River Crossings

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White River Water Project and the Ivory-billed Woodpecker

A project that would pump water from the White River to rice fields in eastern Arkansas will not endanger the elusive ivory-billed woodpecker, U. S. Fish and Wildlife Service (FWS) officials concluded in a review ordered by a federal judge. The wildlife agency worked with the U. S. Army Corps of Engineers (Corps) surveying sites within a mile of a pumping-station construction site scouring the skies and forests for signs of the bird.

In a July 26 letter to the Corps, Mark Sattelberg, field supervisor of the FWS office in Conway, AR, concluded that the project "is not likely to adversely affect the ivory-billed woodpecker." In July 2006, U. S. District Judge Bill Wilson Jr. halted work on the now-nearly $400 million Grand Prairie Irrigation project in eastern Arkansas. The Grand Prairie Irrigation project's pumping station is near DeValls Bluff, less than 20 miles from where the bird had reportedly been seen and filmed.

The FWS letter and the biological-assessment study done by the agencies will be submitted to Wilson within 60 days and further hearings could be ordered. If the court rules in favor of the Corps, the stalled project — which the Corps contends will protect aquifers crucial to farmers and residents in the region — could resume.

In 2005, the U. S. Department of Interior announced that the bird had been rediscovered in the Big Woods of eastern Arkansas after having been presumed extinct for 60 years. Shortly after the announcement, the Corps concluded that the irrigation project wasn't likely to harm the woodpecker's habitat, prompting a lawsuit by the *National Wildlife Federation* and the *Arkansas Wildlife Federation*. As part of that lawsuit, Wilson ordered a more thorough assessment of the project's effect on the ivory-billed woodpecker, which was reportedly rediscovered in the Cache River National Wildlife Refuge north of Stuttgart.

Ivory-billed Woodpecker as sketched by Mark Bowers, FWS, Raleigh, NC.

Wilson wanted the Corps and the FWS to examine the potential effect on the bird's nesting, roosting and active-foraging habitats within 2.5 miles of any construction. Wilson also ordered the agencies to inspect for signs of the bird's activities "in all trees 12 inches or greater in areas that will be most affected by changes in water level." He also ordered nesting, roosting and foraging surveys "in the forest areas adjacent to canals and pipelines."

Sattelberg said that the FWS worked with the agency to train Corps employees to

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look for roost holes. But, instead of covering 2.5 miles (as ordered by Judge Wilson), the FWS survey went only one mile out from the construction site. "Studies have shown they wouldn't go far," Sattelberg said of the larger area requested by Wilson. He said further that he hopes the FWS's explanation of the bird's habits will show the judge that the agencies' work was thorough. "What we're hoping is, when the judge sees the justification in the letter, he'll agree with it," Sattelberg said.

The two agencies are also looking at water levels and taking into account the types of trees found in a given area when conducting their surveys to ensure that the bird's habitat is protected. "They'll have to monitor the areas to make sure there are no ivory-billeds," Sattelberg said. "Through all the investigations, they've not found evidence [of the woodpecker]." Sattelberg said such work "started even before the lawsuit." "We've been working on it from the beginning. The lawsuit just sort of pushed it along," he said.

David Carruth, president of the *Arkansas Wildlife Federation*, said that he had no problems with the methodology employed by the two agencies, but added that not enough territory was covered. "My take on what I've read is they are far, far short of what Judge Wilson intended them to do," Carruth said. "Even though the pump is going to be physically at DeValls Bluff, the impact zone will be as far south as St. Charles," Carruth said. "There's no question that there's going to be impacts further south. The question is how far south."

Construction on the project was halted a week or so before the judge's July 20, 2006, order because federal funding ran out. The project's cost was estimated at $319 million when it was stopped last year. Bob Anderson, a spokesman for the Corps' Memphis district, said that the agency hopes to get federal funding restarted in 2008, assuming the biological assessment is approved by Wilson and the injunction is lifted. It's unclear when construction could resume, Anderson said. "There's really not any kind of schedule now. We've got to wait to get cleared to begin again." "The longer the project is delayed the more the price will rise," he said. The irrigation project was first authorized in 1950 and rescinded by Congress in 1986 before being reauthorized a decade later. Litigation and jurisdictional battles have caused delays in the on-again, off-again project.

Debate over the ivory-billed's existence has continued to swirl — the main evidence involves a blurry video and disputed sound recordings. A recent article entitled, "Giving up the Ghost" said that the exhaustive search by the Cornell Lab of Ornithology should have uncovered signs of an ivory-billed — if there was one to be found. Some prominent ornithologists have also questioned the rediscovery.

Sources: Katherine Marks, *Arkansas Democrat-Gazette*, 8/3/07; and *Greenwire*, 8/3/07

Battle over the Big Muddy

Recent Missouri River restoration projects have come under fire from farm groups and the Missouri Clean Water Commission over dumping of sediments in the river. The flare-up over the dumping, or as the U.S. Army Corps of Engineers' (Corps) views it "reintroduction", of soil back into the river involves the Corps' efforts to restore wildlife habitats along the river.

On Jameson Island, the Corps is cutting a primary channel approximately 100 feet wide in order to make a side channel that boosts habitat for species such as the endangered pallid sturgeon, and the estimated 1.5 million cubic yards of spoils from cutting this channel are being reintroduced to the River by trucking them to the main navigation channel, where current carries the material downstream.

Even though the Corps reports core samples to be 80% sand, dumping sediment into the river runs counter to the efforts farmers have made to protect topsoil and keep it out of streams and rivers according to the *Missouri Ruralist*. But Corps officials point out that the Missouri River actually is "sediment deficient." "The river is only carrying 20% of the sediment it once did," says Mike

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George, program manager for the Corps' Missouri River Recovery project.

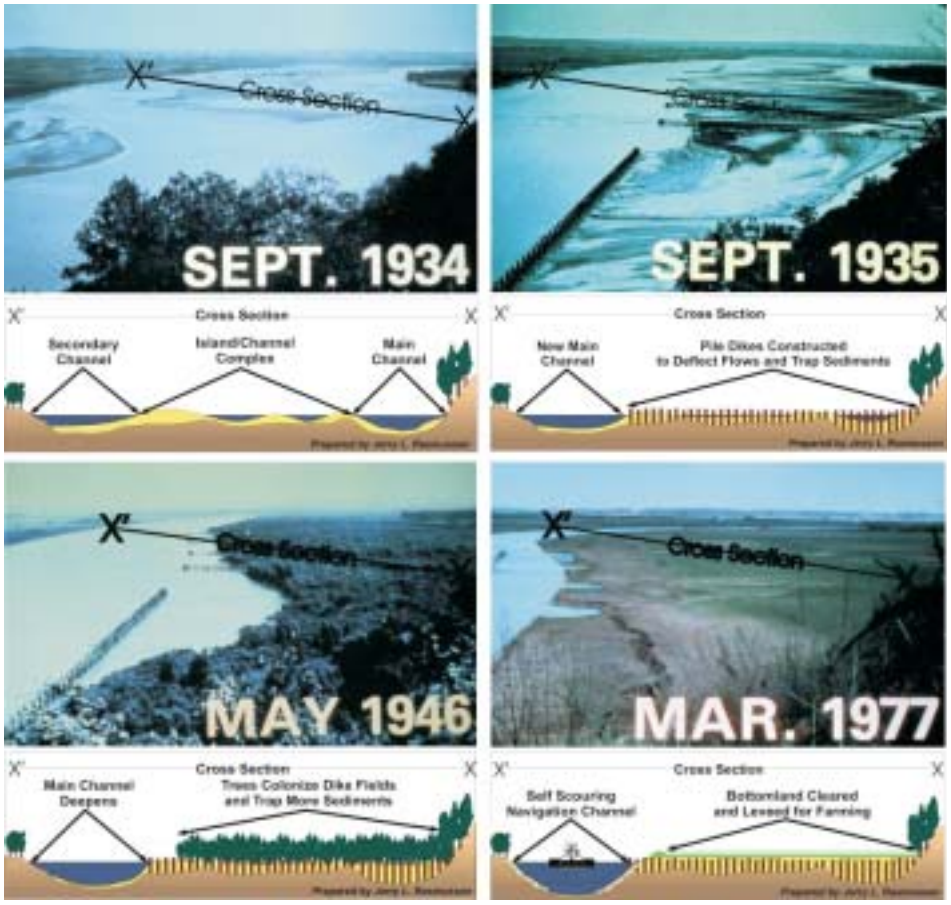
In fact, the Corps' Bank Stabilization and Navigation Project, authorized by the Pick Sloan Project in the 1930s, changed the Missouri River from a wide, meandering river rich with sandbars, islands and side channels into a "self scouring" navigation channel that accreted land where former channels existed. This newly accreted land was then claimed by adjacent landowners for farming as shown in the accompanying figure. Fish and wildlife habitats lost in the former river channel and erosion zones (not the entire floodplain) included:

- > 100,000 acres of aquatic habitats
- > 65,000 acres of island sandbars
- > 114,000 acres of wetlands
- > 190,000 acres of woodlands
- > 127 miles of shoreline

The flood control reservoirs in Montana and the Dakotas, along with armoring of the channel itself with rock for the Pick Sloan Project, have prevented the River from carrying its normal sediment load. Lack of sediments carried by Midwestern rivers has impacts on the Missouri and Mississippi River System all the way to Louisiana and the Gulf of Mexico where the wetlands of the Gulf Coast no longer receive an adequate sediment supply to maintain their health and well being. Ecologists in Louisiana would love to see the river carry more clean sediments their way.

But farming interests express different views. In letters to members of the Missouri congressional delegation and Missouri Governor Matt Blunt, *Missouri Farm Bureau* President Charles Kruse has asked for help in preventing the Corps from continuing construction projects that are "…an outrageous abuse of taxpayer dollars….". And Kristin Perry, vice-chair of the Missouri Clean Water Commission from Bowling Green, MO, says the commission is not trying to stop the overall project, but is opposed to the dumping of soil. "We are concerned about the dumping of the soil that is being removed to make these chutes. The soil is dumped down the river to get rid of it. It is not staying here to be part of the shallow water habitat," she says.

The Missouri River Fish and Wildlife Mitigation Project is designed to compensate for fish and wildlife habitat losses (noted above) that resulted from the past



The Missouri River near Rulo, NE as it changed from a natural river in 1934 to a channelized river or "drainage ditch" over the following decades. The Cross Section X-X' in each picture corresponds to the drawing below each picture. Notice how the former floodplain habitats (important to fish and wildlife) were converted to farmlands. In Missouri this newly formed land became the private property of whomever owned the adjacent riparian land, and in most cases these newly formed lands were leveed and farmed. During the flood of 1993 many of these levees failed and willing sellers were given the opportunity for a government buyout. Most of these government buyouts were then converted to state or federal wildlife refuges, some of which are now being restored as functioning floodplains, providing for flood control as well as important habitats for fish and wildlife species, some of which are threatened or endangered. In the accompanying article, some farmers are now objecting to the manner in which these floodplains are being restored.

channelization efforts of the Pick Sloan Project. According to the Corps, the project focuses on preserving existing fish, such as the pallid sturgeon, creating shallow water habitat and improving wildlife habitat. The Corps is utilizing many different methods to accomplish this, including dredging filled-in areas, reopening historic chutes, bank stabilizations, dike notching, pumping water, dike/levee construction, and vegetative plantings. The Corps and the U.S. Fish and Wildlife Service (FWS) are currently constructing 22 "chutes" along the lower Missouri River.

Kruse says that the "illogical course of action" conflicts directly with state and federal soil conservation programs; that as recently as 2006, Missouri voters approved an extension of the 1/10th cent state sales tax for state parks and soil conservation programs. "It defies common sense that the Corps and FWS would intentionally dump 24 million tons, or more than 15% of the total amount of soil saved over the past 23 years, into the Missouri River," Kruse said in his letter. "In addition, we do not believe any additional federal funds should be appropriated to acquire land under the Missouri River Mitigation Program."

Folks in Louisiana and elsewhere downstream might offer different views, as would fish and wildlife species, if they could speak for themselves. It seems that everyone should cool down a bit and take

some time to gain a better understanding of river ecology, river hydraulics and hydrology before criticizing the important work being done by the two federal agencies. Biologists have worked for decades to recover some of the habitats lost to the Pick Sloan Project and to restore species threatened by those losses. The flood of 1993 breached many of the agricultural levees along the River in Missouri and this led to buyouts for people wanting assistance in getting out from under failed investments and getting off of the floodplain. Most of the lands so acquired were then set aside for management as fish and wildlife habitats and as storage areas for flood waters, thus reducing downstream flooding, a natural function of a river's "floodplain". The current projects are merely part of the on-going efforts of federal agencies to make these floodplain lands more productive for native fish and wildlife species.

While it is certainly important to keep the topsoil on the land, it is equally important to let the River be a river and not just a channelized "drainage ditch" or "rain gutter" as it has been described by many. The side channels being created by the Corps are important to the River's health, and the overall project needs to be supported. Dredged material placed in the River also helps restore some of its natural sediment load, captured by the reservoirs in Montana and the Dakotas and needed to restore wetlands in Louisiana. The River is a dynamic, living system and it needs to be allowed to act as a river, not just as a drainage ditch. We applaud the Corps' efforts in helping to restore some of the River's natural functions, including dumping some of the material dredged from the floodplain back into the River.

Source: Jerilyn Johnson, *Missouri Ruralist*, 9/4/07

Engineers Skeptical of New Grass for Levees

A Louisiana scientist claims a simple form of dense grass could be the solution the U.S. Army Corps of Engineers (Corps) has been looking for to fortify New Orleans' levees, but the agency remains unconvinced. Gregg Henderson, an entomologist at Louisiana State University, is convinced that the Corps could use vetiver grass to protect the levees against flooding and termites, two of the city's worst afflictions. The grass, known as a "soil nail," can grow up to 8 feet tall and puts down a massive root system that can stabilize the ground. The grass has been touted for defending against coastal erosion along the Gulf of Mexico, but Henderson said that the plants root systems discourage termite infestations that he believes have weakened the city's levees. In addition, the root systems contain nootkatone, a compound toxic to most insects, including termites.

But the Corps is skeptical of the idea, worried the grass may not hold up to its promise while at the same time become an uncontrollable invasive species like the virulent kudzu vine that was brought into the south in the 1930s to control erosion. "We're obviously concerned and proceeding with caution when it comes to vetiver," says Col. Murray Starkel, operations leader at the Corps' New Orleans district office. The virtues of vetiver have been touted for decades as an easy solution to runoff and erosion and even has its own advocacy group — *the Vetiver Network* — that has promoted the grass's use around the globe. But while remaining skeptical, the Corps has started to warm to the vetiver by including it in a short list of 10 plants the agency is considering for planting on New Orleans levees.

Sources: Susan Warren, *Wall Street Journal*, 8/22/07; and *Greenwire*, 8/23/07

Corps Proposes 'Virtual Center' to Design Environmental Projects

The U.S. Army Corps of Engineers (Corps) has proposed a "virtual center" that would assemble environmentalists, scientists and engineers who would help design environmental restoration plans to accompany civil works projects. There is no budget for the proposed *Ecosystem Restoration Center* (ERC) yet, so the Corps plans to tap experts to work pro-bono until Congress provides funding, officials said at a meeting of the agency's environmental advisory board in late July.

Since hurricanes Katrina and Rita devastated the Gulf Coast area in 2005, the Corps has been working to revamp how it plans and builds projects, agency officials said. Lt. Gen. Robert Van Antwerp said the Corps would begin doing more to anticipate flood risks and other environmental problems, improve its efforts to inform the public of potential dangers and streamline operating procedures at the agency's 45 districts.

The ERC would be part of that effort. The advisory board said it would function as a training center, a support system for agency's field offices and a clearing house for scientific ecosystem information. Van Antwerp said the ERC would be a critical component of the Corps' hoped-for transformation, but he said the effort faces hurdles in obtaining cash. "This is one of those areas where it is high time we do it, so I am all for that," he said. "But this is going to take a very concerted effort on our part and by all agencies to bring some of these things to bear."

The advisory board proposed the ERC in 2005 and sent a letter last year to former Corps chief Lt. Gen. Carl Strock, outlining its vision for the center and asking the agency to set in motion a plan for its creation. In February, Strock tapped Ed Theriot, who oversees most of the agency's environmental programs, to develop the center. Before coming to Washington, Theriot served as the director of the Corps' environmental laboratory in Vicksburg, MS. Theriot has also served as the top U.S. adviser to the Iraqi minister for water resources, where he helped manage a workforce of 20,000 employees.

Theriot will be responsible for assembling federal partners and other stakeholders for the center. In November, Theriot expects to submit a progress report to Van Antwerp and the advisory board that will outline what is needed to start the project. His goal is to establish a center by December. "But it has to be a 'virtual center,'" Theriot said. "We don't have resources now to employ people and put them in one location. That's the ultimate goal."

But the chairman of the advisory board, George Crozier, director of Alabama's Dauphin Island Sea Lab, expressed skepticism about the merits of a virtual operation and urged the agency to focus on getting funding for a brick-and-mortar center. He also reminded the Corps about the enormity of the center's task. "One of my personal concerns is that we are barely good at building habitats," Crozier said. "To call them ecosystems is a bit presumptuous based on what we know at this point in time."

Board members also said that the Corps needed to build public support for the

effort to get cash from Congress. "To create a real center where we can bring in graduate students, academics and [non-governmental organizations] ... is going to require a real commitment of funds," said board member Ken Babcock, director of *Ducks Unlimited's* southern regional office. "That's only going to happen when the public learns about this and works to influence Congress." Van Antwerp agreed about the need for public support and urged Theriot to clarify the center's role in developing future projects. "I want to know how this will work," he said, "so that it becomes part of our psyche as we put projects together."

Source: Lucy Kafanov, *Greenwire* 7/20/07

NC Dam Removal Success Story

The demolition of a dam near Carbonton, NC has caused the endangered Cape Fear Shiner minnow to begin to rebound. The minnow has returned to a 10-mile stretch of the Deep River for the first time in 80 years, scientists believe. The dam, built in 1921, was closed in 2004 and demolished two years later.

Scientists first identified the Cape Fear Shiner in 1971. It was then known only in small reaches of the Haw and Deep rivers in Randolph, Chatham, Lee, Moore and Harnett counties. By late 1987, the fish was on the federal Endangered Species List because of dwindling habitat caused by a long history of dams.

The dam that was taken down was part of a hydroelectric plant built in 1921. It closed in 2004 and the dam was removed by 2006. Officials say removal of the dam has resulted in one of the biggest ecological success stories in North Carolina. The yellowish minnow with black stripes and pointed fins has been found in a 10-mile stretch of the Deep River. Biologists believe the fish had not inhabited that area for at least 80 years.

Raleigh-based *Restoration Systems*, which coordinated demolition of the dam, while partnering with the N.C. Ecosystem Enhancement Program, continues to monitor 58 sites along the Deep River to track its restoration. "The speed at which this recovery has taken place is what stands out," said Adam Riggsbee, an environmental scientist with the company. Company co-owner George Howard said the project has breathed new life into the once-sluggish river. "Unfortunately, it's such a lonely part of the world, not many people get to see it," Howard said. "But it really is a wonderful thing to see."

Sources: *News & Record*, 9/10/07; *AP/San Francisco Chronicle*, 9/10/07; and *Greenwire*, 9/12/07

Montana Dam Removal Controversy

Atlantic Richfield Company (ARCO) is trying to detach itself from legal and fiscal involvement in Montana's Mike Horse Dam removal. Lawyers for ARCO say in documents filed in U.S. Bankruptcy Court in Texas that a three-year federal and two-year state statute of limitations for claims ran out long ago. ARCO further claims that under the Clean Water Act, only the current facility owners and operators can be held liable for natural resource damages. The lawyers note that ARCO "relinquished all property interest and ceased all mineral exploration activities at the site more than 25 years ago." They argue further that the bankruptcy court doesn't have jurisdiction in deciding the company's potential liability to the state regarding natural resource damages.

The filings are part of the ongoing Chapter 11 bankruptcy case of another company, *Asarco*, and U.S. Forest Service efforts to remove the defunct Mike Horse Mine, which sits 15 miles east of Lincoln, MT. *Asarco* owns the Mike Horse Mine and the mothballed East Helena lead smelter, as well as other properties throughout the nation, and is trying to reorganize and emerge from Chapter 11 bankruptcy, for which it filed in August 2005. As part of the proceedings, *Asarco* is trying to ascertain its outstanding debts and environmental liabilities.

One of those liabilities involves the Mike Horse Dam, which is in the Upper Blackfoot Mining Complex. In July, Regional Forester Tom Tidwell announced plans to remove the dam and encapsulate the earthen impoundment, as well as other nearby contaminated mill tailings and materials, at an estimated cost of $26.7 million. Past efforts have focused on getting *Asarco* to foot the bulk of the bill, but ARCO also has been named as a potentially responsible party by state and federal officials.

Asarco's Mike Horse Mine is slightly southwest of the dam and allegedly contributed to the contamination in and around it. The land on which the Mike Horse Dam sits is part of the Helena National Forest's Lincoln Ranger District. ARCO's alleged involvement is due to the fact that when the original Mike Horse Dam failed in 1975, it was repaired by the *Anaconda Mining Co.*, which was bought by ARCO in 1977. In bankruptcy court documents filed in April, *Asarco* contends that the harms associated with the Mike Horse tailings dam occurred during the 1975 blowout of the original dam, and when ARCO rebuilt the structure, it did so with the approval of the federal government. That means both ARCO and the government have some fiscal responsibility, according to *Asarco's* lawyers.

View of the Blackfoot River, MT.

Originally built in 1941, the Mike Horse Dam is poised at the headwaters of the Blackfoot River. When the dam blew out in 1975, the contaminated water and sediments ended up killing all aquatic wildlife in a 10-mile stretch of the Blackfoot River. The dam was rebuilt using nearby materials that included mine tailings. Two years ago, questions arose regarding its stability, and a recent report noted large holes, or "voids," in the structure. The Forest Service reported that the dam was a compromised structure that should be removed from service.

Source: *Associated Press/Billings Gazette*, 9/5/07

Mountaintop Removal Proposal Criticized

Environmental and industry groups are squaring off over a federal rule proposal governing coal-mine operators' handling of rock wastes near waterways. The Bush administration proposes to allow the continuation of so-called mountaintop

mining. A draft environmental impact statement and rule are intended to clarify existing regulations and ease concerns about the environmental destruction caused by mine operators who dump rock from mountaintop removal techniques into streams and valleys.

Mountaintop mining techniques are used to expose coal seams in West Virginia, Kentucky and other Appalachian states. It involves shearing off the top of a mountain ridge and depositing waste rock in adjacent valleys, many of which are coursed by small streams. Mining companies say the technique allows swift, safe access to low-sulfur coal, but environmentalists say valley fills destroy waterways.

Current rules, which have been in effect since August 1983, require coal operations to leave a buffer around streams, stating that "no land within 100 feet of an intermittent or perennial stream shall be disturbed by surface mining operations, including roads, unless specifically authorized." The rule says regulators can make exceptions only if water quality and other environmental resources will not be adversely affected.

Earthjustice and other groups objected to the Office of Surface Mining's (OSM) first proposed rule change, in January 2004, which would have allowed spoil dumping if operators take steps to prevent additional damage to streams and minimize disturbances "to the extent possible, using the best available technology." In response to the groups' concerns, OSM decided to conduct an environmental impact study (EIS) on the proposed changes, which it had originally concluded was not necessary.

But environmental advocates point to ambiguity in the new proposed rule, which would require applicants for mining permits to prove their excess spoil disposal plans would "result in the least adverse environmental impact." As for stream buffers, the proposed change would clarify the conditions under which operators could obtain a variance from the rules. It would also extend the rule to cover lakes, ponds and adjacent wetlands, in addition to streams

"OSM summarily rejected all alternatives that would reduce harm and only considered those that would allow stream burials to continue at the same rate as in the past," said Jim Hecker of the advocacy group *Trial Lawyers for Public Justice*. "OSM's own report shows that valley fills harm downstream water quality but this proposal does nothing to address it." Indeed, the draft EIS acknowledges the current rule will result in about 535 miles of streams being damaged nationwide just from surface mining operations approved between October 2001 and June 2005.

But *National Mining Association* spokesman Luke Popovich said *Earthjustice* was obfuscating the debate. Spoil dumping is explicitly allowed in the Surface Mining Control and Reclamation Act of 1977, the Clean Water Act and a subsequent court decision, he said, as the economic benefits of mountaintop mining are essential to the mountainous Appalachian region — and without spoil dumping, mining operations could not continue. The basic issue of spoil dumping, he said, is "a problem they have to take up with Congress. "OSM is merely clarifying a rule made ambiguous by its own interpretation," Popovich said.

Sources: Debra Kahn, *Greenwire*, 8/23/07; and *E&ENews PM*, 8/22/07

Spotted Owl Plan Criticized

The U.S. Fish and Wildlife Service (FWS) ignored the most recent and best available science in drafting a recovery plan for the northern spotted owl at the behest of a senior Interior Department official, according to an agency-ordered peer review. FWS selectively cited scientific reports and data in order to justify its proposal to reduce protection for old-growth forests and emphasize the threat of the barred owl to the spotted owl, the *Society for Conservation Biology* and *American Ornithologists' Union* found.

Northern Spotted Owl (U.S. Forest Service Photo)

Interior Deputy Secretary Lynn Scarlett told the House Natural Resources Committee in May that she ordered the recovery team to develop the option that eliminates mapped conservation reserves. Instead, the Forest Service and the Bureau of Land Management would be given guidelines for designating owl conservation areas. The FWS "picked among pieces of science in order to justify essentially a reduction in habitat, when the owl itself and its habitat have been declining," said John Fitzgerald, policy director of the *Society for Conservation Biology*. "The extent of the protection of the habitat and the habitat needs to be increased," Fitzgerald said. "This proposed recovery plan put excess emphasis on actions to reduce the number of barred owls that may not work and may not protect the spotted owl."

The draft recovery plan was prepared in response to a court settlement with the *American Forest Resource Council*. The northern spotted owl was listed as threatened under the Endangered Species Act in 1990, fueling the debate over logging old-growth forests in the Pacific Northwest, but no recovery plan was ever finalized. Meanwhile, the FWS has proposed removing 1.5 million acres of forest in Washington, Oregon and California for the owl.

In its draft plan, FWS focused on the barred owl, a species native to eastern North America that is outcompeting the northern spotted owls for food and habitat. If the barred owl populations are controlled, the theory goes, the spotted owl will benefit. "Controlling the barred owl is essential to recovering the northern spotted owl," FWS Pacific Region Director Ren Lohoefener said when unveiling the plan in April. "Because the range and number of barred owls are expanding rapidly, our effectiveness in addressing this threat depends on immediate action." FWS believes the two options are "equally capable of achieving recovery," Lohoefener added.

"We don't know whether those measures will work against the barred owl and help the spotted owl," Fitzgerald said. "If you want to experiment with those measures, that's fine, but you have to work from a place of strength."

The draft plan establishes five goals for spotted owl recovery — including a stabilized population. FWS said it omitted a target for the population because it would be too expensive to count the owls. A second option identifies "habitat blocks" comprising 7.7 million acres where officials would concentrate research and habitat management.

The Interior Department has been faced with a series of scandals related to ESA listings this summer. Already, FWS has said it will revisit decisions made or affected by former political appointee Julie MacDonald, including those involving the white-tailed prairie dog and Preble's jumping mouse. And earlier this year, it was revealed that the FWS allowed an executive from *Weyehaeuser Co.* to edit an agency letter to the company about the potential effects of its logging operations on spotted owls. The deadline for public comment on the spotted owl recovery plan was August 24.

Source: Dan Berman, *Greenwire*, 8/14/07

Trout Restoration Used Wrong Fish

Fish and Wildlife Service (FWS) biologists working to restore the endangered Colorado greenback cutthroat trout were actually stocking the wrong fish, according to a study published in August in the online journal, *Molecular Ecology*. University of Colorado (CU) researchers discovered the mistake over the course of a three-year investigation into the FWS' work on the trout's population by using advanced genetic testing.

The tests revealed that agency biologists were stocking streams in the South Platte and Arkansas river drainages in the state's Front Range with Colorado River cutthroat trout and not greenback cutthroat trout. The study said that out of nine populations of fish believed to be endangered greenback cutthroat trout that were descendants of survivors, five were actually the Colorado River cutthroat trout, which look similar but are a separate and more common subspecies. The other four populations were greenbacks.

"This was a very surprising result," said Jessica Metcalf, a researcher at CU who led the study. "It's not at all what we expected." She had expected to confirm what researchers had thought for decades — that those nine populations were all made up of greenback cutthroats. But Robert Behnke, a retired Colorado State University professor and taxonomist who originally identified some of the native populations, questioned whether researchers fully understand that "what's left are tiny fragments of what was here over 100 years ago." "The genetic data is not wrong, but it is misinterpreted," he said.

But Metcalf said additional research bore out their conclusion. She and others who worked on the project, perplexed by their original findings, started looking at everything from historical stocking records to diaries and journals from people who ran fish hatcheries a century ago. What they found was that stocking was widespread, and they concluded that Colorado River cutthroat were probably moved from the Western Slope to the Front Range as part of that effort in the late 1800s and early 1900s.

Metcalf, who recently completed her doctorate in ecology and evolutionary biology at CU, said scientific advances continue to shed new light on the program. She said there's reason for optimism about the findings. "Four of the native populations appear to be pure greenback cutthroat trout. Metcalf's study also found that one population on the Western Slope that had always been assumed to be Colorado River cutthroat was actually populated with greenback cutthroat trout. Stocking, again, is the likely culprit, she said. The ramifications are wide ranging. "I think the most important thing right now is obviously to protect the four populations that are on the east slope that have been identified as greenback," she said. But it's also important for researchers and biologists to consider the industriousness of humans when trying to understand the evolution of various populations, to realize "that they may have introduced species before we ever described them."

The greenback, the Colorado River cutthroat trout and the Rio Grande cutthroat trout all evolved in Colorado. A fourth subspecies, the yellowfin cutthroat, is believed to be extinct. Metcalf said although the greenback and Colorado River cutthroat are closely related, they've likely been different subspecies for about a half million years. One of the challenges facing biologists, she said, was the lack of baseline information about the greenback, which was already "in major decline" when first described in detail in the late 1800s.

Greenback Cuttroat Trout (Colorado Division of Wildlife Photo)

The greenback cutthroat, named for the brilliant crimson slashes behind its jaw, was named Colorado's state fish in 1994. Greenback cutthroat trout were historically found in the drainages of the Arkansas and South Platte rivers in Colorado and a small part of Wyoming. They were declared extinct in 1937 due to overfishing, pollution from mines and competition from nonnative fish. But researchers said remnant populations were found in the 1950s in tributaries and provided brood stock for fish raised in federal and state hatcheries and released in their native habitat. The fish was added to the federal endangered species list in 1978.

State and federal agencies, and some private groups, launched an effort to restore the greenback cutthroat, using sperm and eggs from what were believed to be the nine relic populations to reproduce new generations in hatcheries. Other federal agencies, including the Bureau of Land Management and Forest Service, have helped with the recovery program. An overall cost estimate was not available.

The recovery effort was thought to be close to its goal of 20 self-sustaining populations of at least 500 fish each. Bruce Rosenlund project leader for the FWS assistance office in Denver said federal and state agencies working on restoration believed the fish were found in 142 miles of waterways, including in Rocky Mountain National Park. CU researchers, though, said that based on genetic test results, the greenback cutthroat trout's range is only 11 miles of streams. The study concluded that the recovery effort has "failed to improve the species' status."

Rosenlund said other scientists will read and comment on the research. He said

biologists working on restoring the greenback trout want to see "the science played out." "The report is just a continuation of different expert input provided to the team for consideration for restoration," he said. In the meantime, state and federal biologists will continue with other key parts of the recovery program, such as habitat restoration. Colorado Division of Wildlife spokesman Tyler Baskfield said the research results are a setback but state biologists believe the program will succeed over the long term. "We've been moving fish around in the state since the late 1800s and now the new science comes in and all of a sudden it's a different playing field," Baskfield said.

CU professor Andrew Martin, the study's principal investigator, said while the findings might give the recovery program a "black eye," the hope is that biologists and agencies will move ahead on recovering the species before it goes extinct. The last version of the recovery plan for the greenback cutthroat, written in 1998, estimated that another $634,000 was needed to complete restoration of the population.

Meanwhile, in June, federal officials rejected efforts to designate the Colorado River cutthroat trout as endangered, citing a substantial increase in the number of known populations. "…our feeling for a long time has been that they (Colorado River and Greenback Cutthroat trout) were very, very closely related and indistinguishable, in fact, in their morphology, other than the fact that one's on the east side of the Continental Divide and one's on the west side of the Divide," Rosenlund said.

Sources: Judith Kohler, *AP/San Francisco Chronicle online*, 9/5/07; Kevin Vaughan, *Rocky Mountain News*, 9/5/07; and *Greenwire*, 9/6/07

Surrogate Broodstocking May Preserve Fish Species

A new method of "surrogate broodstocking" fish may yield a technique to preserve endangered species in the future, according to a Tokyo University of Marine Science and Technology study published in mid September in the journal *Science*. The study concluded that injecting hatched-but-sterile Asian masu salmon with sperm-growing cells from rainbow trout causes the salmon to grow up to produce trout. The goal of the study was to find a way to boost the rapidly dwindling population of bluefin tuna, which is prized in Japan for use as sushi and in other dishes.

Initial attempts to transplant sperm-producing cells into normal masu salmon mostly produced hybrids of the two species that didn't survive. This time, however, Goro Yoshizaki, researcher and lead study author, engineered salmon to be sterile. He then injected newly hatched salmon with stem cells destined to grow into sperm that he had culled from male rainbow trout. Once they were grown, 10 of 29 male salmon who got the injections produced trout sperm, called milt. Here's the bigger surprise: Injecting the male cells into female salmon sometimes worked, too, prompting five female salmon to ovulate trout eggs. That's a scientific first, Yoshizaki said.

DNA testing confirmed that all of the dozens of resulting offspring were pure trout, he reported. Moreover, those new trout grew up able to reproduce. Those first experiments, funded by a Japanese research institute, used still fairly plentiful species to develop the technique. Yoshizaki said that his team also injected male trout cells into female salmon, prompting five female salmon to ovulate trout eggs. The discovery is a scientific first, he said. One objective of the work is building "a kind of spermatogonia bank of various fish species," Yoshizaki said. Transplanting the stored cells may enable scientists to revive species that become extinct, he added.

The stem cells were still primitive enough to switch gears from sperm-producers to egg-producers when they wound up inside female organs, explained University of Idaho zoology professor Joseph Cloud. The Tokyo researchers are collaborating with the U.S. National Oceanic and Atmospheric Administration to freeze sperm from a population of endangered sockeye salmon from Idaho, he said. Last January, Yoshizaki helped University of Idaho scientists collect and freeze immature sperm tissue from young sockeye salmon being raised at a state-run hatchery. In October Yoshizaki will be back to help Cloud thaw the tissue and implant it into sterile rainbow trout.

Idaho scientists are trying to produce sockeye salmon, highly endangered in that state, this time using more plentiful trout as surrogate parents. The new method is "one of the best things that has happened in a long time in bringing something new into conservation biology," Cloud said. "Future work should look to expand this approach to other fishes in need of conservation, in particular, the sturgeons and paddlefish," Queens College, NY, fisheries biologist John Waldman said. "We have a lot of species of fish around the world that are really in danger of becoming extinct."

Sources: Lauran Neergaard, *San Francisco Chronicle online*, 9/14/07; Simeon Bennett, *Bloomberg*, 9/14/07; and *Greenwire*, 9/14/07

China Builds Salvage Center for Endangered Sturgeon

China has built a salvage center in the Yichang section of the Yangtze River where Chinese sturgeon spawn in order to protect the endangered species. An 80-km river section from Gezhouba Dam, the first dam along the Yangtze, to Lujiahe shallows has also been set as a nature reserve for the species, said an official with the fishery bureau of Yichang, central China's Hubei Province.

The central government has invested more than 10 million yuan in the Chinese sturgeon protection project, including the establishment of the salvage center, the nature reserve and others. The Chinese sturgeon is one of the oldest vertebrates in the world, surviving for more than 150 million years, and a "living fossil" under state-level protection. It is a migratory fish mainly living in the Yangtze River valley area, but its spawning habitat disappeared in 1981 with the damming of the upper stream of the river. Fortunately, a natural spawning area was found downstream near Gezhouba Dam.

Scientists working on Chinese sturgeon conservation issued a report in July saying that the population of the rare species in the Yangtze River appeared to have dropped sharply since last year. A report from the Shanghai Yangtze Estuary Chinese Sturgeon Conservation Administration said that scientists had located just 14 young sturgeons as of July in the Chongming monitoring base, an area where the sturgeons are believed to gather, compared with 600 at the same time last year. "We used the same methods to trace the fish at the same time and place, but

unfortunately that's the result we got," said Liu Jian, director of the administration. The report said at least 100,000 Chinese sturgeons had been released into the Yangtze this year to restock the river. In Shanghai alone, about 2,156 artificially-bred fry were released, but only five had been detected to date.

Meanwhile, pollution along the Huai and Liao Rivers remains far too high despite years of crackdowns and waste treatment investment, and this puts one-sixth of China's population at risk, Mao Rubai, chairman of the National People's Congress environment and resources protection committee, said. Much of the water is unfit to touch, let alone drink, and may not even be fit for irrigation, according to state media reports. Many factories in China continue to illegally dump waste despite laws prohibiting their actions

Also, a year after the completion of the Three Gorges Dam project in the Yangtze River basin, geologists are suggesting the dam could contribute to the flooding it was built to prevent. Other problems including landslides and water pollution also have plagued the dam. Scientists are warning that the massive weight of water behind it is eroding the Yangtze's shores in several areas. That phenomenon, along with constantly shifting water levels, has caused the landslides and weakened the ground. Near the village of Miaohe, local officials say they are worried that a whole mountainside could collapse into the river. And Chinese scientists say the dam is blocking silt heading downstream to the Yangtze River estuary region, causing the area to shrink and saltwater to flow further inland. Additionally, the urbanization that accompanied the dam has led to more raw sewage and fertilizer runoff collecting in the reservoir, showcasing the rapidly industrializing country's battle to develop and control its environment.

At the same time, the Yangtze River dolphin, languishing at extremely low numbers for decades, has been officially declared extinct after a multinational team of scientists failed to find any during a six-week search of its habitat last year. The freshwater mammal, also known as the baiji, fell victim to pollution, illegal fishing, and heavy shipping on the Chinese river. It is the first large vertebrate to be driven to extinction by human activity in more than 50 years — a finding that may have implications for surrounding populations. "River dolphins are the watchdogs of the water," said Jamie Pittock, head of the *World Wildlife Fund's Global Freshwater Programme*, in a recent alert. "The high levels of toxic pollutants accumulating in their bodies are a stark warning of poor water quality. This is a problem for both dolphins and the people dependent on these rivers". The 20-million-year-old species, which could weigh over a half-ton, had historically achieved god-like status among fishermen on the river. Protections ended during the Chinese cultural revolution, and their numbers plunged as they were hunted for food and their skin.

Sources: *www.chinaview.cn*, 9/1/07; *Reuters/PlanetArk*, 8/28/07; Shai Oster, *Wall Street Journal*, 8/29/07; *Agence France-Presse*, 8/8/07; Ian Sample, *London Guardian*, 8/8/07; and *Greenwire*, 8/8 and 9/4/07

Buddhist Ritual Clashes with Nuisance Species Concerns

In New York's West Side Park on a Sunday in mid August, followers of a New York Amitabha Buddhist sect took part in a ritual in which hundreds of live reptiles were released into the Passaic River. And now environmental officials in two states are trying to track down the group.

Members of the Buddhist sect — devout vegetarians who believe in the sanctity of all living creatures — said they had purchased the creatures in New York's Chinatown for the purpose of setting them free. Ann Chin, a member of the group, said they chose the Passaic River because it was the nearest body of freshwater to New York City, where the eels, frogs and turtles they let go had the best chance of surviving and realizing their full karmic potential

State officials said that the practice is illegal and that they were working with New York authorities to track down the group. Jim Cussen, a captain in the law enforcement arm of the New Jersey Department of Environmental Protection's (NJDEP) Division of Fish & Wildlife, said there were no permits on file for the group and that the illegal stocking of fish or other species was a civil offense punishable by fines of up to $1,000. He added that the NJDEP would also try to determine the origin of the reptiles, to gauge their potential impact on the river. Mark Boriek, a biologist with the NJDEP, said species introduction permits are issued only in limited and controlled circumstances — such as stocking a private pond with fish — and probably would not have been issued to the group had it applied. "We're dead-set against it," Boriek said. "It's even illegal to stock any kind of carp or goldfish in New Jersey in a place with an inlet or outlet (from a body of water)." Boriek said Sunday's incident brought to mind several recent cases around the country of non-native invasive species, such as snakehead fish, that have disrupted ecosystems. He stressed he did not know the origin of the reptiles released into the Passaic and that they weren't necessarily harmful.

The Passaic River has been cleaned up in recent years, and up to 27 native fish species now inhabit it, according to the *Passaic River Coalition*. Boriek said the creatures released Sunday might have a chance at survival. He added that he hadn't heard of a release of this size in New Jersey, but that immigration could change that. "I could foresee it coming, though, with more ethnic groups moving into the country," Boriek said. "It is more of an issue these days."

Chin, the Amitabha devotee who participated in the ritual, said the group's members believed in letting the earth's creatures complete their natural life cycle. Rescuing them from fish markets before they were prematurely killed meant giving them a chance to fulfill their true karmic purpose. "When I pass by the fish market, I cry," Chin said. "I tell people: 'Stop killing them.' Then: 'Don't eat them.' Then your heart goes to mercy." Amitabha, also known as the *Pure Land Study of Buddhism*, is heavily focused on cause and effect, and the cycle of transmigration.

Chin, who is a vegan, said she does not even kill flies or other bugs, but catches and releases them to restore nature's harmony. She said Buddhists believe that reptiles are the reincarnation of humans who did bad things, and that the ritual would give them a chance to "go back to the world as good people and go to heaven" in the next life.

"These practices that may seem strange to the Judeo-Christian tradition, are very common to other traditions," said Charles

Ryerson, professor emeritus of the history of religion for the Princeton Theological Seminary. "We Jews and Christians and Muslims make sharp distinction between humans and other beings — not East Asian religions, who believe all life is to be treasured." Ryerson said he had no knowledge of the Passaic River incident, but that the ritual was a common one among Buddhists, whose worshippers believe they gain merit by releasing other beings from a premature death.

Ryerson added it was an example of America becoming an increasingly pluralistic society. "They probably thought they were doing a good deed and didn't think about permits," he said, stressing that he was neither defending nor attacking the group. "The Buddhists are probably going to learn they're in a non-Buddhist culture, and the Americans will learn they're in a culture with a lot of Buddhists."

Source: Samantha Henry, *Herald News*, 8/13/07

Fish Killing Fire Retardant Controversy

A federal judge in Montana has ordered the Bush administration's top forestry official to explain why he should not be held in contempt of court for the U.S. Forest Service's failure to analyze the environmental impact of dropping fish-killing fire retardant on wildfires. If found in contempt, Agriculture Undersecretary Mark Rey, who oversees the U.S. Forest Service, could go to jail until the Forest Service complies with the court order to do the environmental review.

Noting that Rey had blocked implementation of an earlier review, U.S. District Judge Donald W. Malloy in Missoula, MT, ordered Rey to appear in his court on Oct. 15 unless the Forest Service completes the analysis before that time. Forest Service spokesman Joe Walsh said the agency was working on the analysis, but he could not say whether they would meet the new deadline, because it was two months away.

Forest Service Employees for Environmental Ethics (FSEEE), an environmental group based in Eugene, OR filed the lawsuit in 2003, a year after more than 20,000 fish were killed when toxic retardant was dropped in Fall Creek in central Oregon. In 2005, Malloy ruled that the Forest Service violated the Endangered Species Act and the National Environmental Policy Act when it failed to go through a public process to analyze the potential environmental harm of using ammonium phosphate, a fertilizer that kills fish, as the primary ingredient in fire retardant dropped on wildfires.

In February 2006, the judge gave the Forest Service until Aug. 8 this year to comply, noting that if they needed more time, they were to contact the plaintiffs well in advance, and not come to him just before the deadline. The request for an extension was filed on the final day. "It seems as if the government is playing a not too funny game, betting that the court will be forced to grant the additional time and hoping the irony of the timing will be overlooked," the judge wrote.

Aircraft applying fire retardant. (White House Photo)

Andy Stahl, the FSEEE's executive director, said it asked the judge to specifically hold Rey responsible. A former timber industry lobbyist, Rey has been reshaping Forest Service policies to make it easier to log on national forests. "I'm sure this order has got the government's attention," said Stahl. "I think they have to take a hard look at their 100-year war against wildfire and explore alternatives that will allow us to live with fire, and that is what they don't want us to do."

Stahl said the Forest Service appears to be immune legally from fines, but not from jail time to pressure them to complete the environmental review. "You can throw them in jail to coerce future good behavior," Stahl said.

Source: Jeff Barnard, AP/*San Francisco Chronicle* online, 8/20/07; and *Greenwire*, 8/21/07

Fired Whistleblower Sues Forest Service

Former Forest Service employee Doug Parker has sued the federal government for wrongful termination, saying it fired him because he blew the whistle on pesticide misuse across the Southwest. Parker, who filed the suit in U.S. District Court for the District of New Mexico, was the pesticide coordinator and assistant director of forestry health for the agency's Southwestern region.

The Forest Service fired Parker in 2005 after he submitted a whistleblower complaint to the Agriculture Department expressing concern over excessive chemical use by the Forest Service. Parker accused the Forest Service of ignoring its own rules when spraying pesticides and weed-killers. He said the agency sprayed insecticides near campgrounds in the Apache-Sitgreaves National Forest without determining the risk to campers and visitors.

"I have a fierce resolve to see this through, to correct what they did to me," said Parker, who worked for the agency for nearly four decades and is asking for his job back. Parker's lawsuit asks the court to reverse a decision reached by the federal government's Merit Systems Protection Board in June that upheld his firing. He said his squabbles with his supervisor and subsequent suspensions over "minor formatting issues" in his reports were really reprisals for speaking out about the pesticide problem.

Art Morrison, spokesman for the Forest Service in Albuquerque, said the Agriculture Department could not comment and has not yet received a copy of Parker's lawsuit.

Sources: Susan Montoya Bryan, *AP/San Francisco Chronicle*, 8/8/07; and *Greenwire*, 8/9/07

Forest Service Employees Say Agency is Adrift

Forest Service employees are confused about the future direction of the agency, upset with the increased emphasis on firefighting and have a dim view of the political leadership in Washington, according to an agency survey. *Dialogos*, a Cambridge, MA-based consulting firm,

interviewed more than 400 Forest Service employees under condition of anonymity, and their responses were brutally blunt. "Are we a timber organization? Are we a fire organization? Are we recreation-based? Are we just cleaning toilets now? I mean, what are we doing," one employee said.

As the Forest Service attempts to improve its safety record, fight wildfires and reform its bureaucracy, employees are stuck in the middle, *Dialogos* found. "The agency is experiencing confusion and drift in its central identity and direction, and ambiguity in the way it allocates power and responsibility," the report says. "Together these are leading people to be both unsure of where they stand, and unsure of where the agency is heading."

Dialogos has a $987,000 contract that runs through September 2008, said Forest Service spokeswoman Allison Stewart. "Safety is our number one priority and we've been having issues with that in recent years," she said. "We thought maybe we need some external help to look at ourselves differently." Former Chief Dale Bosworth last year directed the agency's national safety council to examine Forest Service culture and ways of doing business that could threaten the health and lives of employees.

As of the first quarter of 2007, 63 Forest Service employees have died in work-related accidents since 1998, compared with 24 in the National Park Service and 13 in the Bureau of Land Management. "We cover our asses and put up banners for safety," an employee told *Dialogos*. Most notably, employees joined members of Congress in expressing concern that wildfires have taken over the Forest Service. Fire-related costs now account for nearly half of the Forest Service's annual budget, and employees said the agency spends more time and resources related to wildfires than managing forests. They described firefighting as a burden and said it is unfair the Forest Service has to fight fires for other federal and state agencies.

"We have no mission," one employee said. "We take care of resources, but have no money for campgrounds. We are not the Forest Service anymore; we are the Fire Suppression Service." Even if they know their mission, employees said the agency's culture is not welcoming, as they fear ridicule or punishment for raising unpopular topics or questioning superiors.

"Individuals that raise difficult issues can be accused of being negative and subsequently feel their input is not welcome," *Dialogos* wrote. "They may even get ejected from the system. Employees do not feel safe to speak up in such a climate, adding to the perception of suppression."

Employee fears are understandable as the agency undergoes reorganization efforts, *Dialogos* wrote. "Currently it is in a state of 'change and redefinition.' Whenever this occurs in any organization there will be fear and trepidation, holding on to the past because the future is uncertain."

Forest Service Chief Gail Kimbell said the *Dialogos* report "is not easy for most of us to hear" but urged senior officials to distribute and discuss the findings in a June memo. "Perhaps most painfully, our can-do mindset is diluting our effectiveness, overtaxing our workforce and resources, and contributing directly to fatalities and injuries," Kimbell wrote. "Every time we say 'that rule does not apply to me,' we are exacerbating operational challenges that put our coworkers and the Forest Service itself at risk. As Einstein once noted, 'Insanity is doing the same thing and expecting different results.' Our culture creates the results we get; we cannot expect different results until we do the hard work to change it."

Kimbell has an uphill battle, as employees blasted initiatives spearheaded by the Washington headquarters. "There are so many initiatives now, I ignore most of them unless they manifest or actually affect me," one employee told *Dialogos*. Others questioned whether there will be enough money to implement any changes.

Aside from the safety culture program, major initiatives at the Forest Service include efforts to review the structure of regional offices, centralize budget and finance offices, enhance diversity of workforce and visitors, and "identifying foundational principles" to ensure a resilient and adaptive agency in the future.

Unlike the leaders of most other land-management agencies, the Forest Service chief does not need Senate confirmation, although he or she serves at the pleasure of the administration. Employees seem immune to the change at the top and expressed a sense the chief's role is too political and the Washington office is heading in a different direction from field offices.

Andy Stahl, executive director of the *Forest Service Employees for Environmental Ethics*, said outside pressure on the agency has increased since the mid-1980s when the Reagan administration attempted to boost logging levels. "Ever since, there has been a battle between the foresters and the administration of the day, as each successive administration has attempted to solve what they see as political problems, but Forest Service professionals see as technical problems," Stahl said.

The problems *Dialogos* outlined will continue unless a new political consensus regarding national forest management emerges, Stahl said, but that does not appear likely anytime soon. "There are so many reorganizations, this [safety initiative] is another one," an employee said. "Each chief has their own — I suppose safety is Gail's initiative."

Stahl said Kimbell has failed to get employees' attention, in contrast with previous chiefs such as Mike Dombeck, who had a specific vision for national forests, or Bosworth, who had his clear, if not exactly upbeat "Four Threats" mantra. Dave Iverson, a Forest Service economist who posted the report on the *Adaptive Forest Management* blog, said he hopes the report produces some changes in the agency culture. "They made some pretty telling points about the Forest Service culture that should be addressed by any transformation effort that's under way or should be under way," Iverson said.

Source: Dan Berman, *Greenwire*, 9/5/07

Gene Mutation Turned West Nile Virus Into Killer Disease

A gene mutation that appears to be responsible for changing relatively mild forms of the West Nile virus into a highly virulent and deadly disease in American crows has been identified by U.S. government and university scientists. Because it is susceptible to the West Nile virus, the American crow has served as the major sentinel species, playing an important role in alerting scientists and health professionals to the movement of the disease across North America.

Studies have found that deaths of American crows due to West Nile virus are

associated with higher rates of infection among mosquito populations and clusters of the disease in humans. This year to date 444 people have been stricken with West Nile virus, and 15 of them have died.

"The findings from this study highlight the potential for viruses like West Nile to rapidly adapt to changing environments when introduced to new geographic regions," said Aaron Brault, a virologist at the *Center for Vectorborne Diseases* in the Department of Pathology, Microbiology and Immunology of the University of California-Davis School of Veterinary Medicine.

"The study also suggests that the genetic mutations that create such adaptive changes may result in viral strains that have unexpected symptoms and patterns of transmission," Brault said. West Nile virus, which is passed back and forth between birds and mosquitoes and transmitted to humans via mosquito bites, was first identified in 1937 in Uganda. Although it was recognized as a cause of severe encephalitis, inflammation of the brain, meningitis, and inflammation of the spinal cord during a 1957 outbreak in Israel, the virus has been associated with mild infections accompanied by fevers in humans in Africa and the Middle East.

In 1999, the virus was first recognized in North America and has since been reported in humans, birds, horses and mosquitoes in Canada and in all of the lower 48 US states. Although scientists and health professionals have described how West Nile virus spreads through both human and animal populations in North America, it has been unclear how the virus causes such serious disease in birds, particularly the American crow.

To find out, the research team looked to the genetic makeup of the virus. They analyzed the evolutionary relationships of the West Nile virus genomes, or entire collections of genes, for 21 different strains of West Nile viruses that had been sampled globally, including strains from North America. Analysis of genetic patterns indicated a disproportionate rate of change at a particular amino acid within one of the viral genes.

Onto this genome "tree" for the various strains of West Nile virus, the scientists mapped the mutational changes in this same gene region. They found that the same amino acid change had occurred three times and that each time the resulting virus had been associated with human disease outbreaks. "It appears that the naturally occurring changes in the amino acids at this particular gene site have played an important role in increasing the virulence of West Nile virus in birds before it appeared in North America," Brault said.

"These data indicate how much West Nile virus relies on replicating to high levels in birds for efficient transmission of the virus, potentially leading to human disease outbreaks," he said. The study is reported in the current issue of the journal "*Nature Genetics*." Funding for the study was provided by the *Centers for Disease Control and Prevention*, the *National Institutes of Health* and the *Pacific Southwest Regional Center for Excellence*.

Source: *Environmental News Service*, 8/20/07

Humans, Not Just Fish, Impacted by Endocrine Disrupters

Twice as many girls as boys are being born in some Arctic villages because of high levels of man-made chemicals in the blood of pregnant women, according to scientists from the *Arctic Monitoring and Assessment Programme* (AMAP). The scientists, who say the findings could explain the recent excess of girl babies across much of the northern hemisphere, are widening their investigation across the most acutely affected communities in Russia, Greenland and Canada to try to discover the size of the imbalance in Inuit communities of the far north

In the communities of Greenland and eastern Russia monitored so far, the ratio was found to be two girls to one boy. In one village in Greenland only girls have been born. The scientists measured the man-made chemicals in women's blood that mimic human hormones and concluded that they were capable of triggering changes in the sex of unborn children in the first three weeks of gestation. The chemicals are carried in the mother's bloodstream through the placenta to the foetus, switching hormones to create girl children.

Lars-Otto Reierson, executive secretary for AMAP, said: "We knew that the levels of man-made chemicals were accumulating in the food chain, and that seals, whales and particularly polar bears were getting a dose a million times higher than that existing in plankton, and that this could be toxic to humans who ate these higher animals. What was shocking was that they were also able to change the sex of children before birth."

The sex balance of the human race — historically a slight excess of boys over girls — has recently begun to change. A paper published in the US *National Institute of Environmental Health Sciences* earlier this year said that in Japan and the US there were 250,000 boys fewer than would have been expected had the sex ratio existing in 1970 remained unchanged. The paper was unable to pin down a cause for the new excess of girls over boys.

The Arctic scientists have discovered that many of the babies born in Russia are premature and the boys are far smaller than girls. Possible links between the pollutants and high infant mortality in the first year of life is also being investigated. Scientists believe a number of man-made chemicals used in electrical equipment from generators, televisions and computers that mimic human hormones are implicated. They are carried by winds and rivers to the Arctic where they accumulate in the food chain and in the bloodstreams of the largely meat- and fish-eating Inuit communities.

The first results of the survey were disclosed at a symposium of religious, scientific and environmental leaders in Greenland's capital, Nuuk, in mid September, organized by the Patriarch of the Orthodox Church, Bartholomew I, which is looking at the effects of environmental pollution on the Arctic. Dr. Reierson said the accumulation of DDT, PCBs, flame-retardants and other endocrine disrupters has been known for some time and young women had been advised to avoid eating some Arctic animals to avoid excess contamination and possible damage to their unborn children.

Dr. Reierson, said blood samples from pregnant women were subsequently matched with the sex of their baby. Women with elevated levels of PCBs in their blood above two to four micrograms per litre and upwards were checked in three northern peninsulas in Russia's far east — the Kola, Taimyr and Chukotka — plus the Pechora River Basin. To check the results the survey was widened and

further communities, including those on Commodore Island, were investigated. The results were now in for 480 families and the ratio remained the same.

He said full results for the widening of the survey would not be published until next year but preliminary results for Greenland showed the same 2:1 ratio in the north. Aqqaluk Lynge, the former chairman of the *Inuit Circumpolar Conference* who hails from Greenland, said: "This is a disaster, especially for some 1,500 people who make up the Inuit nations in the far north east of Russia. "Here in the north of Greenland, in the villages near the Thule American base, only girl babies are being born to Inuit families". The problem is acute in the north and east of Greenland where people still have the traditional diet.

"This has become a critical question of people's survival, but few governments want to talk about the problem of hormone mimickers because it means thinking about the chemicals you use. I think they need to be tested much more stringently before they are allowed on the market," he said.

In past issues of *River Crossings* we have discussed the problem of sex reversal in fish in locations as widely separated geographically as California, Minnesota and West Virginia leading one to believe that this is a nationwide crisis, at least for fish.

Source: Paul Brown, *The (London) Guardian*, 9/12/07

Hunting and Fishing Decline Concerns

The number of hunters age 16 and older declined by 10% between 1996 and 2006, according to the U.S. Fish and Wildlife Service (FWS). The drop was most acute in New England , the Rocky Mountains and the Pacific states. Primary reasons for the decline, experts say, are the loss of hunting land to urbanization plus a perception by many families that they cannot afford the time or costs that hunting entails. Animal-welfare activists note that the trend coincides with a 13% increase in wildlife watching since 1996. But hunters and state wildlife agencies, as they prepare for the fall hunting season, say the drop is worrisome.

Meanwhile, the number of Americans who fish has also dropped sharply — down 15%, from 35.2 million in 1996 to 30 million in 2006, according to the FWS's national survey. Most state wildlife agencies rely on hunting and fishing license fees for the bulk of their revenues.

Now, President George W. Bush has issued an Executive Order (in late August) directing federal land management agencies to encourage hunting on public lands. The Order directs the Department of the Interior and the Department of Agriculture, among others, to "evaluate the effect of agency actions on trends in hunting participation and, where appropriate to address declining trends, implement actions that expand and enhance hunting opportunities for the public."

Agencies must consider the economic and recreational values of hunting in agency actions, and they must consider hunting in wildlife management planning. Federal agencies are directed to work with state governments "to foster healthy and productive populations of game species and appropriate opportunities for the public to hunt those species." The agencies are ordered to take into account planning efforts such as State Wildlife Action Plans, the North American Waterfowl Management Plan, and other range-wide management plans for big game and upland game birds.

They are ordered to seek the advice of state and tribal fish and wildlife agencies, and consult with the 12 member *Sporting Conservation Council*, a federal advisory committee for the sporting and conservation community with members from the *National Rifle Association*, *Safari Club International* and other big game hunting and game bird hunting organizations.

The chairman of the White House Council on Environmental Quality, CEQ, is ordered to organize a White House Conference on North American Wildlife Policy that will create a comprehensive Recreational Hunting and Wildlife Conservation Plan that sets forth a 10 year agenda for fulfilling these goals. Bush ordered the "appropriate Federal agencies ... in consultation with the *Sporting Conservation Council*, and in cooperation with State and tribal fish and wildlife agencies" to consult on the hunting plan which must be issued no later than one year after the conference concludes.

While the order does not overturn any conservation laws, it establishes a preference for hunting at the expense of all other activities in the administration of federal lands, according to *Public Employees for Environmental Responsibility*, PEER, a nationwide association of government workers in natural resources agencies. "This is political meddling posing as a conservation policy," said PEER Executive Director Jeff Ruch. "This order reads like it was written by a lobbyist."

No such plan was recommended for fishing on public lands.

Source: *CQ Green Sheets*, 9/4/07; and *Environmental News Service*, 8/20/07

Federal Fish Habitat Stamp?

The National Fish Habitat Initiative (NFHI) seems to be moving right along with an overall Plan being developed, and several separate watershed initiatives underway. The question now is where will the funding be found for implementation — federal appropriations, state funds, private partners, voluntary contributions — no one really knows.

So at a recent informal gathering of natural resource managers, this topic came up, and thoughts turned to the manner in which migratory waterfowl habitat projects are managed and funded. Obviously, numerous funding sources are used for this important work, but one significant funding source is the Federal Migratory Waterfowl Stamp. The Stamp is paid for by migratory waterfowl hunters, collectors, and a number of folks who just want to contribute to the cause by buying the stamp. It has been a very successful program and most of the funds generated go directly to protecting and managing waterfowl habitat throughout North America.

So what about such a stamp for helping to fund the NFHI? Many fish species (especially those in big rivers) are highly mobile, don't recognize state lines, and in some cases travel across several state lines or jurisdictions during their lifetimes. We have come to call these species interjurisdictional fish and they formed the basis for the need to organize MICRA in the late 1980s. This is especially true for the paddlefish, which was petitioned for listing under the Endangered Species Act at that time.

Like migratory waterfowl, these fish fall in a zone where no one management entity can claim full jurisdiction over their management or harvest, and so, some form of shared management and funding is needed to provide for habitat restoration and management. But even fish that do fall within one management entity's jurisdiction suffer from habitat degradation and are also in need of funding to improve and maintain important habitats. Potential projects in need of funding include:

- Dam removal/fish passage,
- Riparian restoration,
- Land acquisition for public access,
- Conservation easements,
- Public access easements,
- General habitat restorations for fish and mussels,
- Etc.

A Federal Fish Habitat Stamp could provide the opportunity for fishermen and the general public to contribute directly to habitat management. Such a stamp could work like this:

- The stamp would be required for anglers to go along with their fishing licenses.
- Like the waterfowl stamp program one stamp could be used nationwide.
- The U.S. Fish and Wildlife Service (FWS), potential manager of the program, would work with the states to sell the stamps.
- The FWS would give each state a flat percentage (e.g. 20-25%) of the total proceeds in each state up front, and the remainder of the funds would be put into an account that could be distributed in any number of ways but should be allocated based on needs/priorities.
- States would be required to spend ~90% of their initial funding for on-the-ground habitat restoration and/or acquisition.
- The federal government would be required to spend ~90% of its unallocated funds (i.e. those funds not allocated up front to the states) on habitat restoration/ acquisition, similar to the federal waterfowl stamp program.

Such a program could give the NFHI and its habitat projects a huge boost. The Federal Waterfowl Stamp Program brings in approximately $25,000,000/year with a $15 stamp. But a Federal Fish Habitat Stamp wouldn't need to be nearly that expensive.

Based on figures from the FWS' *2001 National Survey of Fishing, Hunting, and Wildlife- Associated Recreation*, for the number of fishers in the US, a $1 to $5 fish habitat stamp would gross more than $34 million to $170 million/year! A $1 to $5 add on to the expense of a fishing license might seem like a lot of money to some, but to put this into perspective, licensed anglers in 2001 spent approximately $35.6 Billion on angling-related expenses. A $5 stamp would equate to an overall increase in total expenditures of less than 0.5%, creating an average increase of only $0.32/ angling day for the average licensed angler in the U.S.

Considering the cost of even a gallon of gas, let alone a boat, who would not be willing to pay an extra $0.32 every time they went fishing with the knowledge that this expenditure was going right back into improving the fishing experience by protecting and improving fish habitats?

While no one (certainly not MICRA) has officially proposed such a stamp, it is something worth thinking about that we thought worthy of tossing on the table for discussion purposes.

Climate Change Update

The annual average temperature in the US last year was 2.1 ºF above the average temperature of the 20th century, the National Oceanic and Atmospheric Administration (NOAA) said in a report, published in the journal *Geophysical Research* in late August. Scientists at the agency said that greenhouse gas (GHG) emissions, rather than weather events like El Niño, were primarily responsible for the higher average temperatures. And even though the hottest year on record in the US was 1934, "…global numbers show that there is no question that the last five to 10 years have been the hottest period of the last century," Gavin Schmidt NASA climatologist said.

Additionally, research shows that human activity is changing the world's precipitation patterns, bringing more rainfall to Canada, Northern Europe and Russia and drier weather to tropical and subtropical regions just north of the equator. The study published in mid July in the journal *Nature*, is the first to establish a link between climate change and rainfall. "It's the first time that we've detected in precipitation data a clear imprint of human influence on the climate system," said Francis Zwiers, one of the lead authors of the study and director of the climate research division at Environment Canada.

Many parts of the world experienced record extreme weather conditions this year such as unusual floods, heatwaves, storms and cold periods, the U.N. World Meteorological Organization (WMO) announced this summer. Preliminary observations by the agency show that global land surface temperatures in January and April reached the highest levels ever recorded for those months. In January, global land temperatures were 1.89 ºC warmer than average and they were 1.37 ºC above average in April, WMO said.

In the Arctic, sea ice has shrunk to its lowest level on record, opening up the long-sought Northwest Passage (see photo below) between Europe and Asia, the European Space Agency (ESA) said in early September. The area covered by sea ice fell to just over 1 million square miles this summer, a drop of about 380,000 square miles since the summer of 2006, according to ESA's analysis of more than 200 satellite images collected earlier in September. While the amount of ice traditionally shrinks each summer as temperatures rise, re-forming in the winter, the new data show summer ice at its lowest level since scientists began monitoring the area with satellites in 1979.

Map of Northwest Passage (NASA Image)

Overall, this year's drop in Arctic ice is "extreme," Leif Toudal Pedersen of the Danish National Space Center said in a statement released with the ESA data. "The strong reduction in just one year certainly raises flags that the ice [in summer] may disappear much sooner than expected." The ESA images also show a Northwest Passage free of ice through Alaska, northern Canada and Greenland for the first time since explorers identified it as a possible trade route more than 300 years ago.

The sea route would offer a direct route between Europe and Asia, cutting the sea trip from London to Tokyo to 9,950 miles, versus 13,000 via the Suez Canal or 14,300 miles via the Panama Canal. The new data suggest the Northwest Passage could soon become a viable shipping lane, outpacing scientists' predictions, Pedersen said. The *Intergovernmental Panel on Climate Change* has estimated the passage could open to shipping by 2070. Mark Serreze, an Arctic specialist at the National Snow and Ice Data Center (NSIDC) said. "If you asked me a couple of years ago when the Arctic could lose all of its ice, then I would have said 2100, or 2070 maybe. But now I think that 2030 is a reasonable estimate. It seems that the Arctic is going to be a very different place within our lifetimes, and certainly within our children's lifetimes", he said.

Large areas of water will open up for fisherman and easier access will be provided to new areas for oil and natural gas exploration. The melting will also likely cause an upheaval in species, bringing new predators to warmer waters and endangering those that depend on ice, the study said. NOAA oceanographer James Overland and agency meteorologist Muyin Wang based their calculations on the level of carbon dioxide (CO^2) that is in the atmosphere. "The amount of emissions we have already put out in the last 20 years will stay around for 40 to 50 years," Overland said. "I'm afraid to say that a lot of impacts we will see in the next 30 to 40 years are pretty much already established. The rate of ice loss now is faster than what was depicted. This moves the threshold up", he said.

Meanwhile, the National Academy of Sciences (NAS) said in mid September that while the Bush administration's overarching climate science research effort has helped answer basic questions about global warming, its progress is jeopardized by a lack of central budget authority and planned cuts in the number of satellites that monitor the Earth and its atmosphere. Begun in 2002, the Climate Change Science Program (CCSP) coordinates about $1.7 billion in research across 13 federal agencies. But the program, which has released only 2 of 21 planned reports on various aspects of climate science, has not adequately addressed how climate change will affect everyday life, including agricultural yields, weather patterns, and the best ways to adapt or mitigate rising temperatures, concluded the NAS panel. "Discovery science and understanding of the climate system are proceeding well, but use of that knowledge to support decision making and to manage risks and opportunities of climate change is proceeding slowly," the NAS report said.

Agencies that participate in the CCSP spend $25-$30 million per year of the program's $1.7 billion overall budget to study how climate change will affect humans, the committee noted. "There is no national assessment of [climate change] impacts on agriculture, water and health," said Veerabhadran Ramanathan, chairman of the NAS panel and an atmospheric scientist at the *Scripps Institution of Oceanography.* Another "red light" is a decrease in the number of satellites and other instruments that monitor the Earth and its atmosphere from space, Ramanathan said — echoing an earlier NAS report, released in January, that warned deep cuts to NASA and the NOAA's Earth and climate science budgets could lead to a "potential collapse of the system of environmental satellites." In 2006, more than 120 instruments were used to collect climate data — a number that is expected to drop to fewer than 80 instruments by 2010, a decline of 25% or more, Ramanathan noted. And a third problem the committee identified is the impact relatively new federal laws governing data collection and report authorship have had on the climate change program's ability to produce its current series of 21 reports.

As pointed out earlier, the CCSP has issued final versions of only two of the 21 reports it had planned to complete by 2006, a delay program managers attributed to difficulties complying with the Federal Advisory Committee Act and the Data Quality Act, said NAS panel member Maria Carmen Lemos, a policy analyst at the University of Arizona's *Udall Center for Studies of Public Policy*. "As far as we can tell, [the delay] is bureaucratic-driven," she said. Former US Global Change Research Program (USGCRP) Director Michael MacCracken said he believed the Bush administration had placed too much emphasis on "reducing uncertainties relating to the science of climate change," rather than understanding its effects on people and the environment. While at USGCRP, MacCracken presided over the production of the *2000 National Assessment of Climate Impacts* — the first and only broad government report on climate change impacts geared to local and state governments and other decisionmakers.

Meanwhile, agencies that manage the nation's parks, forests, oceans and monuments are unprepared to deal with climate change, the Government Accountability Office (GAO) report said in early September. Currently, resource managers within the Agriculture, Interior and Commerce departments have "limited guidance about whether or how" to address climate change, GAO said. "Without such guidance, their ability to address climate change and effectively manage resources is constrained." As an example, the report notes that three agencies within the Interior Department — the Bureau of Land Management, the National Park Service and the Fish and Wildlife Service — have not issued "specific guidance" to managers seeking to implement a 2001 order to include climate change in agency decisions. At the same time, there is increasing evidence of climate change in the 600 million acres of public lands and 150,000 square miles of waters managed by federal agencies — ranging from melting glaciers in Glacier National Park to rising sea levels in the Florida Keys, GAO found.

The agency prepared the 184-page report at the 2004 request of Sens. John McCain (R/AZ) and John Kerry (D/MA). "What we see is resource managers forced to deal with global warming in a piecemeal, ad hoc manner," said Kate Horner of *Friends of the Earth*. "They have neither the scientific information on a specific level or the guidance at the agency level to make long-term plans on the impacts of climate change." Representatives from the various agencies agreed that written guidance on addressing the effects of climate change is necessary but said GAO failed to include or emphasize their efforts on the issue, such as cross-government initiatives or new studies in development. Unlike NOAA and the Forest Service,

Interior Associate Deputy Secretary James Cason emphasized the lack of certainty that the cyclic weather changes represent sustained shifts in climate. "We are proceeding with careful deliberation in the face of emerging information about the likely scope, duration and nature of changes in both climate and associated ecosystem effects," Cason wrote to GAO. The GAO analysis comes less than a month after a federal judge in San Francisco ordered the Bush administration to produce a new assessment of the effects of global warming and the state of climate science.

An international security think tank said in mid September that global warming could have global security implications on the level of nuclear war if not addressed. In its annual report of the effect of world events on global security, the *International Institute for Strategic Studies* (IISS) said the threats of climate change on crop growth, sea levels and animal life could turn the world into a very dangerous place. "The most recent international moves towards combating global warming represent a recognition ... that if the emission of greenhouse gases ... is allowed to continue unchecked, the effects will be catastrophic — on the level of nuclear war," the IISS report said. "Even if the international community succeeds in adopting comprehensive and effective measures to mitigate climate change, there will still be unavoidable impacts from global warming on the environment, economies and human security." It noted places like Kenya and Sudan — where famine and drought have been the catalysts for violence and starvation — as examples on what might be in store for the rest of the planet.

Scientists from Britain's Met Office have developed a 10 year model called the *Decadal Climate Prediction System* (DePre Sys) to predict how ocean currents and human activities will affect global warming over the next decade. Their findings were published in mid August in the journal *Science* and predict that at least half of the years between 2009 and 2014 will exceed 1998's record temperatures. They said climate change would be mitigated by natural climatic variations between now and 2009, and people would not see a large change during that time period. The model's computer simulations show that from 2010 every year has at least a 50% chance of surpassing 1998's record average temperature of 14.54 °C. Temperatures are set to rise by 0.3 °C by 2014, and in the decade beyond 2014, they will increase even more, according to DePreSys. The *Hadley Centre* scientists said they hope their model will prove useful to emergency planners in government and to companies by warning of droughts and other extreme conditions a year before they occur. "The coming decade ... represents a key planning horizon for infrastructure upgrades, insurance, energy policy and business development," the study said. It is a key period in which to prepare for climate change, according to the scientists, because humans will have a few years reprieve from rising temperatures due to natural forces, like the cooling trend in eastern and southern Pacific waters.

A revolution of society on a scale never witnessed in peacetime is needed if climate change is to be tackled successfully, Bjorn Stigson, head of the Geneva-based *World Business Council for Sustainable Development* (WBCSD), warned. "It will probably get worse before it gets better before governments feel they've got the political mandate to act," he told the *Financial Times*. "We're going to have to go into some sort of crisis before it's going to be resolved. I don't think people have realised the challenge. This is more serious than what people think." "I think it's beginning to dawn on people that we are talking about such a major change in society people are saying this is tougher than what we thought," he said. "How do you change society in a radical way in a democracy so the people you want to vote for you are also going to suffer the consequences of the policies that you put in place." "I don't think we've seen that kind of a challenge in societal change happening peacefully. It's [only] happened in revolutions."

The 200 members of the WBCSD, which have a combined market cap of $6,000bn, are dismayed by politicians' lack of political will to address the issues, Mr. Stigson said. "We're very concerned by what we see and the lack of response from governments in grasping the responsibility they have in dealing with this issue," he said. "Our problem right now is that we…don't know what the policies are going to be beyond 2012. How do you take these issues into consideration when you build a new plant that's going to live for 30, 40 years, he said.

But the controversy over the reality of global climate change continues. As an example, the *British Broadcasting Company (*BBC*)* announced in early September that it has cancelled plans to air a television special on climate change called *Planet Relief* over concerns expressed by network executives that the show might breach impartiality guidelines. Senior executives began to fear that *Planet Relief* was like "campaigning" in nature and would have left the network open to charges of bias toward the environmentalist position on the issue. "It is absolutely not the BBC's job to save the planet," BBC *Newsnight* Editor Peter Barron said. "It is not the BBC's job to lead opinion or proselytize on this or any other subject," TV news head Peter Horrocks said in the *BBC News* Web site's editor's blog recently. "This decision shows a real poverty of understanding among senior BBC executives about the gravity of the situation we face," environmentalist and writer Mark Lynas said. "The only reason why this became an issue is that there is a small but vociferous group of climate 'skeptics' lobbying against taking action, so the BBC is behaving like a coward and refusing to take a more consistent stance".

Another example is at the *World Bank* where former President Paul Wolfowitz attempted to shift the organization's focus away from climate change during his tenure, according to documents made public through the *Government Accountability Project* (GAP) in mid August. Wolfowitz's behavior is indicative of a political climate at the bank that was not receptive to discussing the threat posed by global warming, the documents show. A Wolfowitz deputy attempted to tone down climate references in one of the bank's main environmental strategy papers, the bank's chief scientist, Robert Watson, said this spring. The reluctance to discuss climate change was not solely a hallmark of Wolfowitz's reign at the bank. According to GAP, which tracks censorship of debate around global warming, *World Bank* environmental specialists attempted to publish a paper on GHG emissions as early as 2002. Wolfowitz became president in 2005. "Our biggest obstacle has been that, politically, [climate change] has been very controversial," said Kristalina Georgieva, the bank's strategy and operations director for sustainable development. Even with new support for climate change research, Georgieva said it will be at least two years before the bank starts measuring the impact of fossil fuel-related projects on the planet's health.

"We are not moving fast enough," she said. "It's not possible to be moving fast enough".

And in Georgia, having heard from leading skeptics of global warming at a hearing in late August entitled "*Climate Change, Fact or Fiction*?" several Georgia legislators remain convinced that the prominence of the issue is driven by alarmism and bad science. "In the media, we hear the doom and gloom side," said state Rep. Jeff Lewis (R), chairman of the committee that held the hearing. "There is alternative information out there." The panelists included Patrick Michaels, a professor of environmental science at the University of Virginia and a senior fellow at the *Cato Institute*; and John Christy, director of the University of Alabama-Huntsville's *Earth Science System Center.* Christy argued that temperatures in Georgia and Alabama had declined over the last decade. At a meeting of the *National Conference of State Legislatures* earlier in August, Georgia was one of the eight states that voted against a resolution in support of California's right to pass stricter GHG regulations than the federal government.

Also in the courts, Justice Department attorneys argued in early August that two congressional Democrats [Sen. John Kerry (MA) and Rep. Jay Inslee (WA)] should not be allowed to challenge the Bush administration's handling of climate change science. The two had sought intervenor status in a lawsuit aimed at forcing the administration to produce an assessment of the effects of global warming and the state of climate science. At issue is the Global Change Research Act of 1990, which requires the government to prepare a scientific assessment every four years of current climate change research and effects.

The *Center for Biological Diversity*, *Greenpeace* and *Friends of the Earth* filed the suit last year in the U.S. District Court for the Northern District of California. The groups alleged that the administration violated federal law when it decided to follow its broad 2000 climate assessment with a series of 21 staggered, narrowly defined reports on climate science. Kerry and Inslee joined the legal challenge in February as friends of the court. The lawmakers are now asking Judge Sandra Armstrong for intervenor status to circumvent Justice Department arguments on standing. While the environmental groups argued in their initial complaint that "the absence of an updated national assessment results in uninformed, unwise, and ultimately legally and procedurally deficient federal agency decisionmaking," lawyers representing the administration have said the law calls for reports to be submitted to Congress and the president, not the public, and the reporting requirements are not subject to review under the Administrative Procedures Act. A ruling on the issue could come at any time.

On the positive side states continue to act. Oregon Gov. Ted Kulongoski (D) signed a measure into law in early August that will put his state at the forefront of states addressing climate change. The law aims to slash the state's GHG emissions to 75% below 1990 levels by midcentury, and allocates $180,000 for a climate change institute within the Oregon university system. Earlier this year, the governor signed legislation that requires Oregon's largest utilities to get 25% of their power from renewable sources by 2025. Arkansas Gov. Mike Beebe (D) announced 17 appointments in mid September to the newly created *Governor's Commission on Global Warming*. The commission is to study climate change and recommend solutions. Beebe's appointees include industry representatives, academics and environmentalists. In Virginia Gov. Timothy Kaine (D) announced an energy plan for the state in mid September that sets a goal of reducing GHGs by 30% by 2025 through energy conservation, nuclear power and offshore exploration of natural gas. Alaska Gov. Sarah Palin (R) created a *Climate Change Sub-Cabinet* in mid September to address climate change issues in her state. The group will consist of various state commissioners and will be chaired by the Environmental Conservation department commissioner. It will consolidate the state's knowledge about the expected effects of global warming in Alaska, recommend measures and policies to prepare communities and residents to respond to those effects and guide the state's participation in efforts to curb and respond to global warming.

Among the clergy, Pope Benedict told as many as half a million young people gathered for the Catholic Church's first eco-friendly youth rally in early September that world leaders must make courageous decisions in order to save the planet "before it is too late." Speaking at Mass in central Italy, the 80-year-old pontiff said that a "decisive 'yes' is needed in decisions to safeguard creation as well as a strong commitment to reverse tendencies that risk leading to irreversible situations of degradation". The Pope highlighted the importance of preserving water, saying it "unfortunately becomes a source of strong tensions and conflicts if it isn't shared in an equitable and peaceful manner." He asked the faithful to "pray and work for greater respect for the marvels of divine creation".

Formula One racing may introduce changes to the sport's rules in 2011 that would mandate fuel conservation measures such as smaller engines, the use of biofuels and restrictions on the use of wind tunnels, according to a recently released *International Automobile Federation* proposal.

And finally, the latest edition of the *Times Atlas* will include significant changes intended to show the effects of climate change on the world's coastlines and other landscapes, the mapmaker's head said late this summer. Cartographers working on the *Times Comprehensive Atlas of the World* (last updated in 2003) have redrawn coastlines that have eroded over times and bodies of water like Lake Chad in Africa, which is 95% smaller than it was in 1963. "We can literally see environmental disasters unfolding before our eyes," said Mick Ashworth, editor-in-chief of the atlas. "We have a real fear that in the near future, famous geographical features will disappear forever".

Sources: Deborah Zabarenko, *Reuters*, 8/28/07; Thomas H. Maugh III, *Los Angeles Times*, 8/15/07; Caroline Alphonso, *Toronto Globe and Mail*, 7/24/07; CQ Today, 9/5/07; *The (London) Guardian*, 9/5/07; Doug Struck, *Washington Post*, 9/7/07; *E&ENews PM*, 8/21/07; Juliet Eilperin, *Washington Post*, 9/6/07; *E&E Daily*, 5/4/07; *Reuters/MSNBC.com*, 9/2 and 9/12/07; Deborah Zabarenko, *Reuters/Yahoo News*, 8/9/07; John Aglionby, *Financial Times*, 9/5/07; Richard Black, *BBC News online*, 9/5/07; *Agence France-Presse*, 9/2 and 9/5/07; Andrew Gumbel, *London Independent*, 8/14/07; Salzer/Shelton, *Atlanta Journal-Constitution*, 8/22/07; Amanda Fehd, *Juneau Empire*, 9/16/07; John Lyon, *Arkansas News Bureau*, 9/8/07; Brad Cain, *AP/KGW.com*, 8/7/07; Erik Kirschbaum, *Reuters*, 7/22/07; Lauren Morello and Dan Berman, *Greenwire*, 9/6/07; Lauren Morello, *Greenwire*, 8/13, 9/13 and 9/17/07; and *Greenwire*, 7/23, 7/24, 8/8, 8/10, 8/14; 8/23; 9/4, 9/5; 9/7, 9/10, 9/13; and 9/18/07

Meetings of Interest

Dec. 9-12: 68th Midwest Fish and Wildlfie Conference, Madison, WI, www.midwest.ncd-as.org

Apr. 6-10: International Association for Landscape Ecology, U.S. Division, Madison, WI, http://www.cof.orst.edu/org/usiale/madison2008/index.htm

Apr 16-19: Association of Southeastern Biologists, Spartanburg, IL, http://www.asb.appstate.edu/meeting.php

May 12-13: American Institute of Biological Sciences, Washington DC, http://www.aibs.org/annual-meeting/

May 26-30: Society of Wetland Scientists, Washington, DC, http://www.sws.org/2008_meeting/index.html

Aug. 13-17: Short Course on Geostatistical Analysis of Environmental Data, University of Florida, Gainesville. See: http://conference.ifas.ufl.edu/soils/geostats/index.html; Contact: Jhanna Crutchfield, (352) 392-5930, Fax: (352) 392-9734, jhanna@ufl.edu

Aug. 17-21: American Fisheries Society 138th Annual Meeting, Ottawa, Ontario. Contact: Betsy Fritz, bfritz @fisheries.org, (301) 897-8616, ext. 212.

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Congressional Action Pertinent to the Mississippi River Basin

Climate Change

S. 280. Lieberman (I/CT) and 6 Co-Sponsors and **H. R. 620.** Olver (D/MA) and 17 Co-Sponsors.. Establishes a market-driven system of GHG tradeable allowances to support the deployment of new climate change-related technologies to ensure benefits to consumers from the trading in such allowances, and for other purposes.

S. 309. Sanders (I/VT) and 10 Co-Sponsors. Reduces emissions of CO_2, and for other purposes.

S. 317. Feinstein (D/CA) and Carper (D/DE). Establishes a program to regulate the emission of GHGs from electric utilities.

S. 485. Kerry (D/MA) and Snowe (R/ME). Establishes an economy-wide global warming pollution emission cap-and-trade program to assist in transitioning to new clean energy technologies, protect employees and affected communities, protect companies and consumers from significant increases in energy costs, and for other purposes.

S. 1018. Durbin (D/IL) and 2 Co-Sponsors and **H.R. 1961**. Markey (D/MA) and 7 Co-Sponsors. Addresses security risks posed by global climate change and for other purposes.

S. 1168. Alexander (R/TN) and Lieberman (I/CT). Establishes a regulatory program for sulfur dioxide, nitrogen oxides, mercury, and CO_2 emissions from the electric generating sector.

S. 1177. Carper (D/DE) and 7 Co-Sponsors. Establishes a national uniform multiple air pollutant regulatory program for the electric generating sector.

S. 1201. Sanders (I/VT) and 3 Co-Sponsors. Reduces emissions from electric power plants, and for other purposes.

S. 1321. Bingaman (D/NM) and **H. R. 2556.** Wilson (R/NM). Enhances the energy security of the U.S. by promoting biofuels, energy efficiency, and carbon capture and storage, and for other purposes.

S. 1389. Obama (D/IL) and 2 Co-Sponsors. Authorizes the National Science Foundation to establish a Climate Change Education Program.

S. 1554. Collins (R/ME) and Lieberman (I/CT). Addresses challenges relating to energy independence, air pollution, and climate change.

S. 1766. Bingaman (D/NM) and 5 Co-Sponsors. Reduces GHG emissions from the production and use of energy, and for other purposes.

H. R. 906. Udall (D/CO) and Inglis (R/SC). Promotes and coordinates global climate change research, and for other purposes.

H. R. 1590. Waxman (D/CA) and 126 Co-Sponsors. Reduces GHG emissions and protects the climate.

H. R. 2337. Rahall (D/WV). Promotes energy policy reforms and public accountability, alternative energy and efficiency, and carbon capture and climate change mitigation, and for other purposes.

H. R. 2338. Dicks (D/WA) and 2 Co-Sponsors. Establishes the policy of the Federal Government to use all practicable means and measures to assist wildlife populations in adapting to and surviving the effects of global warming, and for other purposes.

H. R. 2420. Lantos (D/CA) and 25 Co-Sponsors. Declares the U.S. policy on international climate cooperation, to promote clean and efficient energy technologies in foreign countries, and to establish the International Clean Energy Foundation.

H. R. 2701. Oberstar (D/MN) and 14 Co-Sponsors. Strengthens the Nation's energy security and mitigates the effects of climate and ensures sound water resource and natural disaster preparedness planning, and for other purposes.

H. R. 2809. Inslee (D/WA) and 17 Co-Sponsors. Ensures that the U.S. leads the world baseline in developing and manufacturing next generation energy technologies, to grow the economy, create new highly trained, highly skilled American jobs, eliminate American overdependence on foreign oil, and address the threat of global warming.

H. R. 2950. Wilson (/NM). Reduces our Nation's dependency on foreign oil by investing in clean, renewable, and alternative energy resources, promoting new emerging energy technologies, developing greater efficiency, and creating a Strategic Energy Efficiency and Renewables Reserve to invest in alternative energy, and for other purposes.

H. R. 3220 and 3221. Pelosi (D/CA) and 18 Co-Sponsors. Moves the U.S. toward greater energy independence and security, developing innovative new technologies, reducing carbon emissions, creating green jobs, protecting consumers, increasing clean renewable energy production, and modernizing our energy infrastructure.

Conservation

S. 50. Isakson (R/GA). Amends the Internal Revenue Code of 1986 to provide economic incentives for the preservation of open space and conservation of natural resources, and for other purposes.

S. 241. Wyden (D/OR) and Akaka (D/HI). Authorizes the Interior Secretary to enter into coop agreements to protect natural resources of units of the National Park System through collaborative efforts on land inside and outside of units of the National Park System.

S. 272. Coleman (R/MN). Amends P.L. 87-383 to reauthorize appropriations to promote the conservation of migratory waterfowl and to offset or prevent the serious loss of important wetland and other waterfowl habitat essential to the preservation of migratory waterfowl, and for other purposes.

S. 919. Menendez (D/NJ) and 4 Co-Sponsors. Reauthorizes USDA conservation and energy programs and certain other programs to modify the operation and administration of these programs, and for other purposes.

S. 1424. Schumer (D/NY) and 3 Co-Sponsors, and **H. R. 2419.** Peterson (D/MN). Provides for the continuation of agricultural programs through fiscal year 2013, and for other purposes.

H. R. 3036. Sarbanes (D/MD). Amends the Elementary and Secondary Education Act of 1965 providing grants that would allow states to develop environmental education in schools and help train environmental teachers who would also serve as mentors to students.

Endangered Species Act (ESA)

S. 658. Thomas (R/WY) and 4 Co-Sponsors. Improves the processes for listing, recovery planning, and delisting, and for other purposes.

S. 700. Crapo (R/ID) and 16 Co-Sponsors and **H. R. 1422.** Thompson (D/CA) and 3 Co-Sponsors. Amends the Internal Revenue Code to provide a tax credit to individuals who enter into agreements to protect the habitats of endangered and threatened species, and for other purposes.

H. R. 110. J. Davis (R/VA). Imposes limitations on wetlands mitigation activities carried out through the condemnation of private property.

H. R. 1917. Herger (R/CA). Enables Federal agencies to rescue and relocate members of any threatened species that would be taken in the course of certain reconstruction, maintenance, or repair of Federal or non-Federal man-made flood control levees.

H. R. 2530. McMorriss Rogers (R/WA) and 12 Co-Sponsors. Better informs consumers regarding costs associated with compliance for protecting endangered and threatened species.

H. R. 3459. Markey (/). Amends the ESA to require the Director of the USFWS to publish a summary statement of the scientific basis for a decision concerning the listing or de-listing of an endangered species or the designation of critical habitat, and for other purposes.

Federal Water Pollution Control Act (FWPCA) Amendments:

S. 134. Allard (R/CO) and Salazar (D/CO), **H. R. 186.** Musgrave (R/CO) and **H.R. 317.** Salazar (D/CO). Authorizes construction of the Arkansas Valley Conduit in the State of Colorado, and for other purposes.

H. R. 720. Oberstar (D/MN) and 3 Co-Sponsors. Authorizes appropriations for State water pollution control revolving funds, and for other purposes.

Invasive Species

S. 336. Durbin (D/IL) and 7 Co-Sponsors and **H. R. 553.** Biggert (R/IL) and 24 Co-Sponsors. Requires the Secretary of the Army to operate and maintain as a system the Chicago Sanitary and Ship Canal dispersal barriers.

S. 725. Levin (D/MI) and Collins (R/ME). Amends the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) to reauthorize and improve that Act.

S. 726. Levin (D/MI) and 7 Co-Sponsors. Amends the Lacey Act to prohibit the importation and shipment of certain species of carp.

S. 791. Levin (D/MI) and 6 Co-Sponsors and **H.R. 1350**. Ehlers (R/MI) and 12 Co-Sponsors. Establishes a collaborative program to protect the Great Lakes, and for other purposes.

S. 1578. Inouye (D/HI) and Stevens (R/AK). Amends the NANPCA to establish vessel ballast water management requirements, and for other purposes.

S. 1949. Reid (D/NV) and 3 Co-Sponsors. Directs the Interior Secretary to provide loans to certain organizations in certain States to address habitats and ecosystems and to address and prevent invasive species.

H. R. 83. Biggert (R/IL). Amends the Lacey Act, to add certain species of carp (black, bighead, silver and largescale silver) to the list of injurious species that are prohibited from being imported or shipped.

H. R. 260. Ehlers (R/MI). Establishes marine and freshwater research, development, and demonstration programs to support efforts to prevent, control, and eradicate invasive species, as well as to educate citizens and stakeholders and restore ecosystems.

H. R. 767. Kind (D/WI) and 12 Co-Sponsors. Protects, conserves, and restores native fish, wildlife, and their natural habitats at national wildlife refuges through cooperative, incentive-based grants to control, mitigate, and eradicate harmful nonnative species, and for other purposes.

H. R. 801. Kirk (R/IL) and 20 Co-Sponsors. Amends NANPCA to require application to all vessels equipped with ballast water tanks the requirement to carry out exchange of ballast water or alternative ballast water management methods prior to entry into any port within the Great Lakes, and for other purposes.

H.R. 889. Miller (R/MI). Amends the NANPCA to establish vessel ballast water management requirements, and for other

purposes.

H. R. 2423. LaTourette (R/OH) and 4 Co-Sponsors. Provides for the management and treatment of ballast water to prevent the introduction of nonindigenous aquatic species into coastal and inland waters of the U.S., and for other purposes.

Public Lands

H. R. 1463. Udall (D/CO) and Trancredo (R/CO). Provides for restoration activities on Federal lands under the jurisdiction of the Interior or Agriculture Depts, and for other purposes.

H. R. 1484. Tancredo (R/CO) and Udall (D/CO). Provides consistent enforcement authority to federal agencies (BLM, NPS, FWS and FS) to respond to violations of regulations regarding the management, use, and protection of public lands under their jurisdiction, and for other purposes.

Water Resources

S. 564. Feingold (D/WI) and McCain (R/AZ). Modernizes water resources planning, and for other purposes.

S. 752. Nelson (D/NE) and 3 Co-Sponsors and **H. R. 1462.** Udall (D/CO) and 4 Co-Sponsors. Authorizes the Secretary of the Interior to participate in the implementation of the Platte River Recovery Implementation Program for Endangered Species in the Central and Lower Platte River Basin and to modify the Pathfinder Dam and Reservoir.

S. 1116. Salazar (D/CO) and 3 Co-Sponsors. Facilitates the use for irrigation and other purposes water produced in connection with development of energy resources.

S. 1248. Boxer (D/CA) and **H. R. 1495.** Oberstar (D/MN) and Johnson (R/TX). Authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the U.S., and for other purposes.

H. R. 68. McIntyre (D/NC). Amends the Water Resources Development Act of 1976 to allow the Secretary of the Army to extend the period during which beach nourishment for water resources development projects may be provided.

H. R. 135. Linder (R/GA) and 5 Co-Sponsors. Establishes the 21st Century Water Commission to study and develop recommendations for a comprehensive water strategy to address future water needs.

H. R. 307. Pearce (R/NM). Imposes limitations on the authority of the Interior Secretary to claim title or other rights to water absent specific direction of law or to abrogate, injure, or otherwise impair any right to the use of any quantity of water.

H. R. 574. Whitfield (R/KY). Ensures the safety of residents and visitors to Lake Barkley, KY, improves recreation, navigation, and the economic vitality of the lake's region, and establishes a pilot program to maintain its pool elevation at 359 feet until after the first Monday in September.

H. R. 591. Musgrave (R/CO). Amends the Cache La Poudre River Corridor Act to designate a new management entity, make certain technical and conforming amendments, enhance private property protections, and for other purposes.

H. R. 1180. Udall (D/CO). Assures that development of certain Federal oil and gas resources will occur in ways that protect water resources and respect the rights of the surface owners, and for other purposes.

H. R. 2277. Lamborn (R/CO) and Tancredo (R/CO) and **H.R. 1833.** Salazar (D/CO). Authorizes the Interior Secretary to conduct a feasibility study relating to long-term water needs for the area served by the Fryingpan-Arkansas Project, CO, and for other purposes.

Source: http://www.gpoaccess.gov/bills/index.html; and http://thomas.loc.gov/cgi-bin/thomas

River Crossings

Mississippi Interstate Cooperative Resource Association
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