River Crossings

Volume 1 May/June 1992 Number 3

Interjurisdictional Rivers Bill Update

H.R. 4169, cited as the "Cooperative Interjurisdictional Rivers Fisheries Resources Act of 1992." is sponsored by Congressman Steve Gunderson (D/WI).

Since its introduction, Wayne Owens (D/UT), Joe Kolter (D/PA), William J. Jefferson (D/LA), Chester G. Atkins (D/MA), William H. Natcher (D/KY), Jerry F. Costello (D/IL), Jerry Huckaby (D/LA), Arthur Ravenel, Jr. (R/SC), W.J. (Billy) Tauzin (D/LA), Doug Bereuter (R/NE), Carroll Hubbard, Jr. (D/KY), and Jim McCrery (R/LA) have also signed on as co-sponsors. More co-sponsors are needed to advance the bill through the Merchant Marine and Fisheries Committee.

Advocates from the Sport Fishing Institute, the American Fisheries Society, Izaak Walton League, and American Rivers have been lobbying on the "Hill" in Washington for the bill. Congressman Studds (Chairman of the SubCommittee on Fisheries and Wildlife Conservation and the Environment has given no assurance that the bill will be considered this session.

Congressman Gunderson reportedly has plans to meet with Studds in the next few weeks to encourage the bill's consideration yet this year. Sources close to Congress say that in reality we are really probably laying groundwork for next year, because the bill will likely not be considered until that time.

In the meantime, advocates of the bill should continue to contact their Congressmen to get more cosponsors lined up. If the bill doesn't get considered this year it will have to be reintroduced next year, but that should be no real problem and any Congressman we get signed on this year should be willing to co-sponsor a new similar bill next year.

Potential co-sponsors can be directed to contact Brad Cameron, Washington, D.C. (202) 225-5506.

Federal Agency Briefing on MICRA

The U.S. Fish and Wildlife Service sponsored a briefing for federal agencies interested in MICRA in Washington, D.C. on May 15th. Invitations were sent to the Army, Corps of Engineers; Soil Conservation Service; EPA; Forest Service; National Marine Fisheries Service (NMFS); Bureau of Land Management; Bureau of Indian Affairs; Bureau of Reclamation, Department of Energy; and National Park Service. Of those, five attended the briefing (Army, NMFS, Indian Affairs, Reclamation, and Energy).

Coordinator Rasmussen presented the briefing and supplied participants with briefing packets. The briefing itself went well, but we would liked to have seen all invited agencies participate. Those who didn't attend were sent copies of all briefing materials.

Up to this point five entity members have joined MICRA. Those include three federal agencies and two Indian tribes: U.S. Fish & Wildlife Service, Tennessee Valley Authority, Bureau of Reclamation, Chippewa Cree Tribe, and The Chickasaw Nation.

Our efforts will continue to recruit additional federal, Indian, and private entity members.

Election of MICRA Officers

The Steering Committee held their Annual Meeting in Wilmington, NC on May 19th. A total of 12 States and 2 federal agencies were represented.

According to procedures agreed to at the first MICRA Annual Meeting, held in Snowbird, UT in May 1991, Wes Sheet's two-year term as Chairman will expire on June 30, 1993. A Vice Chairman elected every two years (the first to be elected now) will rise to the Chairmanship after serving in a training role for a year. Policy Sub-Committee members for the Entities, Missouri River, and Lower Mississippi River expire on June 30, 1992 and are up for re-election. A Treasurer position was created at the Wilmington meeting to handle MICRA funding.

Since all MICRA members are unable to attend all of our meetings, election of officers will be completed through a mail ballot. A Ballot will be circulated to all Steering Committee members in early June. Current Policy Sub-Committee members will be listed as potential candidates for re-election, Jim Fry (MO) will be listed as a candidate for Vice Chairman, and Marion Conover (IA) will be listed as a candidate for Treasurer. Bob Hanten (SD) will also be listed as another candidate for Missouri Basin representative.

MICRA Priorities

A MICRA Task Prioritization exercise was completed over the winter months by the Steering Committee. Results of that effort are in draft form and will be printed in final form shortly. All Goals, Objectives and Tasks were prioritized separately.

The following priority has been given to MICRA Goals:

(1) Develop a formal framework and secure funding for basin-wide networking and coordinating mechanisms that complement existing and emerging administrative entities.

(2) Periodically identify and prioritize issues of concern in the Mississippi River Basin for coordinated research that supports cooperative resource management.

(3) Improve communication and coordination among entities responsible for fisheries resource management in the Mississippi River Basin.

(4) Develop an information management program based on standardized methods for collecting and reporting fishery resource data, basin-wide.

(5) Identify and coordinate fishery management programs to address species and habitat concerns from an ecosystem perspective.

(6) Develop public information and education programs to disseminate information that supports fishery resource management in the Mississippi River Basin.

(7) Determine and document the socio-economic value of fishery resources and related recreation.

(8) Preserve, protect and restore fishery habitats basin-wide.

(9) Develop compatible regulations and policies for fishery management to achieve interstate consensus on allocation of fishery resources.

River Crossings

Published by

Mississippi Interstate Cooperative Resource Agreement (MICRA)
608 East Cherry
Columbia, MO 65201

MICRA Chairman
Wes Sheets, Nebraska Game and Parks Commission, Lincoln

MICRA Policy Committee
Wes Sheets, Member at Large
Wayne Pollock, Tennessee Wildlife Resources Agency, Nashville, Lower Mississippi River Member
Jim Fry, Missouri Department of Conservation, Jefferson City, Upper Mississippi River Member
Larry Peterman, Montana Department of Fish, Wildlife and Parks, Helena, Missouri River Member
Frank Jernejcic, West Virginia Department of Natural Resources, Fairmont, Ohio River Member
Gary Edwards, U.S. Fish & Wildlife Service, Washington, D.C., Entity Member

MICRA Coordinator/Executive Secretary and Newsletter Editor
Jerry L. Rasmussen, U.S. Fish & Wildlife Service, Columbia, Missouri

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.

(10) Develop protocols, policies and regulations for disease control, introduction of exotics, maintenance of genetic integrity, and maintenance and enhancement of indigenous species.

The MICRA Task Prioritization document will be used as a "guide", not a "bible", to implement various MICRA efforts.

MICRA Paddlefish/Sturgeon Committee Being Formed

Concern for the paddlefish was the major resource issue which served as a catalyst to bring the Mississippi River Basin states together to form MICRA in the late 1980's.

In February of this year, the U.S. Fish and Wildlife Service sponsored a paddlefish/sturgeon workshop in Atlanta to exchange information both within the agency and between several of the States regarding paddlefish and sturgeon activities.

That workshop made it painfully obvious that a much greater emphasis needs to be placed on communication, coordination, and exchange of information than in the past to coordinate, on a national level, efforts being made and resource dollars being spent to manage, protect and restore these species.

Recognizing MICRA's long standing interest in these species and its obvious strategic capability, recommendations were made for MICRA to serve as the mid-continent coordination point for all paddlefish activities, and for sturgeon activities effecting those species which occur within the basin (i.e. lake sturgeon, shovelnose sturgeon, and pallid sturgeon). This recommendation is currently being made more formally in an internal "guidelines" document being developed for the Fish and Wildlife Service by an interagency Committee formed as a result of the paddlefish/sturgeon workshop.

That Committee has identified the following problems needing to be addressed:

(1) There is a need to develop a National Strategy for the management of paddlefish and sturgeon resources.

(2) There is a general lack of understanding and awareness of the value of paddlefish and sturgeon species.

(3) Life history and habitat requirements for paddlefish and sturgeon are poorly understood.

(4) Culture and stocking of paddlefish and sturgeon may be needed to preserve, maintain, or enhance some stocks, but federal, state and private efforts are largely uncoordinated.

(5) Illegal take, transport, commerce, and habitat destruction are impacting some populations of paddlefish and sturgeon species.

The MICRA Steering Committee has responded to their own stated interest, as well as to the guidelines being developed by the Fish and Wildlife Service proposal, by taking immediate action to form a MICRA Paddlefish/Sturgeon Technical Committee.

Candidates for that Committee are currently being identified by Steering Committee members. We anticipate that the MICRA Paddlefish/Sturgeon Committee will be formed by mid to late summer, and begin operation in the fall. The Committee's first order of business will be to develop its own mission and operational procedures. The MICRA Paddlefish/Sturgeon Committee will not answer to any one State or Agency hierarchy, but to the MICRA Steering Committee.

Missouri Biologists Successfully Spawn Pallid Sturgeon

Jerry Hamilton and Kim Graham, pioneers in the spawning of both paddlefish and sturgeon, successfully spawned two female pallid sturgeon and one female pallid/shovelnose hybrid at Missouri's Blind Pony hatchery in mid April. Some 91,000 pallid and 27,000 hybrid sturgeon eggs were fertilized.

Hamilton and Graham anticipated that hatching success should be about 90%, based on the visual condition of the eggs at spawning. However, by the end of April hatching success had fallen to about 36%.

Hamilton suspects that the eggs were contaminated with some form of environmental pollutant in the parents, because the eggs were hatching in much the same way as he had seen contaminated eggs hatch before.

A 30 gm. sample of the eggs and hatching fry has been shipped to the Fish and Wildlife Service's Contaminant Research Center at Columbia, MO for analysis for organochlorines and heavy metals. Results of the analysis will be compared to previously analyzed fry and eggs in the Service facilities database in about 90 days.

The remainder of the hatching fry will be used for research and educational purposes. Feeding trials are being conducted at the Blind Pony facility, at the Valley City National Fish Hatchery, at the Gavins Point National Fish Hatchery, and at the Neosho National Fish Hatchery.

Some may be sent to the Aksarben Aquarium in Gretna, NE, and the remainder will be used for genetics study, development of technical keys, or destroyed. Non will be released into the wild because of their unknown

genetic purity, and consequent potential impact on any existing wild populations.

For further information contact Mark Dryer, Chairman, Pallid Sturgeon Recovery Team, U.S. Fish & Wildlife Service, Bismarck, ND, (701) 250-4491.

Contaminants in Sturgeon

Chemical contamination of pallid sturgeon and their habitat is a major concern of the Pallid Sturgeon Recovery Team.

High concentrations of polychlorinated biphenyls (PCBs) and organochlorine pesticides (chlordane, dieldrin, and DDT) have been documented in North Dakota by Dick Ruelle and Kent Keenlyne (U.S. Fish and Wildlife Service), indicating contaminants as a potential problem affecting recovery of the species.

Reports available on contaminants in fish of the Missouri River and its tributaries are available from the Service's Region 6 Environmental Contaminants Program Coordinator Tom Jackson (303) 236-8180, or from Contaminants Specialists in South Dakota [Dick Ruelle (605) 224-8693], Kansas [George Allen (913) 539-3474], or North Dakota [Dan Welsh (701) 250-4492].

Source: Pallid Sturgeon Recovery Update (April, 1992)

Upper Missouri River Blue Sucker Study

The Fish and Wildlife Service Enhancement Office in Bismarck, ND is gathering data on Blue Sucker populations in Montana, North Dakota, South Dakota, Nebraska, and Kansas. Data gathered will be used to prepare a preliminary report on the status of the species in the Upper Missouri River and its major tributaries.

The Bismarck Office would appreciate

receiving any available information on collection location, dates, and abundance of blue suckers in MT, ND, SD, NE, and KS. Contact Selena Werdon (701) 250-4414.

National Fish Refuge System

Biologists in various parts of the Basin are beginning to talk more and more about the possibility of creating a National Fish Refuge System.

Such a System could come as spinoff legislation from the National Recreational Fish Policy, the President's Policy of "No Net Loss of Wetlands", or other such administrative measures.

The concept is not without precedent, in that the legislative history of the Upper Mississippi River National Wildlife and Fish Refuge, as well as subsequent appropriations, indicate that a major reason for purchase of that refuge was for fish propagation [Fairchild, M. (1982) The legal and Administrative History of the Upper Mississippi River Wild Life and Fish Refuge. Looseleaf, Unpubl. Available through the library of the Upper Mississippi River Conservation Committee, 1830 Second Avenue, Rock Island, IL. 69 pp.].

The Izaak Walton League was largely responsible for creating the Upper Miss Refuge (1924), and their primary interest was in protecting the spawning habitats of smallmouth bass and northern pike. At the time, there was extensive fish rescue operations going on to prevent fish kills in isolated backwaters and chutes.

However, once water levels were stabilized after impoundment for commercial navigation in the 1930's, much of the interest in managing the refuge for fish subsided. Federal agencies were reorganized in 1940, the U.S. Fish and Wildlife Service was formed from the Bureaus of Fisheries (Commerce) and Biological Survey (Agriculture), the country entered World War II, and the rest is history.

A National Fish Refuge System may be the only way to adequately protect and restore migratory and interjurisdictional fish species such as coastal striped bass, paddlefish, and sturgeons. The need is especially apparent on large channelized rivers such as the lower Missouri and lower Mississippi.

Biologists from the Missouri

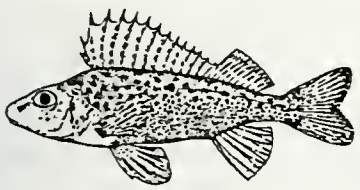
Department of Conservation and U.S. Fish and Wildlife Service's Columbia Missouri Fisheries Resources Office plan to meet in early June to discuss this and other angles which might be available to protect large riverine fish species on the Missouri River.

U.S. - Canadian Task Force Seeks More Than $6 million to Halt Ruffe Invasion

Just six years after hitchhiking across the Atlantic, the European river ruffe has become the most abundant fish in the Great Lakes' Duluth-Superior harbor. The ruffe appears to be out competing native fish for food and habitat.

An international Task Force of

fisheries experts has called for immediate action to avoid devastating consequences. The ruffe is a spiny fish with no food value. Both yellow perch and young walleye have trouble competing with it. The ruffe grows fast, and is often sexually mature at one year. The fish may be sexually active for 6-7 years.



Researchers have concluded that the ruffe poses a major threat to North American waters. If appropriate and massive action is taken immediately, the ruffe may be contained at manageable levels in the Great Lakes.

Dr. Fred Meyer, Chairman of the Task Force cautions, "The window of opportunity is only two years. If we don't control the ruffe in 1992-1993, exploded growth will make it impossible to manage."

Statistics indicate that this is not an exaggeration. The ruffe were first detected in 1986. The 1991 population is estimated at 1.8 million adults and over 150,000 young-of-the-year. The dramatic growth of the ruffe population was contrasted by a dramatic decline, of 50 percent in three years, of the yellow perch and other native species, including young-of-the-year walleye. This closely parallels experiences in Europe (80 % decline of European perch in Loch Lommond) and Russia (50 % decline of whitefish)

Current management plans include the following objectives: contain the ruffe to present sites; increase biological understanding of the ruffe; reduce populations of ruffe at present sites; and conduct research on control methods.

Minnesota and Wisconsin fishery managers have tried to control the ruffe by heavily stocking the harbor with walleye and northern pike and by limiting the catch of those two predators. That effort is continuing, although studies show that, so far, walleye and pike have preferred to continue dining on other forage. However, bullheads are eating some of the ruffe.

Another priority is to develop gear and procedures for the physical removal of 80-90 percent of the ruffe population in Duluth Harbor. Time and money must be appropriated for field trials on chemical control of the ruffe. Sterilants will be tested on substitute species in preparation for a sterile-male release program.

Ruffe Task Force members have a very real concern that the ruffe could expand to the inland waters of the United States and Canada. If the ruffe can migrate to key areas, expansion can occur easily. Once in major river systems, the ruffe would have access to the entire continent.

The ruffe has already spread into some adjacent Lake Superior inlets in Minnesota and Wisconsin. And it was discovered last fall in the harbor at Thunder Bay, Ontario. That's 180 miles northeast of Duluth. It seems to have gotten to Thunder Bay in a ship's ballast water -- the same way it originally got to Duluth.

On the positive side, the U.S. and Canada are imposing new restrictions that will require ships entering the St. Lawrence Seaway to exchange their fresh water ballast for salt water before entering interior waterways. The ruffe presumably cannot survive in salt water.

"Why didn't this happen sooner? If it had maybe we wouldn't have either the ruffe or the zebra mussel!"

Restrictions are also needed, however, for ships traveling only within the Great Lakes to prevent transport of ruffe to uninfested lake ports.

Source: EcoNet (For the Fish and Wildlife Partners of the Great Lakes Initiative) Vol. 1, No. 1, and Minneapolis Star Tribune (3-22-92)

Tropical Fish in Montana?

That's right! The sailfin molly, the shortfin molly, the variable platyfish, and the green swordtail all occur in some of Montana's warm springs and ponds. Temperatures in these habitats range from 68 to 95 degrees F.

The natural range of these species is in the Atlantic drainage from northeastern Mexico south. These fish are certainly not fitted for life in Montana waters, except in the rare warm springs and ponds. All are common aquarium fish which likely found their way into Montana's waters through illegal release.

Source: Fish Line - Reading the Waters, Vol. 2, No.3, Montana Dept. of Fish, Wildlife & Parks

New Invertebrate Species Identified in Stockton Lake, MO

Norman Youngsteadt; Springfield City Utilities, Springfield, MO; isolated a new species of cladoceran (*Daphnia lumholzi*) in Stockton Lake, an impoundment of the Sac River (tributary to the Osage) in September 1991. The cladoceran, identified by Dr. John Havel (Southern Missouri State University in Springfield), is native to reservoirs in Australia, southern Asia, and east Africa.

Further study is needed to determine the present distribution of this species, which appears to be rapidly extending its range. The mechanism whereby this small crustacean dispersed to North America is unclear. Its eggs can resist drying, so they can be moved by wind, migrating birds, or the inadvertent movement of dried mud by humans.

The impact of this exotic species on aquatic communities is unknown, but its large spines make it difficult for fish to eat, so it may become troublesome for reservoir fisheries if it displaces native species of *Daphnia*.

Records on sightings and isolations for

identification should be sent to Dr. John Havel, Department of Biology, SMSU, 901 South National Avenue, Springfield, MO 65804.

Source: Watershed News, Watershed Committee of the Ozarks, Springfield, MO, Spring 1992.

Columbia River Tops List of Waters At Risk

"Rivers today are in worse shape than they've ever been" according to Kevin Coyle, President of American Rivers, a Washington based group which issues an annual top-10 ranking of North America's "Most Endangered Rivers".

American Rivers

Columbia and Snake Rivers (ID, WA, and OR) - At least 214 native fish species are imperiled along the heavily dammed river, 200 salmon runs are threatened. Adequate fish ladders and habitat improvements are needed.

Alsek and Tatshenshini Rivers (AK and British Columbia) - Bears, salmon, eagles and other wildlife dependent on the icy rivers could be poisoned if the proposed Windy Craggy acid-leach copper mine proceeds 15 miles from the U.S. border.

Great Whale River (Quebec) - Damming and diversion, as part of Hydro-Quebec's 20,000-megawatt hydroelectric project, threatens waterfowl nesting grounds, beluga whale spawning areas, caribou calving grounds and a home of a rare freshwater seal, as well as the lives of some 10,000 Native Americans in James Bay.

The Everglades (FL) - Shallow "River of Grass" is on the verge of collapse caused by agricultural pollution, encroaching development and diversions of water sources. Already, 90% of wading bird population has vanished.

American River (CA) - Proposed 425-foot high Auburn Dam could devastate 34 miles of river and canyons, thwarting popular activities such as whitewater boating, hiking and horseback riding.

Colorado River (AZ) - Glen Canyon Dam 16, miles upstream from Grand Canyon National Park, fluctuates water levels, causing beach erosion and hindering river recreation and fishing. Last year's No. 1 imperiled river, it should be helped by new interim flow protection measures mandated for the Grand Canyon section.

Mississippi River (MN, WI, IA, IL, MO, KY, TN, AR, LA, MS) - Oil spills from barges may be the most visible problem, but even more pervasive is runoff of soil, agricultural chemicals, and industrial waste.

Penobscot River (ME) - Proposed new hydroelectric dam could threaten Atlantic salmon restoration efforts.

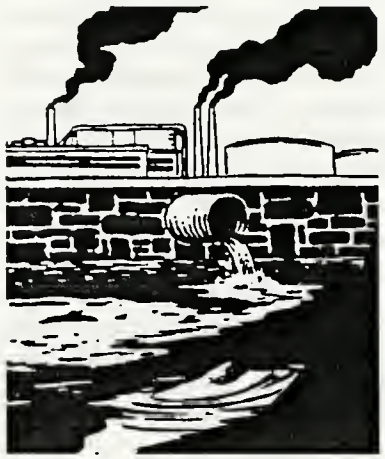
Beaverkill & Willowemoc River System (NY) - Catskill Mountains premier trout streams face growing development pressures that are reducing flows and clearcutting is degrading riverbanks.

Blackfoot River (MT) - Logging, grazing, agricultural runoff, diversions, mining wastes and over-fishing are slowly killing this renowned cutthroat trout stream in the scenic Blackfoot Valley.

Last year American Rivers only listed the Upper Mississippi (from Minneapolis to St. Louis) as endangered because of the hazards to rare animals and the 500-mile National Wildlife and Fish Refuge along the river.

This year the group decided to include both the upper and lower Mississippi because, according to Suzi Wilkins, "What happens in the north eventually will have an impact when the river reaches New Orleans and the Gulf."

American Rivers said the 150 major chemical manufacturers along the lower Mississippi discharged 296 million lbs. of toxic chemicals into the river either directly or through sewage treatment plants.



"An additional 591 industries discharge contaminated wastewater into the River --giving the Lower Mississippi the sobering nickname, 'Cancer Alley'", the groups report said.

Source: USA Today (4-9-92) and The Associated Press, St. Louis (4-10-92)

Retracing the Steps of Lewis and Clark

River conservationists hope to focus Congress's attention on the nation's degraded waterways this summer when they set out from Missouri to retrace Lewis and Clark's 4,000 mile trek across the Great Northwest.

Tom Warren, an Oklahoma chiropractor, and John Hilton, a Missouri photographer entered the Missouri River at St. Louis on June 1 and plan to arrive at the mouth of the Columbia River by mid July near Astoria, Oregon. "Lewis and Clark went out to find what was there. We're going to see what's left," Hilton said.

This is believed to be the first attempt to duplicate Lewis and Clark's expedition undertaken in 1804 to explore the Louisiana Purchase and

search for a water passage to the Orient. American Rivers organized the trip to dramatize the pollution, diversions and ecological damage the route has suffered over the past two centuries.

Warren and Hilton will travel upstream from St. Louis via a 21-foot jet boat, trailer around the mainstem reservoirs, bicycle about 350 miles over the Rocky Mountains, and canoe 75 to 300 miles into Idaho and on to the Pacific Coast, depending on water levels.

Lewis and Clark made the trip with 30-foot long keel boats and two canoes. A crew of 45 men and 10,000 lbs. of equipment assisted as they sailed, paddled, poled, and portaged the boats across the wilderness.

In addition to hydropower projects that have disrupted both upstream and downstream movements of salmon in the Columbia River; the modern-day explorers will encounter industrial waste; runoff from farm chemicals; and sedimentation and erosion accelerated by logging, mining, and other commercial development.

"We want people to draw a correlation between what was there 188 years ago and what is there today," said Warren. "We're going to stand on the site where they were and read from their diary, like when they said they looked this direction and saw 10,000 buffalo. We will do a sort of play-by-play -- a before and after," he said.

American Rivers has established a 900 number for anyone who wishes to obtain daily updates on the journey. Callers who dial the number, (900) I-GO-WEST, will be charged $1.95 per minute. The 3 to 5 minute tape recorded messages will compare what Lewis and Clark witnessed, according to diaries, with what Warren and Hilton see. Proceeds will be used primarily to defray the costs of the trip and the phone line, with 10 % set aside for American Rivers.

Source: Associated Press, Washington, D.C. (6-1-92)

Missouri River GAO Study Stands Up To Critics

An internal review of the GAO study which found the Corps of Engineers had shortchanged the recreation industry in Montana, North Dakota, and South Dakota revealed no problems. The audit found that the study is sound, the research is good and the conclusions stand.

The original GAO Study Results in Brief read as follows:

> "The Corps followed a drought contingency plan in 1988, 1989, and 1990 in releasing water from the reservoir system. Acting consistently with the plan, the Corps reduced winter release rates, shortened navigation seasons on the Missouri River, and reduced water levels in the navigation channel. As a result, 17 percent less water was released during the 3-year period than would have been released under normal operating conditions. The drought and the Corps' response to it adversely impacted all of the purposes served by the reservoirs except flood control.
>
> 'The Corps' drought contingency plan, however, is based on assumptions about the amount of water needed for navigation and irrigation made in 1944 that are no longer valid, and the plan does not reflect the current economic conditions in the Missouri River basin. The Corps' ongoing comprehensive study of its operation of the reservoir system is expected to address these issues. Notwithstanding the results of its study, the Corps maintains on the basis of its interpretation of the authorizing legislation that unless it obtains congressional approval to change existing operating priorities, it must continue to give recreation a lower operating priority than other authorized purposes even is this lower priority results in decreased system benefits. GAO sees no appropriate basis for the Corps' view. A lawsuit filed in federal court by three upper-basin states questions the legality of the Corps' position on recreation" (emphasis added).

Senator Charles Grassley (R/IA) and Christopher Bond (R/MO), who requested the independent re-examination of the report, are calling it a "whitewash." Congressmen from Montana, South Dakota, and North Dakota, on the other hand, love it! The northern states' lawsuit is due to come to trial in September.

The Corps is caught in the middle, looking for some common ground. A logical compromise may be a split navigation season which some biologists have offered up as a way of meeting everyone's needs.

Under the split season scenario, high flows would be maintained in the river during the Spring months to allow barges to deliver farm fertilizers and other chemicals to upstream ports. Water levels would be dropped during the summer months, and then raised again during the fall to allow barges to deliver the season's harvests to downstream markets.

This would seem to meet critical demands for navigation, water conservation, and recreation. It would have the added ecological benefit of, at least partially, duplicating the rivers natural hydrograph (i.e. spring and fall floods, with low winter and summer flows). It would also make downstream river reaches more

attractive for summer recreation on the exposed islands and beaches.

It seems that, instead of lawsuits, all parties would be well advised to work toward compromise and common ground. Perhaps the solution lies in some form of resource master plan as was developed for the Upper Mississippi to solve the that river's dredged spoil placement problem and navigation conflicts.

Under that scenario everyone lays their cards on the table, begins open dialogue, and works toward a win-win solution.

Kissimmee River Environmental Restoration "First-of-its-Kind-Undertaking"

"It has been stated that environmental problems are emotional; environmental issues, political; and environmental solutions, technical" -- M.K. Loftin, Assistant Director, Water Resources Division and Project Manager, Kissimmee River Restoration, South Florida Water Management District.

Thirty years ago, the Army Corps of Engineers (COE), in partnership with the State of Florida, began construction of a massive flood control project on the Kissimmee River in south-central Florida. The flood control solution was channelization of the river, converting its 103-plus miles of shallow, meandering river channel and floodplain to a 56 mile excavated canal, known as C-38. The canal, completed in 1971, runs from Lake Kissimmee to Lake Okeechobee.

The canal is actually composed of six water control structures that create six navigation pools which drop the river a total of 36 ft. over its length. Each structure is equipped with a 30 ft. by 90 ft. lock to raise and lower boats with drafts of up to 5.5 ft.

The project has been credited with controlling flooding, but since its completion waterfowl populations have plunged 90% and problems with the downstream Everglades have continued to mount.

Now, twenty years after construction was completed, the COE, in response to a 1990-enacted Congressional directive, has completed a feasibility report and environmental impact statement that calls for the environmental restoration of the Kissimmee River and the return of the river's original meandering state at an estimated cost of some $368 million.

The project will restore 26,500 acres of wetlands, 40 square miles of ecosystem, and 43 miles of meandering river. Fifteen years will be necessary to complete the reconstruction project, at an average annual cost on the order of $45 million. The project will be funded with federal (50%)/state (50%) cost-sharing, with Florida providing all land and easement acquisitions prior to the start of construction.

Fee acquisition of the floodplain up to the five-year flood line will involve approximately 58,487 acres, and an easement acquisition of lands between the five-year and the 100-year flood lines will involve an additional 9,143 acres. Florida has its land acquisition program well underway under the state's Save Our Rivers legislation, enacted in 1981.

The Florida legislature and three successive governors have endorsed the restoration idea. The Bush Administration has also thrown its support behind the project.

This potential success story in environmental restoration didn't happen by accident!. Several important and significant elements had to be present:

- **Patience over a period in excess of 20 yrs.**

- **A relentless search for a mutually acceptable identification of the public interest by all levels of concerned government.**

- **A truly interdisciplinary effort, wherein teams including biologists, hydraulic engineers and public administrators searched for restoration answers that all disciplines could live with, while maintaining the essential flood control features in urban and other economically essential areas; and**

- **Innovative scientific discovery and verification in the restoration of an almost totally destroyed ecosystem.**

In the end, each of these elements of the Kissimmee River restoration experience are part of a whole -- blending, supporting and contributing to the bigger story of the political science of accomplishing such a fundamental, vast and vital environmental restoration.

The Kissimmee River experience is not unlike that experienced on the Upper Mississippi River in achieving funding for the $200 million Environmental Management Program. This was another case where years of persistence, patience, creativity, and innovative science paid off.

These success stories should provide a spark to creative minds throughout the Mississippi River Basin - - "We can make a difference if we have the vision to dream the impossible, the creativity to suggest alternative management, and the guts to stick with our dreams when the heat is turned up".

Perhaps there is hope for rivers like the lower Missouri, so abused by man's futile attempts to control it over the last two hundred years!

Sources: EPA News-Notes, January - February 1992, #18, and Land Letter - A Newsletter for Natural Resource Professionals Vol. 11, No. 10 (April 1, 1992)

Mississippi River Corridor Study Underway

The Mississippi River National Heritage Corridor Study Commission Act of 1990 established a three-year Commission to study the resources of the Mississippi River Valley, and to make recommendations to Congress on the boundaries of a proposed Mississippi River National Heritage Corridor, stretching from its headwaters to the Gulf of Mexico.

To date the Commission, composed of governor appointed members from all ten Mississippi River states and representatives of five federal agencies, has approved a scope of study, reviewed a preliminary inventory of Mississippi River resources, and is gathering information critical to its recommendations for the future of the Mississippi River Valley as part of their Mississippi River Corridor Study.

The purpose of the Study is to evaluate the national significance of the River's natural, historic, cultural, recreational, economic, and landscape resources and to assess the feasibility of designating the River as a national heritage corridor. As a part of the study, the commission will assess state and local support for designation. In cooperation with state and local partners and the public, the Commission will develop a range of management options for the protection of the area's resources.

Congress will review the study and make a decision regarding designation. If Congress establishes a Mississippi River National Heritage Corridor, planning for the protection, enhancement, and management of the Corridor will proceed.

The Study will take 3 years to complete and will be done in 4 phases:

- Project Initiation - This phase, currently underway, consists of initial information gathering, initial public involvement, and other start-up activities.

- Feasibility Study - This phase consists of an inventory and analysis of natural and cultural resources, a study of the feasibility of corridor designation, development of alternative management strategies for resource protection, and a progress report to Congress.

- Draft Development - This phase consists of production of a draft study document and extensive public comment, including 10 public meetings.

- Final Study Document - This document will be finalized, taking into account public comments received during the process. The document will be sent to congress for its decision on designation as a national heritage corridor.

At present, the project has received only partial funding from Congress, and the Commission is seeking additional sources of support, including private funding options. A current request to Congress has been submitted for $500,000 in fiscal year 1993.

Designation of a Mississippi River National Heritage Corridor would elevate the River's importance on the National level, and hopefully, assist in obtaining funding to preserve, protect, and manage the Rivers natural resources, including its fishery.

Mississippi River Basin Alliance

A group of 45 persons representing various public, environmental, and social justice organizations from throughout the Mississippi River Basin came together in St. Louis in late February to explore ways that they as citizen's groups could work together to restore and maintain the environmental quality and protect the cultural, historic, and recreational value of the Mississippi River Basin.

The conference was the first time these groups had come together to work on Mississippi River issues. It was an opportunity to establish common issues of interest, identify possible strategies and goals, explore resources and means of cooperating both formally and informally, allow environmental and community leaders to get to know each other, and establish positive working relationships.

There was a consensus among the groups to support reauthorization of the Clean Water Act in 1992 with the Mississippi River Basin granted special designation as a "national treasure." The groups felt such a designation would help focus legislative awareness and, hopefully, funds for protection of its natural and cultural resources.

Specific issues that were identified as being of utmost concern to the participants were improvement and maintenance of healthful water quality, sustainability of agriculture, appropriate economic and cultural practices and traditions, habitat loss, improvement in our ability to acquire and disseminate relevant information, health concerns, and representation and community involvement by people affected by the environmental quality of the Mississippi River.

The group decided to name themselves **"The Mississippi River Basin Alliance"**. The Alliance is visualized as a loose network of groups who agree to work together on some or all of the issues of concern mentioned above.

Additional information on the Alliance can be obtained from Cliff Ochs (314) 776-7981.

Source: St. Louis Audubon Society Vol. 59, No. 2, April 1992.

Lower Mississippi River Coordination Group Forming

Representatives of State fish, game and environmental quality agencies from Arkansas, Louisiana, Mississippi, Missouri, Tennessee, and Texas met on April 21-22 with representatives from the National Marine Fisheries Service,

U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Soil Conservation Service, and the Gulf States Marine Fisheries Commission in Vicksburg, MS to discuss the formation of an interagency coordination group for the lower Mississippi River.

The group decided to form a group similar to the Upper Mississippi River Conservation Committee (UMRCC,

Rock Island, IL), or the Missouri River Natural Resources Committee (MRNRC Pierre, SD), and that a

Coordinator should be provided by the U.S. Fish and Wildlife Service similar to that currently provided for the UMRCC, MRNRC and MICRA.

The UMRCC, MRNRC, and Lower Mississippi River Group are envisioned as sub-basin coordination groups that MICRA will use to achieve basin-wide coordination. A similar group exists on the Ohio River, but does not currently have a Fish and Wildlife Service Coordinator.

Depending on MICRA's success and existing needs, similar groups may eventually be organized for other large sub-basin units such as the Arkansas-Red rivers or the Tennessee River System. MICRA is envisioned as an umbrella coordination group for all of these other sub-basin units, at least for fisheries issues.

Midwest Area Rivers Coalition Formed

River and agricultural interests on the Upper Mississippi River have formed a new coalition to lobby for navigation

improvements on the Mississippi and Illinois River. The Midwest Area River Coalition (MARC 2000) was formed to lobby Congress to secure funding for navigation improvements on the two rivers. Navigation improvements on the Ohio River have benefitted for years by the action of DINAMO, a similar group that intensely lobbies for navigation system improvements on the Ohio River System.

MARC 2000 was established last fall in St. Louis and has just named its first Executive Director -- Mr. Christopher Brescia. Mr. Brescia was a Congressional staffer, lobbyist, and consultant in Washington, D.C. MARC 2000 will initially focus on Mississippi River Locks 19 through 25.

Source: The UMRCC Newsletter, Rock Island, IL, March/April 1992

EPA and USDA Sign Agreement to Attack Farm Pollution

The U.S. Environmental Protection Agency and the U.S. Department of Agriculture have signed a memorandum of agreement that aims to cut environmental harm to land and water stemming from pesticides, fertilizer and animal waste.

The agreement is said to be significant in that it brings together two agencies that haven't seen eye-to-eye in the past, in light of EPA's view that farming is the source of most of the pollution in the nation's lakes and rivers.

The agreement calls for a senior-level interagency task force to develop a detailed agricultural pollution prevention strategy by Oct. 1, with an emphasis on voluntary action and partnerships between the public and private sector. The agencies are in the midst of selecting task force members.

Four strategies were outlined in draft form that will be fleshed out in the next four months. The October draft is not expected to be significantly different but the time delay will give groups in the private sector a chance to comment on the proposal before full implementation.

The basic goals of the strategy are:

- implementation of a nationwide program to minimize agriculturally-related pollution
- organization of a comprehensive marketing strategy designed to promote voluntary pollution prevention
- evolution of coordinated research, technology development, and technology transfer systems that will preserve the environment
- an overall strengthening of the relationship between the two federal agencies in hopes of moving forward in the area of agricultural pollution prevention

Source: Land Letter, Vol. 11, No. 16 (June 1, 1992)

Water Management Changing in the West

According to an article in the Wyoming Tribune-Eagle, Cheyenne (3-21-92) by Staff Writer Tom Zoellner the West is rapidly entering a new phase in its water management history - "a change that could be as significant as the closing the frontier a century ago."

The era of big federal dams is being replaced by environmentalism. The shift is one from development and allocation to re-allocation and conservation according to Mark Squillace, professor of water law at the University of Wyoming. The Clean Water Act of 1987 placed severe environmental restrictions on new water projects and few major dams have been built since.

The most famous case is when Denver lost its bid to build the Two Forks Dam on the South Platte because it would effect the natural habitat of the whooping cranes in the Nebraska Sand Hills.

The $70 million Sandstone Dam in Wyoming (on the drawing board for 4 years) recently appears dead after Wyoming was unable to account to the Corps of Engineers and EPA as to what all the stored water would be used for. According to Wyoming State Engineer Gordon Fassett, "This is part of the changing collective attitude toward the West. The water policy has gradually shifted from a goal of agriculture and population growth to an ongoing vision of environmental stewardship and planned management."

Mark Anderson, spokesman for the Bureau of Reclamation, said that there is more and more talk of a "changing mission" from building dams to maintaining them. "The philosophy now is that the Bureau should look at the projects in place and say: 'Okay, given that there is a finite supply of water, what can be done to spread that water around better?'"

Steven Gloss, Director of the Wyoming Water Research Center at the University of Wyoming, suggested that the most probable feature of the future of Western water will be a large-scale interstate "water market", where units of the precious stuff of life will be bought and sold like a commodity.

Gloss said water marketing has not yet caught on in Wyoming because the State's low population doesn't generate the demand necessary for a free market to function effectively.

In California, however, the State is coming close to setting up the nation's largest water market for farmers, who could sell their spare water to growing coastal cities.

In Colorado, a thriving water market has allowed cities like Denver to buy needed water from "all four corners of the State", according to Wyoming Assistant Attorney General Dennis Cook. Publications like *Water Strategist* and *Water Exchange Information Service* keep hydrobrokers advised of the most recent rates.

California has even suggested an "interstate water bank" to ease rising demand in Los Angeles and San Diego. This would allow downstream states to purchase rights to unused upstream water.

Source: Wyoming Tribune Eagle (3-21-92)

States Could Get Veto Power Over Dams

The House version (May 27) of the Energy Policy Bill gives the states the power to block hydropower projects that would damage wild and scenic rivers, parks and other protected areas. The provisions were added to the bill after Rep. John Dingell (D/MI), Chairman of the House Energy and Commerce Committee, lost 221 to 195 in his bid to have weaker language added.

Three other hydropower provisions that originally were approved by the Interior Committee also were added to the bill. The bill authorizes the Bureau of Land Management and Forest Service to issue rights-of-way for federally licensed hydropower or similar projects that cross public lands that they manage. As part of the license, the agencies could set conditions that the licensees would have to meet. The provision reverses a 9th U.S. Circuit Court of Appeals decision and proposal in the Bush Administration's national energy strategy that gave FERC sole authority over such right-of-way decisions.

The amendment also prohibits new dams if they are in national parks or would flood them. Existing dams could be relicensed only with approval of the interior secretary.

A fourth provision addresses Rep. Gejdenson's (D/CT) concern over FERC's recent licensing of a one megawatt dam at Yantic Falls, a park in Norwich, CT. The provision prevents FERC from granting private parties the right to condemn land in state parks. The House rejected proposals by Rep. Wayne Owens (D/UT) that would have created an environmental review process for granting rights-of-way across federal lands for oil and gas pipelines and that would have restricted the use of public land for storage of radioactive wastes or siting of electric generating facilities.

Don Clarke, a lawyer who represents

hydropower interests, said the provisions represent "poison bullets for new hydropower projects" by setting up a veto process that doesn't take energy implications into consideration. He said the industry would work with Dingell and the Senate to get the amendment weakened or killed in conference.

Source: Land Letter, Vol. 11, No. 16 (June 1, 1992)

Japan and China Still Building Dams

The Nagara River is Japan's last wild river. All of Japan's other 30,000 rivers have been tamed with dams, concrete walls, dikes and elaborate spillways. Ignoring outcries from environmentalists, citizens' groups, biologists, and fishing enthusiasts, the Construction Ministry has begun building a $1.1 billion estuary dam, that critics say is unnecessary.

Mitsuaki Mizuno, an official of a water resource agency affiliated with the Construction Ministry said, "It is just emotional sentimentalism to want a river to remain just as it is. Such thinking has no place in modern society." "!#%&#!"

Another Construction Ministry official is quoted as saying, "A river is there for humans to develop and make appropriate use of. That should be obvious to any sane person. We are concerned with the total environment for humans. And if the natural fish happen to die in the process, we possess the technology to supply new fish raised in captivity. So you see, there is really no problem." "!#%&#!"

To make its point, the government has plastered communities all along the Nagara with posters depicting smiling cartoon trout skipping nimbly up fish ladders. "You see how easy it is?" the captions read. "You see how happy we are to have the dam?" "!#%&#!"

The 30-year fight over the fate of the Nagara is Japan's longest-running and most emotional environmental controversy, pitting a poorly organized coalition of environmentalists, fishermen and citizens against the mammoth Construction Ministry, the country's top dispenser of pork-barrel projects.

In China, the Three Gorges Dam on the Yangtze River is seen by some as proof of China's renewed commitment to economic reforms.

Construction of the dam will create a 370-mile long reservoir, ruining a spectacularly dramatic stretch of the Yangtze River that is now one of China's major tourist attractions. More than 1 million people will have to be relocated.

The project has been under consideration for nearly a half-century, and it appeared to have been shelved in the 1988 National People's Congress session when deputies raised questions about its feasibility. After the Tiananmen Square incident, a crackdown on political dissent followed and criticism of the project was effectively shut off, while government spokesmen mounted an intense propaganda campaign for the dam.

The cost of the dam is now put at $11 billion, but it could run to three or four times that figure. Its future will depend on whether China can borrow money from sources outside of the country to support the project.

Despite our frustrations with development pressures here, we're still very lucky to be living in this country!

Source: Globe (4-15-92)

The HI-Z Turb'N Tag

RMC Environmental Services of Drunmore, PA has developed, and patented (No. 4,970,988), a fish recovery technique called the "HI-Z Turb'N Tag".

The tagging and recovery technique is described in the April 1992 issue of Hydro Review in an article entitled "Debunking the Myths about Fish Mortality At Hydro Plants" by Dilip Mathur and Paul G. Heisey.

The HI-Z Turb'N Tag is a tiny latex balloon that is attached to the fish and then injected with chemicals. After an observation time of less than one minute, during which researchers examine the condition and behavior of the fish, the tag is injected with activating fluid. The fish is then introduced into the penstock of an operating turbine through an induction apparatus. The chemical contents within the tag react and inflate the tag shortly after passage. The tag then "buoys" the fish to the surface in the tailrace.

A boat crew recovers the fish with a bucket, usually within minutes. Biologists can examine the fish and quantify the exact location, extent, and type of injury, predation, or mortality suffered. With the Turb'N Tag recovery technique, investigators generally recover more than 90 percent of the fish. After recovery, biologists place the fish in a holding tank on the boat, remove the tag(s), and examine the fish for injury/mortality and scale loss. Then, the recovered live fish are transported to an onshore tank or a floating net pen, and held for latent mortality assessment.

According the article, the technique's successful use at a variety of locations, and with different turbine types and species, attests to its reliability in assessing turbine-related mortality. Tests are described for American shad on the Susquehanna River (PA), Atlantic salmon on the Connecticut River (VT), herring and American shad on the Connecticut River (MA), channel catfish and bluegill on the French Broad River (NC), and smallmouth bass on the Hudson River (NY).

While the mechanics of conducting a turbine-related mortality study using the tag method are relatively straightforward, RMC has found it useful to establish the following criteria up front in their study plans so that no misunderstanding exists after the studies are concluded:

- collection and handling mortality less than 15%
- effects of tagging negligible, as evidenced by 24-hour survival of at least 90% of the fish• minimum detectable mortality of no less than 10%
- recovery rates at least 90% between test and control fish
- average recovery time of less than 10 minutes

They also recommend a pretest using 10-20 fish to assure that the pre-established criteria will be met. This pretest also provides an opportunity to rectify any unforeseen problems.

RMC biologists observed minimal adverse effects to the fish from tagging, such as abnormal behavior, hemorrhaging, or death. Nor did they observe any adverse effects to the fish in the laboratory during development of the tag technique, and none have been detected to date in field tests.

They suggest that a small, neutrally buoyant miniature radio tag that produces minimal drag may be used in combination with the Turb'N Tag at power stations with high volume discharges or large tailwaters. The radio tag, attached to one or a few fish, allows biologists to zero in on fish immediately after they pass through the turbines. The radio tag can be inserted into the fish's stomach or attached externally with a stainless steel pin.

Additional information can be obtained by contacting Dr. Mathur and Mr. Heisey at RMC Environmental Services, Inc., Utility Consulting Division, Muddy Run Ecological Laboratory, 1921 River Road, P.O. Box 10, Drumore, PA 17518 (717) 548-2121.

Standard Protocols for Monitoring and Sampling Zebra Mussels

This publication authored by J. Ellen Marsden describes techniques for effective and efficient sampling of zebra mussel veligers, settled juveniles, and adults. The rationale for zebra mussel monitoring and ideas for designing monitoring programs are discussed.

Copies can be ordered for $2.00 from: Distribution Center, Illinois Natural History Survey, Natural Resources Building, 607 E. Peabody Drive, Champaign, IL 61820, (217) 333-6821.

The Year of Clean Water

"The Year of Clean Water", sponsored by America's Clean Water Foundation, is almost half gone. The Foundation is involved in creating greater awareness of water quality issues leading up to reauthorization of the Clean Water Act, and is interested in promotions of improved water quality by public or private groups. They encourage broad use of their logo, and it will appear on nautical charts printed by the

National Oceanic and Atmospheric Administration.

For further information the Foundation can be contacted at 750 First Street, NE Suite 910, Washington, D.C. 20002.

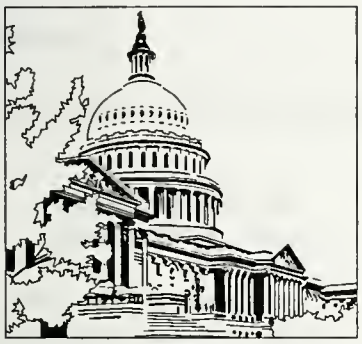
New Outdoor Atlas to be Published

A state-by-state guide to 5,000 wildlife and outdoor recreation areas has been published by the Houghton Mifflin Company. The 192-page book by John Oliver Holmes includes information from six federal agencies, more than 160 state agencies, as well as wildlife organizations. Color-coded state maps and charts also detail federal and state parks, forests and wildlife areas as well as private preserves and sanctuaries. "The U.S. Outdoor Atlas & Recreation Guide" costs $16.95 and was to be published May 26.

CONGRESSIONAL ACTION ON BILLS PERTINENT TO THE MRDS*

Interjurisdictional Rivers

H.R. 4169 Cooperative Interjurisdictional Rivers Fisheries Resources Act of 1992. Authorizes preparation of a national strategy for interjurisdictional rivers management, and tests the feasibility of the Mississippi Interstate Cooperative Resource Agreement. Sponsored by Gunderson (R/WI), as well as fifteen additional co-signers. Most likely will not be considered during this session of Congress



Clean Water Act

S. 1081 (Reauthorization bill). Still not scheduled for markup.

Endangered Species

H.R. 4045 (Reauthorization bill) - Introduced by Studds (D/MA) in November; no hearings scheduled yet. Bill may soon be introduced in Senate.

H.R. 5105. Introduced by Chandler (R/WA), streamlines exemption process, requires government officials to consider effect of recovery plans on local economies and helps compensate landowners for related losses.

Environmental Education

P.L. 102-259. President Bush signed into law, authorizing $40 million for Morris K. Udall Foundation and scholarships to fund students studying the environment.

Recreation

H.R. 5001. Introduced by Kostmayer (D/PA). Hearings held which authorizes a national assessment of rivers for recreation potential as well as fish and wildlife values, water quality and water supply possibilities.

Wild and Scenic Rivers

P.L. 102-271. President Bush signed into law, designating 85 miles of the Allegheny River (PA) as Wild and Scenic.

P.L. 102-275. President Bush signed into law designating 210 miles of eight Ouachita and Ozark national forest rivers as Wild and Scenic.

Wildlife Refuges

S. 2572. Authorizes several land exchanges in Arkansas and Idaho, one of which would add 56,000 acres owned by the Potlach Corp. to Arkansas' Cache River and White River national wildlife refuges in return for 18,500 acres of public land in Idaho.

H.R. 2881 and H.R. 3688. Would reform management of wildlife refuges. Hearing held May 6th by House Merchant Marine's fisheries panel.

* Source: Land Letter - Status Report (May 20,1992), Vol. 11, No.14

MEETING ANNOUNCEMENTS

UMRCC Mussel Symposium

A symposium entitled, "The Conservation and Management of Freshwater Mussels" is planned for October 12-14, 1992 at the Embassy Suites Hotel in St. Louis, Missouri. The symposium is being sponsored by the Upper Mississippi River Conservation Committee.

The symposium will focus on:

- *Regulations* - State, regional or system updates, management strategies for commercial and non-commercial spp., future trends and needs, sanctuaries, limitations on industry
- *Commercial Harvest* - Upper Mississippi River status, regional assessments of pressure, industry status, concerns and trends, international trade implications
- *Conservation* - culture, early life history, reintroduction, stocking, restoration, habitat requirements and management, habitat alteration, indices of populations, exotics update, endangered species recovery efforts, etc.
- *Sampling Methods and Data Management* - equipment and collection strategies, evaluation techniques, sampling designs, software applications
- *Environmental Awareness* - legislative needs, political processes, export taxes, resource rent, user fees

More information on the Symposium can be obtained from Kurt Welke, Wisconsin Department of Natural Resources (608) 326-0233 or Jon Duyvejonck, UMRCC Coordinator (309) 793-5800.