexibility in assessing civil penalties on small towns so that money will be spent on water pollution cleanup rather than litigation.

H.R. 1980 (Long, D-IN.) sets aside portion of Clean Water Act water pollution state revolving loan fund money for small towns.

S. 824 (Bond, R-MO) makes Soil Conservation Service the only federal agency to make wetland determinations on farmland.

H.R. 2264, the reconciliation bill that passed the House on May 27, includes provision to push back by five years the original 1995 goal of enrolling 1 million acres in the wetlands reserve program.

H.R. 2199 (Studds, D-MA) taxes industrial toxic water discharges, industrial and commercial water users, and fertilizer, pesticides and animal feed to raise $4 billion annually for reconstituted state revolving loan fund for cleaning up water pollution.

H.R. 2309 (Frank, D-MA) authorizes spending $2 billion a year through 2007 for grants and loans and stretches out loan repayments to 30 years for combined sewer overflows and other wastewater treatment construction.

Water Projects

H.R. 1858 (Inglis, R-SC) and **H.R. 2039** (Santorum, R-PA.) bar new Bureau of Reclamation water projects.

Wilderness

H.R. 198 and H.R. 631 House Natural Resources panel held hearing on these two Colorado wilderness bills.

Wildlife Refuges

S. 823 Senate Environment panel held hearing June 9 on this bill which is a comprehensive organic act for the management of National Wildlife Refuge System.

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