River Crossings

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Chairman's Comments

The Mississippi River and its tributaries have receded to normal levels and the 2011 historical flood event is behind us. Previous floods have shown us that Asian carp, particularly bigheads and silvers, successfully spawn and recruit during these events. This year's flood was more than conducive for carp reproduction, as reports have been coming in with regularity on the exceptional abundance of young-of-the-year (YOY) bighead and silver carp being seen around the basin. Additionally, "jumping" adults are now being seen in many places not previously reported. While it is too early to tell how well Asian carp populations responded to the 2011 flood pulse, indications are they have been explosive.

MICRA and the MRBP have been trying to get the word out about the seriousness of these invasive fish and what their explosive and expansive populations will mean to our native fish communities. MICRA's recent trip to Washington, DC to visit congressional offices was designed to do just that. One important thing we learned from that trip was that we must also sell our cause at the state and local congressional offices as well, so that all levels of government are informed. We must get federal dollars put into the Mississippi River Basin in order to combat Asian carp populations, as monies appropriated through the Great Lakes Restoration Initiative for carp prevention cannot be used to control Asian carp populations elsewhere.

A story recently ran in the Detroit Free Press quoted CEQ Asian Carp Director John Goss as saying: *"If people in other states want to get money to get rid of carp, they'll have to organize and get their members of Congress to come up with funding. There is no current federal budget for the rest of the states."*

Aerial view of I-29 (Iowa) north of Omaha, NE showing extent of 2011 Missouri River flooding.

The message Mr. Goss is sending is clear, we must inform Mississippi River Basin states and federal delegations that the problem is real and that if basin populations continue to expand unabated, our economically important recreational and commercial fisheries will be lost. If we continue doing nothing in the Mississippi River Basin, it's just a matter of time before Asian carp will make it into the Great Lakes ecosystems and other drainages outside the basin.

Flood Control Controversy

Lawmakers in states affected by Missouri River flooding this year are calling for a review of the U.S. Army Corps of Engineers' (Corps) "Master Manual". This document provides guidelines which attempt to balance release of reservoir water for flood control with the need to maintain water supplies, hydroelectric generation and shipping channels, including those between St. Louis and Memphis on the Mississippi River. It also dictates how reservoir releases are managed for other purposes such as wildlife and recreation.

This spring and summer the Corps released water at more than twice the volume than has ever been attempted since the six mainstem reservoirs were built some 50 years ago. These releases are projected to con-

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tinue (but at a lower rate) into the fall, only to be slowed somewhat and then continued toward the end of the year so as to make room for next year's snow melt and rainfall. All six reservoirs are physically located in the states of South Dakota, North Dakota and Montana. Flooding not only occurred in those states from backwaters impounded by the reservoir dams, but also downstream from reservoir releases in the states of Iowa, Nebraska, Kansas and Missouri where numerous levees were breached, flooding farmlands and towns as well as threatening to flood two nuclear power plants.

Record snow melt in the Rocky Mountains (more than 140 percent above average) as well as record spring rainfall led to the flooding. "We've described it as a perfect storm," said Jody Farhat, who oversees water management in the basin for the Corps' Omaha District. For more than a century, Farhat said the system has demonstrated the capacity to absorb what weather surprises nature dealt. But not this year. "This is a new data point in history," she said.

"It's a balancing act," said David Conrad, a water management consultant for the environmental group *Water Protection Network*. "For the summer, you want water as high as possible, but you want it down for the spring so you can catch runoff," he said. The Corps knew as early as January that higher-than-average snowpacks in the Rocky Mountains would likely lead to downstream flooding in the spring. But there was little they could do because the reservoirs were already drained to allow for near maximum storage capacity. Email exchanges between top Corps officials, including Farhat, revealed they were confident they could manage the flooding. But by mid-April all that had changed. One of Farhat's emails said the agency was by then "between a rock and a hard place on the Missouri River this year."

Now lawmakers are fuming over how much water they say the Corps stockpiled in the reservoirs and was forced to release this spring. "You know there's just a historic amount of water coming down the Missouri River out of the system, and it raises the questions, begs the questions, what happened," said Sen. Mike Johanns (R/NE). "How did we all the sudden end up with a situation where we have to drive twice as much water down the system for a whole summer?" "I won't draw any conclusions today other than I've already said to the Corps of Engineers," Johanns said. "I understand you're battling the waters now, but I do want to be part of the process that looks back on this and says, what did we do right and what did we do wrong?"

South Dakota Sen. Tim Johnson (D) has said it is likely Congress will hold hearings on how the Corps managed the flooding. Kansas Gov. Sam Brownback (R) called for a 9/11-type federal commission to study the river basin's flood-control policies. "I am frustrated," Brownback told *The Kansas City Star*. "It's time we talk about the impact of flooding on the Missouri River system. ... It's about human life." Rep. Sam Graves (R/MO) said he will introduce legislation to change the way the Corps manages Missouri River flows. "We are not managing the river, the river is managing us," he said.

Sen. Roy Blunt (R/MO) was careful to direct his criticism at the Master Manual, rather than at Corps leaders, who insist they have little leeway in straying from the dictates of the flood control plan. "I don't have problems with the way the Corps has been doing its job," Blunt said. "My problem is that the plan is not the right plan. It's a plan that requires holding too much water back during the winter to ensure a spring rise that, more often than not, can turn into a spring flood. We would have some level of flooding no matter what the Corps did, but their plan made it worse, not better," he said.

Likewise, Sen. Claire McCaskill (D/MO) sympathized with the Corps but called for a review of not only Missouri River water management policy but also the policy that dictated blowing up a levee to activate a spillway in her state during the Mississippi River flood. That decision swamped 136,000 acres of farmland. "I think they've had a very difficult job this year, and I think they are working very hard at it," McCaskill said of the Corps. "When this is all over, and everyone has had a chance to catch their breath, I think we really have to look at a couple of the policies — the decisions as to when and how to release water out of the reservoirs and the flooding situation and obviously the man-made destruction of levees and how those decisions are made. I think it's going to be important to do a little oversight on that."

River Crossings

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Iowa's governor Terry Branstad (R) urged his counterparts in the other three downstream states (NE, KS and MO) to withdraw from the *Missouri River Association of States and Tribes* (MORAST) and form their own group, saying that the MORAST favors upstream states. "As governor of Iowa, my duty is to constantly pursue opportunities in the best interest of this state, as such Iowa is currently evaluating whether to maintain its membership in MORAST," Branstad wrote in the April 22 letter. Branstad wrote that the Corps puts too much focus on recreational uses in upstream reservoirs. MORAST "has not represented or balanced the interests of its members, in particular the downstream states as it persists in taking a narrow focus on upstream recreational interests," Branstad wrote. The Iowa governor recommended that he and the three other downstream governors consider creating the *Missouri River Coalition of Downstream States*. A Corps spokeswoman said decisions made through MORAST about releasing water are based on 14 years of studying the river.

In December 2010, the Corps set aside 22 percent reservoir storage capacity to collect anticipated snow melt and spring rains. That capacity would be enough to store the extra water, the Corps said. But the annual runoff forecast reached more than three times what the reservoir system usually holds, and the Corps was forced to open the flood gates of the six dams, and so began the 2011 Missouri River flood. Critics contend that the Corps could have prevented the flooding by opening the flood gates sooner, but it did not because of years of demands from the public and from politicians. The public has demanded cheap electricity from the hydropower that the dams provide, the Dakotas wanted the reservoirs to stay full to entice boaters and sports fisherman and to irrigate their lands, and downstream farming interests wanted to keep the struggling Missouri River barge industry alive.

Critics also say the Corps relies too much on historical data, which predicts droughts and extreme precipitation but does little to account for events that the Corps has never experienced before. The environmental group *American Rivers* has suggested moving the levees back in areas that are less populated and moving homes out of the floodplain to allow for more flood water conveyance and storage capacity in the floodplain. But any changes are likely to draw heat from barge operators and municipal water systems that could be left without enough water by the end of the summer. "Now we have a new data point," said Brig. Gen. John McMahon, who commands the Corps division that manages the Missouri River. "Now ... we go back and ask if the flood control space is adequate. Should it be more? And if it should be more, at what cost to those other uses?"

Early this summer Corps officials rankled some floodplain farmers' attitudes by mailing them letters, asking that they consider selling land to the Corps that would be used to restore fish and wildlife habitat. Some of those letters went out on June 6, about two weeks after the Corps began releasing huge amounts of water from upstream dams. With floodwaters covering many acres of farmland, the Corps' letter was ill-timed and insensitive, said Bruce Biermann, owner of a Mound City, MO., farm and an official of the *Missouri Association of Soil and Water Conservation Districts*. "They just opened up another can of worms," Biermann said. U.S. Rep Sam Graves (R/MO), called the letter a "slap in the face" of people who are dealing with flooded property.

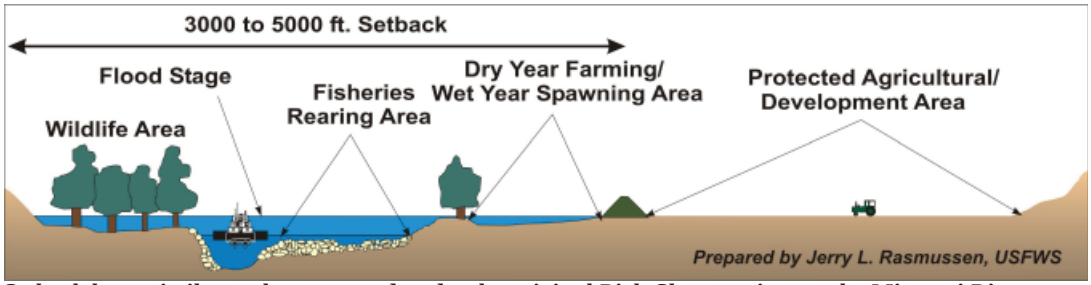
Monique Farmer, a spokeswoman for the Corps in Omaha said the agency is authorized by Congress to buy land in the Missouri River valley to rebuild wildlife habitat, and that such letters to landowners are nothing new. "We've been doing that for 18 years," Farmer said. And while describing the timing as coincidental, Corps officials acknowledge it was a mistake to send the letters when they did. Col. Tony Hoffman, commander of the Corps' Kansas City District, took responsibility for the letter.

Although Missouri River flooding is a prolonged problem for the small towns and farmers along its banks, it is likely to be a boost for several protected and endangered species, biologists say. The piping plovers and interior least terns that lay eggs on the river's sandbars will likely have more room to do so when the river recedes. The pallid sturgeon, an endangered fish, is likely to benefit as well from the increased nutrients and organic matter brought by the high water, which mimics the Missouri's flow before dams were built 60 years ago, said Greg Pavelka, a Corps wildlife biologist in South Dakota.

Pavelka said further that the high flows could leave behind more natural habitat than the area's native species have seen in decades. "The former function of the river is being restored in this one-year event," he said. "In the short term it could be detrimental, but in the long term it could be very beneficial." Kelly Crane, a Corps biologist in Omaha said after the waters recede, the sandbars the Corps has been building in the region should get more sediment and expand. "We should come out of this with an increased amount of habitat on top of sandbars we've already created," Crane said. High water levels should also benefit other native species. "High flows were a component of the natural Missouri River under which pallid sturgeon and other native species evolved," said Tim Welker, a fish biologist with the Corps in South Dakota.

Gerald Mestl a long-time river biologist for the Nebraska Game and Parks tried to put the flood in perspective with regard to the Master Manual, reservoir management and actions taken by the Corps. His article appeared on line at *Prairiefire.com* (http://prairiefirenewspaper.com/2011/09/the-missouri-river-flood-of-2011-new-report-examines-causes). In it, Mestl states that many people throughout the basin are claiming that the Corps either caused or contributed to the extent of the Missouri River flood through mismanagement or by managing the system for endangered species. They believe that the Corps could have prevented the flood by taking other management actions leading up to the flood. So in order to examine those accusations Mestl presented a time line of water supply in the Missouri River basin during 2011.

He notes that between January 1 and March 15 total flood storage available behind the Missouri River dams ranged from 91.2% to 97% of total storage possible. Releases from



Setback levee similar to that proposed under the original Pick-Sloan project on the Missouri River would significantly expand floodplain flood water conveyance and storage capacity .

the dams were scheduled to evacuate all flood storage capacity by March 1. Meanwhile snow pack in the Rocky Mountains was well above normal as was precipitation in the plains. So that by April 1 flood storage capacity in the reservoirs was down to 68%. Snow pack and precipitation continued to increase throughout the spring so that by June 1 forecasted runoff for the basin was 178% of normal increasing to 212% of normal by July 1. It appears that there is little the Corps could have done to abate flooding with reservoir storage capacity alone since it was already at almost maximum levels, he said. As MICRA has noted in the past, our rivers (and certainly the Missouri River) simply need access to more of their floodplains. And that occurs whether we like it or not at great public expense when levees are breached.

When the Missouri River flood control project was first proposed under the Pick-Sloan Plan of the 1940's, maintenance of a larger floodplain was included through the use of setback levees (see figure on page 3). Setback levees are designed to give the river the breathing room it needs during major runoff events such as we have experienced this spring. Unfortunately, those levees were not included in the final project because of objections from agriculture and other interests who wanted to farm the floodplain right up to the edge of the river. Now these same interests blame the Corps, and the environmental and recreational interests that have been built into the project, for a problem that their own interests largely created through the building of levees right up to the river's edge (see graphics in the figure below).

Mestl addressed some of the environmental issues in his article as well. He makes the following conclusions:

• The construction of chutes, backwaters, emergent sandbars and shallow water habitat have not contributed to the flood but in most cases actually increased flood storage capacity of the system resulting in reduced flood heights.

• We found no evidence that any management actions were taken for least terns, piping plovers or pallid sturgeon during 2011. When enacted, all fish and wildlife management actions for least terns, piping plovers or pallid sturgeon are dependent on water supply and not on the storage of water for those actions. All scheduled actions were cancelled due to the record runoff and therefore did not contribute to the magnitude, timing or duration of the flood.

When politicians and decision makers evaluate flooding issues later this year they need not blame endangered species and fish and wildlife management for the problem. They need to look closer at how the river's natural floodplain was reduced by development (see figure on this page) and carefully evaluate the use of setback levees (see figure on previous page) as recommended by the original Pick-Sloan plan to solve future flooding problems. Set back levees alone would go a long way toward addressing most of the conflicting issues on many of our rivers.

Graphics and photos showing how the wide natural Missouri River floodplain at Indian Cave Bend, NE was converted to farmland over a 40 year period. Adjacent landowners claimed the newly formed land, cleared it, farmed it and eventually leveed it right up to the river's edge, eliminating the flood conveyance and storage capacity of the natural floodplain. Flood waters formerly passed through natural areas largely unnoticed, but now damage human developed areas at great public expense following each major flood event.

The cost of this year's flooding alone has been estimated at $2.65 billion — $79 million fighting the flood and $2 billion to restore the existing system of levees, including $800 million in immediate repairs to its 93 most-at-risk areas. Additionally, shippers have been pressing the Corps to spend $95 million to dredge the lower Mississippi to clear shipping channels and harbors filled in by silt that was carried down river by the floods. Meanwhile, the Corps' budget for the Mississippi Valley for this fiscal year is only $210 million. The additional money needed for this work would have to come from Congress or by moving money from other Corps projects. And while it's unclear whether the necessary funding will come through, it is certain that the work won't be done in time to protect some areas from even average flooding next year. "We may have a flood of less significance having catastrophic impacts until we get this system back together," said Maj. Gen. Michael Walsh, commander of the Corps for the Mississippi Valley.

Meanwhile on the Upper Mississippi River, a Corps plan to improve levies north of St. Louis and create spillways in three Missouri counties is causing consternation among local politicians and residents. "The people in our three counties are accustomed to taking in floodwater — it happens every time the water comes down," Pike County Clerk Bob Kirkpatrick said. "But this is going to be shared. We're not going to take the flooding while people across the river have

their fields and their towns protected." The proposal, known as "Plan H," is an attempt to deal with major floods in the northern reaches of the Mississippi River, which has less flood-protection infrastructure than the southern portion. The plan has been in the works since 1999 when Congress asked the Corps to come up with proposals to reduce flood damage in the upper Mississippi River region.

The upper portion of the river has about 140 levees, most of which would be raised under Plan H. Though the plan has influential backers, including the river commissions and agricultural and political interests, the Corps says the $4 billion proposal will have a low return on investment. "It doesn't make much economic sense to continue this pattern where we allow things to flood, then repair, then rebuild," *Upper Mississippi, Illinois and Missouri River Association* executive director Kim Robinson said, citing billions of dollars in damage from major floods on the upper Mississippi in 1993, 1995 and 2008. "You'd be money ahead to fix the problem on the front end." Many details are yet to be worked out, and Mike Petersen, spokesman for the Corps office in St. Louis said actual implementation would still be years away. Again, here is an example where setback levees are needed.

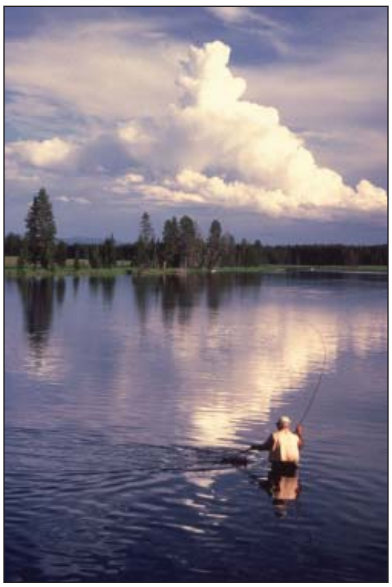
In a mid-August Op ed in the *Memphis Commercial Appeal*, Mark Davis, senior research fellow and director of the *Institute on Water Resources Law and Policy* at Tulane Law School in New Orleans made a plea to improve flood control and other river management issues. He said, "…we need to develop a "water ethic" akin to ecologist Aldo Leopold's landmark land ethic of an earlier generation to guide our understanding and uses of water in general and rivers in particular. These things won't make conflicts over water go away, but they will help to ensure that we resolve conflicts wisely and that we do not sacrifice long-term sustainability at the altar of short-term expedience".

To these ends, planners would be wise to review the Galloway Report prepared by the Clinton Administration White House in the aftermath of the 1993 floods. Careful study and recommendations for addressing floodplain management issues are provided by that document. There is no need to "reinvent the wheel" after this year's flooding.

Sources: Dave Helling and Scott Canon, *Kansas City Star*, 7/2/11; Jonathan Ellis and Cody Winchester, *Sioux Falls Argus Leader/ Des Moines Register*, 7/24/22; Andrew J. Nelson, *Omaha World-Herald*, 7/6/11; Mike Glover, *AP/San Francisco Chronicle*, 7/7/11; James MacPherson, *AP/Yahoo News*, 6/6/11; Joe Barrett, *Wall Street Journal*, 6/14/11; Jack Nicas and Joe Barrett, *Wall Street Journal*, 8/22/11; Jim Salter, *AP/San Francisco Chronicle*, 8/12/11; Mark Davis, (*Memphis) Commercial Appeal*, 8/11/11; Paul Quinlan, *Greenwire*, 6/17/11; and *Greenwire*, 6/7, 6/14, 7/5, 7/8, 7/25 and 8/22/11

Yellowstone River Oil Spill

An estimated 1,000 barrels (42,000 gallons) of oil leaked into the pristine Yellowstone River, the longest free-flowing river in the lower 48 states on July 1. The Pipeline and Hazardous Materials Safety Administration (PHMSA), the nation's senior pipeline safety regulator, told Congress that it will take several months to investigate the cause of *Exxon Mobil Corp's Silvertip Pipeline* spill, which occurred just west of Billings, MT. Regulators said oil from the spill was found at least 240 miles downstream from the spill site.



Fly fishing on the Yellowstone River (Greater Yellowstone Coalition Photo)

Montana officials were concerned that the pipeline may have been carrying a more corrosive and abrasive type of oil than they were aware of. The pipeline was supposed to carry only "sweet" crude oil with low-sulfur contents. But *Exxon* admitted that the pipeline at times had carried crude from the oil sands of Alberta, Canada. Oil from Alberta's oil sands is more corrosive and more abrasive than the Wyoming oil that the pipeline was supposed to be carrying, potentially leading to increased wear and tear on the pipe. The oil sand crude is also heavier and has the potential to carry more heavy metals, like lead. An *Exxon* spokesman said that the oil flowing through the pipeline at the time of the rupture originated in Wyoming and not in Canada, but the fact that different types of oil flowed through the pipeline designated only for sweet crude is still troubling for officials.

"If the question is, did we know it was carrying tar sands oil? Hell, no," head of the Montana Department of Environmental Quality (MTDEQ) Richard Opper said. "If companies are changing the kinds of materials in pipelines to mixes that make them more likely they will leak or rupture, that raises huge concerns." "Since they dumped that oil into the river the state owns and manages, since they have spread oil in a film across 150 separate properties, since the film is over fishing access sites and state parks, we thought it would be appropriate to know what it is," said Montana Gov. Brian Schweitzer (D), a trained soil scientist.

Exxon says that it will restore the river to its prior condition and has apologized for the spill. But both U.S. EPA and the MTDEQ will need to give their approval before the sites can officially be designated as clean. Getting the state's stamp of approval will be the most difficult, EPA officials said, since the state requires that cleanup continues until the efforts would do more harm than good to the environment. Montana is one of a handful of states whose constitution guarantees a clean environment to its citizens.

Fortunately, because of high turbulent waters few birds were found affected by the spill, but wildlife advocates said they remain concerned that oil deposits could cause long-term impacts to fish species including goldeye, sauger and channel catfish that frequent the river's calmer side channels, where the crude appeared to collect, as well as the rare pallid sturgeon found further downstream. "These are places where young fish rear," said Bruce Farling , executive director of the Montana chapter of *Trout Unlimited*. The oil threatens eggs that fish lay in the gravel as well as young fish that have recently hatched. The crude could smother eggs, suffocate young fish or cover the plankton that fish eat, poisoning them, Farling said.

"The entire food chain will be impacted in this important ecosystem," *National Wildlife Federation* (NWF) regional campaign coordinator Jennifer Pelej said. While the river's rapid flow has broken most of the slick into streamers and smaller patches, the fast-moving water has also made it difficult to locate much of the oil that has settled. We can only

wait and see," Farling said. While the spill occurred downstream of the river's prized trout fishery, the oil threatens an important transitional habitat between cold and warm waters", Farling said.

Much of the spill's immediate impact was felt by landowners along the 20-mile stretch of river immediately downstream of Laurel, MT, the site of the spill. The *Billings Gazette* in early July reported that some landowners on the river complained of headaches and nausea, and some sought hospital care. Oil coating the grass and ground in some areas forced ranchers to relocate livestock for fear that they could eat contaminated forage, said Bill Kennedy, Yellowstone County Commissioner.

Clean up costs will likely exceed $42 million. According to documents obtained by the *Associated Press* in late August *Exxon* had already paid out $40 million for emergency response work and $2.5 million for damage to public and private property. *Exxon* has also announced a revised timetable for its cleanup efforts, extending for several more months. Around 1,000 people were working on the cleanup effort, which was initially scheduled to be completed by Sept. 9. As of late August, investigators were unable to access the rupture site beneath the river and have yet to announce what caused the spill. Officials in Laurel last year questioned whether riverbank erosion posed a threat to the pipeline. *Exxon Mobil* said the pipeline was at least 12 feet beneath the Yellowstone River, according to documents from the U.S. Department of Transportation (DOT), which oversees pipelines.

Regulators warned pipeline operators downstream along the swollen Missouri River that they too could soon deal with oil leaks. In North Dakota authorities found scouring about 30 feet deep in eight sections of the Missouri River near Bismarck. Downstream, at least 23 pipelines are no more than 20 feet below the riverbed. In Iowa a pipeline owned by the *Enterprise Products Partners* did burst spilling 3,300 barrels of natural gasoline, a gasoline additive, into the river, and the pipeline was buried 20 feet beneath the normal river bed. Fortunately, the volatile gasoline dissipated quickly with no evidence of a spill seen. "Whatever amount was released from the pipe either dissipated very quickly in the water or rose to the surface and quickly evaporated," said EPA spokesman Chris Whitley.

According to federal rules, pipelines need only be 4 feet beneath the riverbed — a rule experts now feel is short-sighted. "In some cases, you don't know if something's endangered until it breaks," said David Williams, a river mechanics scholar who has designed several pipeline river crossings. The Missouri River is underlain by sand — a material that is easier to scour than the gravel that covers the Yellowstone riverbed — but all rivers are at risk of scouring if downpours and meltwater cause them to overflow their banks. To get a grasp on the risks that exist in particular areas, pipeline companies said they were monitoring river crossings from the air and on the ground. Some operators were also using sonar scans of the waterways that intersect their pipelines.

Sources: Tom Doggett and Anna Driver, *Reuters*, 7/14/11; *AP/Atlanta Journal-Constitution*, 7/14/11; Laura Zuckerman, *Reuters*, 7/14 and 7/20/11; *AP/Washington Post*, 7/7/11; Rob Rogers, *Billings Gazette*, 7/21/11; Jack Nicas, *Wall Street Journal*, 8/4 and 8/19/11; *AP/Washington Post*, 8/22/11; Phil Taylor and Elana Schor, *Land Letter*, 7/7/11; *Land Letter*, 7/14/11; Elana Schor, *Greenwire*, 7/14/11; Phil Taylor and Elana Schor, *Greenwire*, 7/8/11; and *Greenwire*, 7/7, 7/14, 7/22, 8/4, 8/19 and 8/23/11

Pearl River Spill and Fish Kill

More than 400 workers took part in a cleanup effort on a 60-mile stretch of the Pearl River in Louisiana after a *Temple-Inland* paper mill released high concentrations of "black liquor", a waste product of paper making, into the river, killing hundreds of thousands of fish. The material essentially sucked all of the oxygen from a large section of the river, killing any and all oxygen breathing life in the water. Affected species included catfish, flounder and the federally protected Gulf sturgeon. The Pearl River forms a portion of the border between Louisiana and Mississippi.

"This was a biological problem, and not a chemical or toxic problem, which is encouraging," said Jeff Dauzat, an environmental scientist for the Louisiana Department of Environmental Quality. Even though the first signs of trouble occurred August 9, the state Department of Environmental Quality was not notified until August 13, by which time high numbers of fish carcasses were drawing media attention. "Frankly, this is the kind of behavior you would expect from an industrial plant 30 years ago," said John Lopez, acting director of the *Lake Pontchartrain Basin Foundation*. "It's not how modern plants are run in terms of their contingency planning, monitoring and their response to the public".

Tests conducted on nearby Lake Pontchartrain indicated that the pollution did not affect that water body, although the train of dead fish reached its banks, carried in by tides. Government and plant officials removed dead fish carcasses from the river system and allowed the pollutants to be flushed out to the Gulf of Mexico.

Republican Gov. Bobby Jindal said, "I made it very clear that we expect the company to clean up this mess, not only to make sure that it never happens again before they reopen the plant, but also that they've got responsibility to reverse the damage that has been done by this discharge." *Temple-Inland* CEO Doyle Simons "committed to me that they were going to do that," Jindal said. "We are going to hold them accountable to that commitment."

Sources: Katie Urbaszewski, *New Orleans Times-Picayune*, 8/17/11; Kathy Finn, *Reuters*, 8/22/11; Greenwire, 8/18 and 8/23/11

Asian Carp Issues

Minnesota Department of Natural Resources (MNDNR) officials announced in early August that silver carp eDNA had been found as far north in the Upper Mississippi River System as the dam at St. Croix Falls on the St. Croix River. The St. Croix forms a portion of the border between Minnesota and Wisconsin. Under controlled conditions (tanks) and in the field (ponds), eDNA detectability decreases with time after the removal of the species, becoming undetectable after a month in both conditions. So, at least in theory, a live fish may have been present within 30 days of detection of the eDNA. To date, no live silver carp have been caught in the river, but two bighead carp have been taken — one in 1996 and another on April 18 of this year.

Minnesota officials now plan to contract with commercial fishermen and begin using their own nets and electroshocking gear in the St. Croix to try to capture live silver carp in the same areas where eDNA tests were positive. State officials will also begin trawl netting in Lake Pepin (a large natural impoundment on the Mississippi River) as well as conducting shoreline seining in various Mississippi River backwaters. The netting will target smaller, juvenile fish.

State officials also plan to proceed with

development of a bubble or sonic barrier at the mouth of the St. Croix River at Prescott, WI, pending results of the additional carp sampling. Scientists believe such a barrier would not be a 100-percent deterrent to Asian carp, but if the populations are low, the barrier could help keep additional carp out of the river while other population control methods are developed. A recent estimate put the barrier's construction cost (for materials alone) at $7 million.

A Twin Cities-based *Asian Carp Task Force* brought together in January by National Park Service officials with the Mississippi National River and Recreation Area (MNRRA) is also planning a new round of eDNA testing in both the St. Croix and Mississippi rivers. Made up of federal, state and local partners, the task force was responsible for initiating the St Croix River eDNA testing, which cost about $17,000. "Our task is to stop or slow down these fish as far south as possible while we continue to develop technologies and techniques to slow down their spread," said Paul Labovitz, superintendent of the MNRRA.

Minnesota Gov. Mark Dayton also recently signed a bonding bill, approved by the Minnesota legislature, funding a $16 million upgrade of the Coon Rapids Dam on the Mississippi River in the Twin Cities. The dam improvements are designed to provide a permanent barrier to upstream migration of Asian carp to the upper reaches of the Mississippi River. Construction should begin in 2012.

In Wisconsin, a recent angler's catch of a bighead carp from the Wisconsin River stirred concern there. But according to John Lyons, a longtime Wisconsin Department of Natural Resources (WIDNR) fisheries researcher, no young Asian carp nor other signs of successful reproduction have been documented so far in any Wisconsin waters. Also, dams on the Wisconsin River at Prairie du Sac and on the St. Croix National Scenic Riverway at St. Croix Falls will block the fish from travelling farther inland. "The population densities are real low — the bighead and silver carp entering the Upper Mississippi are mainly strays so there really isn't a critical mass up here yet," Lyons said. "Will there ever be? And what is the critical mass? It's a big unknown," he said.

Federal attention and funding to control Asian carp has shifted in recent years from the Mississippi River Basin to the Great Lakes region as concerns grew that Asian carp from the Mississippi River system might invade the Great Lakes, Ron Benjamin, longtime WIDNR fisheries supervisor on the Upper Mississippi River said. "I hope that the recent finding will refocus some attention and funding on the Mississippi to help implement a multi-state plan to prevent the introduction of new aquatic invasive species within the basin, and to prevent those already here from expanding into unconnected ecosystems," he said. He noted that Asian carp were brought to the United States by the aquaculture industry in cooperation with federal agencies.

Downstream, in this year's Mississippi River flood zones, Asian carp populations are likely to expand dramatically as they did in the aftermath of the 1993 floods. Duane Chapman, a U.S. Geological Survey biologist and Asian carp expert, said the fish are likely to appear in places where Mississippi River floodwaters have intruded. "I think there is a very serious issue here," Chapman said. "We may now be finding them in lakes, ponds, bayous, anywhere the river water went. Those things will be full of carp now," he said. The Mississippi River's spring floods inundated an estimated 6.5 million acres along a 1,000-mile stretch of river from Cape Girardeau, MO, to the mouth of the river in Louisiana, according to U.S. Army Corps of Engineers (Corps) spokesman Bob Anderson. "That entire area could see carp spreading to formerly virgin areas," Chapman said. The Yazoo River in Mississippi and the Atchafalaya River in Louisiana could be especially vulnerable, but it will be a while before scientists know how far the fish may spread because of the flood, Chapman said. "At this point we have to wait until the flood dissipates before we can evaluate and see how bad it is."

In the Missouri River drainage, Iowa Department of Natural Resources (IADNR) personnel in August collected two bighead carp from East Lake Okoboji during routine sampling. East Okoboji is one of the state's natural Great Lakes in Northwest Iowa. It is not known for certain how bigheads got into the lake, but fisheries experts believe that flooding on the Missouri and Little Sioux rivers allowed Asian carp to pass over the Little Sioux Dam in Harrison County and the Linn Grove Dam in Buena Vista County. The two fish measured 14 and 15 inches in length.

In the Laurentian Great Lakes, eDNA test results show seven new positive detections of silver carp beyond the electrical barriers in the Chicago Area Waterway System (CAWS), according to information released online by the U.S. Army, Corps of Engineers (Corps). The results bring the total number of positive tests since 2009 to 85. The latest samples were found on June 23 in Lake Calumet, less than six miles from Lake Michigan, Michigan Attorney General Bill Schuette said. News of the findings is alarming to state officials. "We often wonder after a tragedy if there had been any warning signs that we missed," Schuette said in a statement. "We now have 85 warning signs that Asian carp are an impending tragedy for the Great Lakes. Losing the Great Lakes is not an option. We don't need any more studies. We need to act. And we need to act now," he said.

The Corps has been studying whether to close a waterway connection between the Great Lakes and Mississippi River basins, but the study report isn't due for completion until 2015. Schuette is pushing ahead with a federal lawsuit calling for a permanent ecological barrier between the Great Lakes and Mississippi River basins. But federal officials believe the electrical barriers in the CAWS are doing the job. John Goss, who oversees the Obama administration's Asian carp policy at the White House *Council on Environmental Quality* (CEQ), said that carp DNA in the water does not necessarily mean there are live carp there. The genetic markers could have come from dead fish or from bilge water picked up by boats on the other side of the barrier, which consists of three separate electric fields, he said. Technicians have implanted ultrasonic transmitters in 166 fish on both sides of the electric field to trace their movements and none have passed through, Corps spokeswoman Jacqueline Tate said. Underwater sonar cameras have recorded images of some fish approaching the barrier but none traversing it or even making the attempt, Goss said.

The Great Lakes's *Asian Carp Regional Coordinating Committee* (ACRCC) also continues to monitor the CAWS for live Asian carp. The most recent event concluded on August 4 after more than 1,066 person-hours on the water using a crew of 38 state and Federal agency biologists and commercial fishermen aboard 11 vessels. In all, 8,668 fish were collected, including large numbers of buffalo and gizzard shad, indicating that fish that share Asian carp habitat preferences were being trapped and identified. "These crews worked tirelessly during this operation using the best fishing techniques available to try to find Asian carp. The fact that none were found further supports what we have believed for some time — if there are any Asian carp in this area above the barrier,

they are there in very small numbers," said Illinois Department of Natural Resources (ILDNR) Assistant Director John Rogner. Eight previous monitoring trips to Lake Calumet since March 2011 with various agencies electrofishing and using contracted commercial fishers have identified 4,500 fish and indicated no Asian carp present.

The Obama Administration formed the ACRCC in 2009 to ensure coordinated and comprehensive action to prevent Asian carp from establishing populations in the Great Lakes. The group is led by the CEQ and includes members from the Corps, U.S. Coast Guard, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. EPA, the National Oceanic and Atmospheric Administration, U.S. Department of Transportation and all eight Great Lakes states, as well as the Great Lakes Fishery Commission, the Metropolitan Water Reclamation District of Greater Chicago, and the City of Chicago. Asian carp monitoring and response activities are Federally funded through the Great Lakes Restoration Initiative and Federal agency budgets. "All the evidence tells us that our strategy is working and there is no self-sustaining Asian carp population above the electric barriers," Goss said.

But others disagree. Closing the manmade connection between the channel, which is used for shipping, and Lake Michigan is the only real answer, said Christy Meyer, director of agricultural and clean water programs at the *Ohio Environmental Council*, and Rick Unger, president of the *Lake Erie Charter Boat Association*. "We don't have a generation to study this," Unger said. "We stand to lose Lake Erie, and Ohio cannot afford to do that. We have to stop these things." But Maj. Gen. John W. Peabody of the Corps said in a public meeting that it would be imprudent to jump to any conclusions about what the solution needs to be before having enough information, although he said the Corps would consider closing the connection.

Ray Petering, head of the Ohio Division of Wildlife's Fisheries Division said the problem isn't what's being done, it's the order in which the problem is being attacked. "We need to deal with Chicago first," Petering said. "Until that door is closed, nothing else anybody does might mean anything. To me it's a matter of prioritizing, and that is the biggest threat to the Great Lakes right now." As long as it remains open, the potential threat is large for carp to sneak through to Lake Michigan. If you close the canal, the carp have to find other ways to get through. That's not impossible, but those ways probably would be easier to seal.

In late June, Jerry Rasmussen, a retired U.S. Fish and Wildlife Service biologist who first warned of the Asian carp threat more than a decade ago; Dr. Henry Regier, a Great Lakes researcher at the University of Toronto; Dr. Richard Sparks of the *National Great Rivers Research and Education Center* in Godfrey, IL, and Dr. William Taylor a Distinguished Professor at Michigan State University published a paper in the peer-reviewed *Journal of Great Lakes Research* summarizing the threat of Asian carp to the Great Lakes. They noted that scientists have learned that Asian carp will eat *Cladophora*, a green algae that covers large chunks of Great Lakes inshore lake bottom now that zebra and quagga mussels eliminated other algae that kept *Cladophora* under control. The carp also would find plenty of food in Lake Erie, Green Bay on Lake Michigan, and Saginaw Bay on Lake Huron. As for spawning, initial research suggests a couple of dozen streams have the right water flow and oxygen levels, and there have been strong hints that given proper oxygen levels, the carp might be able to spawn in slower currents.

View of a portion of the carp fence designed to prevent Asian carp movements into the CAWS from other waterways during periods of flooding. (Phil Moy Photo)

In a press conference Taylor said: "Asian carp are going to whack the tributaries. They will change the food web and dominate our streams and near shore regions in the Great Lakes Basin." Sparks said we already have clear evidence the electrical barrier doesn't stop all the fish. A common carp fitted with a transmitter simply followed a barge over the barrier, and eDNA collected from waters upstream of the barrier indicates that some Asian carp have made it above the barrier, with open access to Lake Michigan. Rasmussen said, "The task at hand needs to be not if, but how to solve the problem." Sparks and Rasmussen noted that the electric barrier does nothing to prevent the downstream drift of fish eggs, fish larvae and other microscopic organisms that could contaminate the Mississippi River Basin with Great Lakes invasive species. In that sense, separation of the two ecosystems is more important to the Mississippi River Basin than it is to the Great Lakes. Their paper can be found on line at: http://news.msu.edu/media/documents/2011/06/12af5b94-962e-494d-bd56-ec1243212057.pdf

Marc Smith, senior policy manager for the *National Wildlife Federation's* Great Lakes office said, "The science is in, the time for talk is over. It's time to act on what the scientists are telling us and get to work protecting the Great Lakes and Mississippi River from harmful invasive species and the environmental and economic harm they bring." "This paper, along with an excellent one published by the University of Notre Dame earlier this year, shows that the science is clear: We need to take more aggressive action to stop the advance of Asian carp and other invasive species into the Great Lakes," said Thom Cmar, an attorney with the *Natural Resources Defense Council* (NRDC). "Now we need to match our policy to the science. I hope this paper will spur action to develop real solutions that will prevent further spread of invasive species through the Chicago Waterway System."

But none of this seems to have quieted the naysayers. Gary Fahnenstiel, an aquatic ecologist with the Great Lakes Environmental Research Laboratory in Muskegon, is among those who think the fear of Asian carp taking over the Great Lakes is exaggerated. He said that in Lake Michigan, quagga mussels have eaten 80% of the plankton the Asian carp would depend on for food. The mussels already have wreaked more havoc in the food chain of the lakes than the Asian carp might, he said.

Konrad Dabrowski, a professor and director of aquaculture at Ohio State University who has studied carp, believes that although carp might get into and survive in the Great Lakes, the climate is too cold and the rivers not fast enough for them to reproduce. "Asian carps pose no threat to the Great Lakes," he said. In Lake Erie, Dabrowski said, the carp might be able to grow for only six months of the year, and in chilly Lake Superior, just two months; once the water drops below 59°F, the fish will lose weight in colder months of the year because it's too cold for them to feed, and their sexual organs will atrophy. "It's highly improbable that spawning will occur," Dabrowski said, noting that some Asian carp that invaded Eu-

ropean waters have lived there for decades but never reproduced.

Gerald Smith, a retired University of Michigan professor of evolutionary ecology and author of "*Guide to Great Lakes Fishes*," also said he believes the fears about Asian carp are exaggerated. "Ninety-nine percent of the Great Lakes are too cold for these fish to succeed," he said. One study showing that the carp could survive in the Great Lakes was based on air temperature, he noted, which is not a relevant factor. In a recent podcast, he said politicians had seized on the carp threat for political gain and that the fears are not based on science.

David Jude, a larval fish expert at University of Michigan, also counts himself among the skeptics. For many reasons, including lack of food, temperatures, river conditions for spawning, he said he doesn't think Asian carp will gain a foothold in the Great Lakes. But he noted there are plenty of examples of scientists being wrong about such things, including one who predicted that pink salmon, a saltwater fish accidentally introduced to Lake Superior in the late 1950s when they were dumped into a sewer in Thunder Bay, Ontario, would never make it in the Great Lakes because the lakes are freshwater. Within 20 years, the fish had spread to all five lakes, where small populations of them are still found. "That could well be the case with Asian carp," he said. "They may do well on the food that's here and find places to spawn we never thought of."

Other scientists disagree that the lakes are too cold for the carp. A 2007 study of Asian carp's ability to survive in the Great Lakes states that in China, the fish live in waters with temperatures ranging from 39 to 82°F, feed within that temperature range and spawn in rivers with temperatures that range from 64 to 86°F. USGS's Duane Chapman said at 66°F, Asian carp eggs in his laboratory develop very well. Those temperatures are within the range of Great Lakes temperatures, scientists say. Chapman said Asian carp that get into the Great Lakes probably can survive in any of them, even cold Lake Superior, since they feed in the top few meters, which tend to be warmer, but spawning might not happen in all of them. A panel of scientists in the U.S. and Canada now is studying the question of whether the carp can survive and reproduce in each lake and its tributaries, with results due early next year.

Ongoing studies on the behavior of Asian carp also are making discoveries. For example, earlier research suggested that the carp needed fast, free-flowing rivers at least 60 miles long to spawn, so the eggs would have time to hatch as they floated in the current. Some scientists thought that would rule out all but 22 rivers in the Great Lakes Basin. But Chapman and others have found that the eggs hatch faster and the larvae are able to swim sooner than expected, so the fish might be able to spawn in rivers that are much shorter, perhaps 30 miles long.

Chapman and Ohio researcher Patrick Kocovsky have found that temperatures, water velocity, flood conditions and habitat would be sufficient for Asian carp to spawn in the Maumee River, which leads to Lake Erie. Conditions in six other rivers leading to Lake Erie, including the Huron River in Michigan, also might be favorable for spawning. They compared actual water temperatures and other conditions from 1990 to 2008 in the Maumee and Lake Erie to data from Russia and China, where the fish are native. They found that in 17 of those years, the carp could have spawned in the Maumee between June and September.

Many scientists already have said they suspect that Lake St. Clair, Saginaw Bay, several lakes leading to Lake Michigan such as White and Muskegon lakes, and Green Bay are places Asian carp might like because they are not as deep or cold as the lakes' centers and would have a good food supply. In addition to *Cladophora* algae there also is evidence the carp eat toxic blue-green algae, also common in recent years in Lake Erie, and that the fish may not digest the algae, but pass it through their guts, where an enzyme actually may make it more toxic.

Scientists do seem to agree on one thing: even if bighead and silver carp get a foothold in the Great Lakes, not all species of fish will suffer. "There will be winners and losers," Chapman said. He predicts that largemouth and smallmouth bass would not be hurt, but noted that in Germany, a European species of walleye, the zander or pike perch, nearly was wiped out after Asian carp invaded. Lakes Erie and St. Clair are famous for their walleye. Even in waters thick with carp, not every species has suffered. "In the Missouri River, there's a big catfish population that hasn't declined," Chapman said. No one is sure why, but it may be that some species can benefit by eating the young Asian carp, giving them a new food source. Anglers have reported using baby Asian carp as bait for other fish or finding them in other species' stomachs.

A study in the Illinois River, which may have more carp per mile than any other, found that two fish species that filter the same food as the Asian carp have gotten skinnier — gizzard shad and buffalo. However, that study found no effect on bluegill, largemouth bass and other sport fish, said ILDNR's John Rogner.

Still, several scientists say if there's one thing they're sure of, it's that Asian carp can be unpredictable. "I'm highly skeptical of people who tell us there's nothing to worry about," said Marc Gaden, spokesman for the *Great Lakes Fishery Commission*, whose mission since the 1950s has been to control sea lamprey. The invasive lamprey decimated some Great Lakes fish; now they cost about $20 million a year to control and will never be eradicated. "We have learned the hard way how costly invasive species can be," he said. "There is overwhelming evidence out there that gives us everything we need to know to say, 'Be on your guard, take this seriously, lose sleep over it and make sure that these things don't get into our ecosystem.'

Clark Bullard an engineering professor at the University of Illinois who serves on the board of directors of the Illinois-based *Prairie Rivers Network* and the *National Wildlife Federation* said in a *Cleveland Plain Dealer* editorial, "...Despite the looming threat, the U.S. Army Corps of Engineers remains in denial about the severity of the situation... Incredibly, the Corps continues to insist that the electric barrier is working, despite the fact that their own studies found the device doesn't stop all sizes of Asian carp. A Corps-commissioned study concluded in 2009 that Asian carp less than 5.4 inches long could breach the electric barrier....The Corps was informed again in July 2010 that smaller Asian carp could breach the electric barrier, but the agency decided not to crank up the voltage to repel the smaller fish. Instead, the Corps sat on the study for nine months, refusing to release it until *Prairie Rivers Network* and the *Natural Resources Defense Council* threatened to sue the agency....As it stands, the Corps is playing a form of biological Russian roulette with the Great Lakes... ," he said.

"The Army Corps and a number of other agencies have tried very hard to convince the public that their efforts have gotten the problem under control," NRDC's Thom Cmar said. "It's clear that there are still some (Asian carp) present in the waterway system and we need to be acting more quickly to permanently solve the problem."

In July the prestigious *American Fisheries Society* called for permanent ecological separation of the Great Lakes drainage from the Mississippi River drainage. Further, they said that the selected approach to separation should address and minimize or mitigate all impacts to the current services provided by the CAWS including commercial and recreational navigation, wastewater discharge and storm water conveyance.

Meanwhile, some commercial fishermen are abandoning Lake Michigan's because its fishery seems to be declining. Alvin Anderson recalled the days when Lake Michigan's now crystal-clear waters were a murky green — the signal of a healthy lake and the inspiration for Green Bay's name. These days, Anderson said, he can catch more fish in one day in Alaska than he can in an entire season in Milwaukee, so he plans to relocate to there with his family. "It's disappointing. ... It's even disgusting, what's been done to Lake Michigan," said Leslie Schwarz Winter, manager of *Schwarz Fish Co*. in Sheboygan, WI. "We have the world's largest supply of fresh water here, and nobody was keeping tabs on it. And now it's too late," he said.

The quagga mussel which covers almost the entire lake bottom is being blamed. The mussels filter trillions of liters of water per day eliminating the nutrients on which life-sustaining plankton thrive. Hugh Mac Isaac, a biology professor at the University of Windsor and director of the *Canadian Aquatic Invasive Species Network*, said fishermen are the victims of this invasion. "It's fair to say that the old food webs, upon which many fisheries were dependent, those food webs don't exist anymore," he said. "And it seems to me that the people reliant on the old food webs have very insecure futures, simply because the old food webs don't exist anymore." An Asian carp invasion will only compound that problem.

As for the Corps, they recently released a report identifying 40 "high-risk" species that could use the CAWS to invade the Mississippi River and Great Lakes basins. These range from fish to crustaceans to mollusks to plants. The point of the paper, according to the Corps' Gary O'Keefe, is to help his agency focus on technology to keep unwanted species from spilling between the two basins. How the Corps will do this remains to be seen. But it's clear that the electric barrier **will not** protect the Mississippi River Basin.

Sources: *MNDNR Press Release*, 8/11/11; Dejean T, Valentini A, Duparc A, Pellier-Cuit S, Pompanon F, et al. (2011) *Persistence of Environmental DNA in Freshwater Ecosystems*. PLoS ONE 6(8):e23398. doi:10.1371/journal.pone.0023398; *WIDNR News Release*, 8/11/11; *IADNR News Release*, 8/10/11; Mary Foster, *AP/Seattle Times*, 6/10/11; Detroit News, 7/21/11; *AP/Chicago Tribune*, 7/22/11; Kristina Smith Horn, *The NewsMessenger.com*, 7/8/11; Jim Morris, *Dayton Daily News*, 7/9/11; Eric Sharp, *Detroit Free Press*, 7/3/11; *Ashland Current*, 7/4/11; Tina Lam, *Detroit Free Press* 7/17/11; *Cleveland Plain Dealer*, 7/30/11; *Morning Star Publishing Company*, 7/27/11; Dan Egan, *Milwaukee Journal Sentinel*, 7/27 and 8/13/11; *ACRCC Press Release*, 8/9/11; *AP/The Wall Street Journal*, 7/21/11; *Greenwire*, 8/15 and 6/10/11

Illinois' Carp Removal Program

Jim Garvey, director of the *Fisheries and Illinois Aquaculture Center* at Southern Illinois University, runs a $3 million state program to increase Asian carp harvest and develop commercial markets. He says Asian carp, though a hard sell for human appetites in the United States, are among the most widely consumed fish in the world, with China the biggest market. "It would be silly for our country to have us spend taxpayer dollars to eradicate these things and throw them in a landfill," Garvey said. "We might as well make some money out of them."

Orion Briney, a third-generation Illinois River fisherman, agrees. While Briney hauls in up to 20,000 pounds of Asian carp six days a week, the fish industry has shrunk from a few decades ago, when hundreds of commercial fishermen fished the Illinois. But bolstered by government support, the Asian carp harvest has leapt thirty fold in the past decade, creating a new industry, attracting fishermen and entrepreneurs, and feeding people all over the world. Now, Garvey and his team are hoping to double the number of fishermen with a pilot program set to begin this fall. After as many as 25 fishermen are trained to properly catch and handle Asian carp, the state will pay cash awards to those who haul in a certain amount.

"We've been ramping up for years," said Mike Schafer, owner of *Schafer Fisheries* in Thomson, IL. In 2010, the company sold some 20 million pounds of Asian carp to clients as far away as Turkey and Indonesia, up from two million pounds in 2006. "We're out in front," Schafer said, "and it's going to get bigger." We had dealt solely in catfish for most of our 55 years, but now, Asian carp represent 80 percent of the company's business, he said. Schafer now ships frozen, filleted, and minced carp mostly to international markets and Asian communities in the United States. It also offers Asian carp jerky, hot dogs and bouillabaisse, and converts waste material into liquid organic fertilizer. One of Schafer's main competitors, *Stoller Fisheries* of Spirit Lake, IA, ships about two million pounds of Asian carp each year. The owner, Larry Stoller, says he hopes to increase that number by half next year. *Inland Processing*, a start-up in Grafton, IL, is pitching the state and investors on plans for a plant to process up to 15 million pounds of Asian carp a year.

In addition to the $3 million program ran by Garvey, Illinois has also handed out nearly $6 million to state entrepreneurs, including a $2 million grant to the *Big River Fish Corporation*, of downstate Pearl, to expand operations and ship up to 50 million pounds of Asian carp a year to China. Kirby Marsden, former president of the *Illinois Commercial Fishermen's Association* and a part-time consultant for *Big River Fish*, estimates that the carp harvest, less than half a million pounds in 2000, could grow to an annual catch of 100 million pounds and create up to 200 new jobs in the next few years. "It's a chance to get rid of this invasive fish, boost the local economy and increase employment in this area," Marsden said. *Big River Fish* is using a state grant to build an 80,000-square-foot plant to open this fall and increase its processing capacity to 2.5 million pounds a month by 2013 from the current 180,000 pounds a month.

Select Logistics Network of Clinton, IL, recently won its own state contract: $1 million to remove about three million pounds of Asian carp from the Illinois River and process it into fish meal. *Heartland Processing*, a start-up in Havana, IL, is looking to turn carp waste into Omega 3-rich fish oil.

A state-backed study, to be published at year's end, should reveal whether the increased harvest is reducing carp numbers. "We want to crash the population," said Kevin Irons, aquaculture and aquatic nuisance manager for the ILDNR. "We're not trying to find a sustainable yield."

Sources: David Lepeska, *New York Times*, 8/12/11; *Greenwire*, 8/12/11

Mille Lacs Lake Zebra Mussel Invasion

Mille Lacs Lake, Minnesota's most popular fishing hot-spot, is facing a population explosion of zebra mussels. "It's a solid carpet of zebra mussels," said Tom Jones, a large lake specialist with the Minnesota Department of Natural Resources (MNDNR). Jones and coworkers scuba dive annually in August to document the invasive's numbers. Zebra mussels were first found in the 200-square-mile lake in 2005.

Last year they counted an average of 14 zebra mussels per square foot. This year, the average is a little more than 1,000 per square foot — 73 times more than last year — which is seven mussels per square inch. "It's phenomenal," Jones said. "Way more than we expected." They had expected perhaps a tenfold increase from last year. In one square foot at Three Mile Reef, where an average of 45 zebra mussels were found last year, Jones counted 4,500 of the invaders this year. "There was no visible rock at all," he said. The population growth is so explosive, it's hard to comprehend.

"In 2005, the first year, we did 60 dives and found four zebra mussels," Jones said. Three years later, they counted an average of 0.4 zebra mussels per square foot, but they had spread from the north side, where they likely were accidentally introduced, to the rest of the lake. The number jumped to four in 2009, then 14 per square foot in 2010. "Now there's nowhere we go that has habitat that doesn't have zebra mussels," Jones said. "The coverage is complete." And Jones said the explosion isn't over. "Their peak densities [elsewhere] are 10,000 per square foot," he said. "They might get there next year, or the year after." They will become so numerous that they will compete against each other, likely causing their numbers to fall. They could stabilize at 5,000 per square foot, Jones said. No one really knows for sure.

Additionally, no one knows how the invaders will affect Mille Lacs and its famed walleye fishery or the state's other 20 infected lakes, rivers and waterways. At Mille Lacs, docks, boats, buoys, boat lifts, rocks, water pipes and even native clams and snails are becoming encrusted with zebra mussels. "We heard a story of a boat that had so many zebra mussels on the hull it couldn't get up on plane until they scraped them off," Jones said. "That kind of thing will be more and more common," he said.

The native mussel species likely will be wiped out, Jones said. This summer, divers found some areas where virtually every native mussel had zebra mussels attached to it. "We've never seen that before," Jones said. Zebra mussels live three to five years, then die, and their sharp shells wash up on beaches, posing hazards to swimmers. That hasn't happened yet, Jones said, but it could happen in the next year or two.

The mussels filter up to a quart of water daily and consume algae, which is food for zooplankton, essential food for small fish, and water clarity usually increases. That might be starting to happen on Mille Lacs, Jones said. Consider this: At a density of 500 zebra mussels per square foot, the mussels would filter the entire water column above them every day, "and we'll be at two or three times that number," Jones said. "That means the water will be filtered completely every day, possibly more than once. That's why clarity would improve."

Upper Mississippi River freshwater mussels shells coated with zebra mussels.

But clearer water likely won't be beneficial to walleyes, which generally don't like sunlight. And it could make catching them tougher. The coveted fish won't disappear from the lake, Jones said. But they might head for deeper, darker waters. "It might change their distribution, so anglers might not catch them where they usually do," Jones said. That's why the MNDNR is documenting the zebra mussel explosion, as well as water chemistry and clarity. Clearer water also could increase vegetation growth, including the growth of Eurasian watermilfoil, another invasive found in Mille Lacs. This summer, Jones found it in a place he had never seen it before. "If we get more vegetation in the lake, that could favor species like bass," he said. "We should see bass numbers increase." The bottom line: The long-term impact to Mille Lacs, its fisheries, anglers and the businesses that depend on them is uncertain. "We just don't know what will happen," Jones said.

Source: Doug Smith, *(Minneapolis) Star Tribune*, 8/14/11

Economic Benefits of Risk Assessments

In a major new study published in the journal *Ecological Economics*, scientists and economists have, for the first time, statistically demonstrated the net benefits of doing risk assessments for the live wild animal trade. The study estimates that the long-term expected net benefits from implementing a risk screening system range from approximately $54,000 to $150,000 per species assessed, assuming typical import scenarios and mid-range impacts of non-native reptiles and amphibians.

"Managing the introduction of non-indigenous species is becoming a major goal of policy makers," said the lead author of the study, Michael Springborn, Ph.D., of the University of California at Davis. "How do we as a nation balance the benefits of trade against the risk of invasive species establishment? Our study integrated biology and economics to tackle that question," he said.

As a leading import market, the United States receives hundreds of millions of non-native animals each year, which represent thousands of different wildlife species. In practice, very few risk assessments are done, and the Lacey Act, the 111-year-old law that governs the wildlife trade, has only 25 entries on the restricted "injurious species" list. These species were typically restricted only after years of importation, and by then the damage had already occurred.

"Using over a decade of data on reptiles and amphibians imported to the United States as a case study, we described economic outcomes over a range of scenarios and demonstrated benefits of a risk screening program compared to our current basically 'open-door' policy," said co-author Christina Romagosa, Ph.D., of Auburn University. The results add to the published literature showing that preventing the import of particularly risky species is preferable economically to allowing the trade and suffering the consequences of establishment. "While we knew from a prior study that risk screening for the plant import trade leads to large economic and environmental benefits, this is the first paper to show comparable benefits for the live animal trade, which is huge in this country," said co-author Reuben Keller, Ph.D., of the University of Chicago.

For several years, Congress has considered bills mandating stricter risk assessment procedures, but the legislation has stalled. "If a risk assessment had been done on Asian carp

before they were imported, they would never have been allowed into the country, and we would not be dealing with their destructive invasion of our nation's waterways," said Jennifer Nalbone, Director of Navigation and Invasive Species for *Great Lakes United*. "It's time for the antiquated Lacey Act to be modernized so that we never have to fight off another invasion like this again."

"The old saying 'an ounce of prevention is worth a pound of cure' was ahead of its time when it comes to invasive species policy," said Peter Jenkins, spokesperson for groups in the *National Environmental Coalition on Invasive Species*, which is working with members of Congress to modernize the Lacey Act. "This economics study provides Congress with strong financial justification to adopt a thorough risk assessment approach for live animal imports coming into this country."

The study citation is as follows: Springborn, M., Romagosa, C.M., Keller, R.P., *The value of non-indigenous species risk assessment in international trade*, Ecol. Econ. (2011), doi:10.1016/j.ecolecon.2011.06.016. More information can be found on line at: http://www.sciencedirect.com/science/article/pii/S092180091100262X#FCANote.

Source: *Great Lakes United*, 8/15/11; and Phil Taylor, *Greenwire*, 8/16/11

Nation's Largest Dam Removal Project Begins

In mid September, nearly two decades after Congress called for full restoration of the Olympic Peninsula's Elwha River and its fish runs, contractors began a three year, $324.7 million project to dismantle the river's dams. Eventually this will allow the 45-mile Elwha River to run free as it courses from the Olympic Mountains through old-growth forests into the Strait of Juan de Fuca. "We're going to let this river be wild again," said Amy Kober, a spokeswoman for the advocacy group *American Rivers*. "The generators may be powering down, but the river is about to power up."

The 105-foot Elwha Dam came on line in 1913, followed 14 years later by the 210-foot Glines Canyon Dam eight miles upstream. For years, they provided electricity to a local pulp and paper mill and the growing city of Port Angeles. Electricity from the dams was enough to power about 1,700 homes. A state law required fish passage facilities, but none were ever built. So all five native stocks of Pacific salmon and other anadromous fish that mature in the ocean and return to rivers to spawn were confined to the lower five miles of the river.

In 1910, the Elwha produced about 390,000 salmon and sea-run trout, including coho, pink, sockeye and chinook salmon and steelhead trout. The number of wild native sea-run fish dwindled to only about 3,000 in 2005. The fish are particularly important to members of the Lower Elwha Klallam Tribe, whose ancestors have occupied the Elwha Valley for generations and whose members recall stories of 100-pound chinook salmon so plentiful you could walk across the river on their backs. "We have never been happy that the salmon runs in the river were cut off," said Robert Elofson, Elwha River restoration director for the tribe, which along with environmental groups fought in the 1980s to tear down the dams.

Elwah Dam (105 ft. tall) on lower Elwah River. (USGS Photo)

Because most of the river lies within the protected boundaries of Olympic National Park, scientists say the Elwha River restoration project presents a unique opportunity to study how a river recovers once dam-free. Researchers will study how salmon return to the river, how their return will benefit wildlife such as bears and eagles, and how the estuary will be reshaped when sediment trapped behind the dams is released. More than 24 million cubic yards of sediment are held behind the dams in Lake Mills and Lake Aldwell, enough to fill a football stadium two miles high, said David Reynolds, a spokesman for Olympic National Park. The National Park Service and the Lower Elwha Klallam Tribe are leading the river restoration project.

When the reservoirs are drained, 800 acres of barren land will be exposed. At the park's new greenhouse, park botanists and volunteers are busy transplanting and potting native plants to fill the exposed land. Crews have been collecting seeds, cones and cuttings along the river since 2002. The first 15,000 plants will be put in this fall. In all more than 400,000 plants will be used to restore a forested ecosystem, keep out exotic species and prevent erosion. "This is a great experiment for other dam removals," said Jill Zarzeczny, biological technician with the Elwha revegetation project. One hitch in the restoration project is a controversy over the Tribe's interest in restocking the river with hatchery reared fish. They are afraid natural reproduction will take too long to restore viable fishery. But scientists are concerned that such action will destroy the genetics of native populations.

The dams were fed by glaciers and weather patterns that make it a rich water resource, said Kevin Yancy, the power plant's foreman. He works for the U.S. Bureau of Reclamation, which has operated the dams since the federal government bought them in 2000. Starting in June, workers began taking the electrical load off the generator, de-energizing the lines coming into the plant, closing the head gates and removing all hazardous energy...., Yancy said. A window in the control room offers a view of the glacier-fed river where Yancy said he has often seen hundreds of fish jumping as they run up against the walls of the Elwha Dam. "They want to go upstream," said Yancy. "Being a hydro guy, none of us want to see power plants removed, but for this river and this story, it's time," he said.

Sources: Phuong Le, *AP/Tacoma News Tribune*, 5/31/11; Lynda Mapes, *Seattle Times*, 8/24/11; *Greenwire*, 5/31 and 8/25/11

Big Changes in Store for Southern Forests

The South's forests will look a lot different in 50 years than they do today, according to an new report from the U.S. Forest Service (USFS). The 79-page report, based on a three-year collaborative effort among experts from federal and state agencies as well as academic institutions, found that population growth, urbanization, bioenergy use, climate change, shifts in land ownership and the spread of invasive species will significantly alter the region's forests between 2010 and 2060.

"The South's forests have evolved rapidly over the past half-century and could change just as rapidly over the next 50 years," concludes the report, issued by USFS's Southern Research Station (SRS) in Asheville, NC. The document will serve as a guide to help Southern forest managers make sound management decisions in the face of those changes, said Rob Doudrick, director of the

SRS. For instance, knowing more about future land use changes can guide timber harvesting decisions today, and understanding urbanization trends can help prioritize conservation efforts, the report notes. The interplay among four primary factors — population growth, climate change, timber markets and invasive species — will define the future of the South's forests the report says.

One of the study's gravest findings is that the South could lose 23 million acres of forest, an area about the size of South Carolina, over the next half-century. The loss will be primarily due to population growth and associated development, which is also likely to crowd out wildlife and tax water supplies, particularly as climate change raises temperatures and alters precipitation patterns. Already, population and economic growth in the South has outpaced national growth rates in recent years, "with the resulting urbanization steadily consuming forests and other rural lands," the report states. About 87 percent of the South's forests are privately owned, making them especially vulnerable to conversion.

The loss of forestland also means loss of habitat. When all of the various drivers of change are taken into account, including urbanization, climate change and invasive species, more than 1,000 plant and wildlife species could be at risk, according to the report. Urbanization will also expand the wildland-urban interface, where public opposition to practices such as prescribed burning could hinder forest managers' ability to reduce fuels — even as the risk of wildfire increases due to climate change and other factors, according to the study.

The region is predicted to see average annual temperatures rises, resulting in more wildfires and reduced water supplies in some areas. "Some places will get a little wetter, some a little drier," said USFS economist and forest management specialist David Wear, who co-authored the report with John Greis, a resource analyst with the agency. "It depends on when the precipitation comes. If we get it early in the spring and then everything dries out in the summer, we get more fire risk."

The South's fast-growing forests provide the majority of the nation's wood fiber, and a robust timber industry could provide an incentive to retain forests rather than convert them to other land uses. The region also could greatly benefit from the growing demand for bioenergy starting around 2020, but the two industries could end up at odds with one another, Wear said. "There would be increasing competition between those two sectors," he said. And while expanded timber production or bioenergy use would bring economic benefits, it would also alter wildlife habitat, the report notes.

The 13 Southern states included in the study are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

Source: April Reese, *Land Letter Headlines*, 5/26/11

EPA Releases Mountaintop Removal Studies

The U.S. EPA has released two studies on the effects of mountaintop-removal mining in Appalachian states. Their results provided the backbone of the agency's justification for increased environmental oversight of the practice. The documents — made public on April 13 but announced in the Federal Register on May 27, more than a month after their initial release — appear to mirror the draft reports released the previous April. That's when EPA's interim guidance document related to the enforcement of mountaintop-removal projects went into effect.

One of the studies, dealing with the effect of mountaintop mines and valley fills on Appalachian aquatic life, found that streams are permanently lost as a result of companies removing mountains and filling surrounding areas with waste. The study also documented higher levels of selenium and other pollutants near mining operations, which affect organisms.

The second study focused on conductivity, a measure of how well waters can carry an electric charge. It found that high levels of conductivity are associated with loss of aquatic life. As a result, EPA's interim guidance set the first ever numeric standard for conductivity, a move critics say is beyond the scope of guidance documents.

In a rebuttal study commissioned by the *National Mining Association* (NMA), researchers attempted to undercut some key EPA arguments. The NMA study says many water animals may colonize streams "opportunistically" and not because of the water chemistry, and questions the need for a conductivity limit. The mining industry is challenging the guidance in court, saying it amounts to new rules. The guidance has also been the subject of Congressional hearings, an ongoing investigation by Rep. Darrell Issa (R/CA), chairman of the House Oversight and Government Reform Committee, and review from the White House *Office of Information and Regulatory Affairs* (OIRA). A revised version of the guidance is expected in the very near future.

While critics on both sides of the aisle say the agency is overstepping its bounds and hurting job creation, environmental advocates defend the guidance, saying it's evidence of EPA finally enforcing the Clean Water Act (CWA). They're worried that a White House review will lead to a watered down version. In a hearing in late May, OIRA head Cass Sunstein offered a glimpse of what may come. "We work very closely with agencies to make sure these guidance documents don't become rules," Sunstein said.

Meanwhile, a new poll in several Appalachian states found significant opposition to mountaintop removal mining, despite strong support from many of their politicians. The poll conducted for the *Sierra Club*, *Earthjustice* and *Appalachian Mountain Advocates* found most voters in Kentucky, West Virginia, Tennessee and Virginia support strong enforcement of the federal CWA when dealing with mountaintop removal projects. "Voters in Appalachia would also use this issue as a criterion in electoral choices, and are far less likely to support public officials who would weaken environmental protections on mountaintop removal mining and more likely to support those who would strengthen those protections," said a memo from the pollsters, *Lake Research Partners* and *Bellwether Research & Consulting*.

Outside the context of the CWA, the memo said, 38 percent of voters oppose mountaintop removal compared to 24 percent who support it, with another 38 percent undecided. But given a short explanation of mountaintop removal, 57 percent of voters oppose the practice compared to 20 percent who support it. And many of the opponents, pollsters say, are strong in their opinion. Pollsters described mountaintop mining as "a process ... where the top of a mountain is removed to extract the coal and waste is disposed in nearby valleys and streams."

Another poll released in August by *CNN* and *ORC International* found 57 percent of people nationwide oppose mountaintop removal mining. Bill Raney, president of the *West Virginia Coal Association*, questioned

that poll. "I think you have to spend some time explaining that mountaintop mining is authorized by federal law," he told *CNN*, "and has been for years."

"So much of this poll was contrary to conventional wisdom," said Celinda Lake, *Lake Research Partners* president, in a conference call with reporters. "We have a solid plurality of voters in these states who believe environmental protections are good for the economy." The results appear to fly in the face of arguments from many Appalachian politicians who oppose the Obama administration's increased oversight of mountaintop removal mining, saying it is killing jobs. Support for the coal industry and opposition to federal agencies like U.S. EPA is often used as a vote-getting tool throughout Appalachia. "This poll shows that [politicians] are clearly out of step with the region's likely voters," said Ed Hopkins, environmental quality program director at the *Sierra Club*.

Source: Manuel Quinones, *Greenwire*, 5/27 and 8/16/11

Federal Urban Waters Initiative

Baltimore is one of seven pilot cities nationwide participating in a new federal urban waters initiative announced in late June that doesn't promise any new funding but hopes to increase cooperation among federal and local agencies. Eleven federal agencies, led by the U.S. EPA and the departments of the Interior and Agriculture, are spearheading the effort. EPA Administrator Lisa Jackson noted agencies across the country are already spending money on infrastructure, money that can be used to restore waterways if spent appropriately. While storm drains carry away runoff, for example, "it's much cleaner for water to go back into the ground…" than to roll off down big highways, carrying all the pollution and sediment with it into our water bodies,

Jackson said planners who have relied on pipes and cement and mortar in the past are coming to realize green spaces cost less and can filter storm runoff, helping cities meet Clean Water Act requirements. The federal agencies in the pilot program will help the cities develop that green infrastructure. "We know it can be done, and we actually are starting to see studies of places that are doing it and saving money," Jackson said.

Besides Baltimore's Patapsco watershed, other pilot locations in the program are the Anacostia watershed in the District of Columbia and Maryland; the Bronx and Harlem River watersheds in New York; the South Platte River in Denver; the Los Angeles River watershed; the Lake Pontchartrain area in New Orleans; and the northwest Indiana area. The White House's Domestic Policy Chair, Melody Barnes, called it a new way of doing business for the federal government.

Other agencies involved in the initiative include the Army Corps of Engineers (Corps), the U.S. Geological Survey (USGS), the Department of Transportation, and the Department of Housing and Urban Development. The Corps, for example, can be involved in planning, design and construction, said Amy Guise, chief of project development for the Corps' Baltimore district. Donna Myers, chief of the office of water quality programs for the USGS, said the agency is involved with water quality studies and can also provide mapping and other scientific support. Michael Rains of the U.S. Forest Service said a half million dollars already being spent in the Patapsco watershed could be redirected to the initiative, and when combined with other agencies could have a significant impact. "We can be a force," said Rains, director of the service's Northern Research Station in Newton Square, PA.

Sources: Alex Dominguez, *AP/San Francisco Chronicle*, 6/24/11; and *Greenwire*, 6/27/

New "Rock Snot" Research

A report published in the journal *Geophysical Research Letters*, reveals that the formally titled *Didymosphenia geminata* -- known to many as didymo or "rock snot," a name that reflects the algae's resemblance to wet toilet paper — relies on bacteria to help it concentrate large quantities of phosphorus from water. P.V. Sundareshwar, a scientist from the South Dakota School of Mines was lead author of the report. Waterway managers have understood for some time that porous materials can capture and spread didymo from stream to stream, leading some states to implement bans on the use of felt-soled waders in their rivers.

"Didymo appears in waters that are relatively low-nutrient, and oftentimes we think of these algal blooms as appearing in waters with excess nutrients, often from fertilizer runoff," said Tim Kratz, ecosystem science program director for the *National Science Foundation* (NSF), which provided part of the funding for the research. Didymo mats are composed of stalks, and when new ones form, older stalks are pushed to the inner part of the bloom, creating a microenvironment that houses bacteria. At the same time, the cells that make up the didymo patch are condensing iron and phosphorus on their surfaces. The iron assists the algae's internal bacteria in a process that concentrates the phosphorus, increasing the nutrient's "bioavailability," Sundareshwar said.

Although the team's research was conducted primarily in South Dakota's Rapid Creek, Sundareshwar said his team's findings are applicable to river management practices around the world. Sundareshwar added that understanding didymo's growth processes is an essential step toward the creation of control measures. "If you understand how this is growing ... we might be able to design better strategies to control it," he said. In fact, proposing didymo prevention and management strategies is the next step for Sundareshwar and his team.

Although he said the findings do not suggest any near-term policy solutions, Sundareshwar said he sees potential in a couple of long-term programs that the research team will ask NSF to fund. The first is a new risk mapping system that will use the team's findings to identify rivers that have the potential to host didymo, cross-referenced with information on how likely it is that the algae will reach the water body. "If you combine those two things," Sundareshwar said, "you can come up with a priority set of water bodies that you would want to protect." Another option is to chemically alter waterways to mitigate or prevent the spread of didymo. Sundareshwar said his team is conducting experiments to test the feasibility of such an endeavor.

Source: Pamela King, *Greenwire*, 6/24/11

The Value of Wild Bees

Wild native bees are worth up to $2.4 billion a year to California agriculture alone, pollinating more than a third of the state's crops, according to a study published in late June in the journal *Rangelands*. Researchers say the study is the first to put a price tag on services provided by native bee pollinators. The results, they say, are significant because of the documented decline in commercial honeybee colonies and helps make the case for conserving rangeland and planting buffers between crops to act as habitat for the wild bees. "The natural habitats in California are really important to maintain because they are supplying us with pollinators for our food

crops," said Claire Kremen, a researcher at the University of California, Berkeley, and the study's senior author.

About 35 percent of total crop production and three-quarters of the different varieties of crops that humans eat depend on animal pollinators such as bees. Native bees are especially adept at pollinating watermelon, blueberries, cranberries, apples and almonds. In all, pollinator-dependent crops in California are worth $11.7 billion annually. The study estimates that wild, free-living bees provide between $937 million and $2.4 billion of that amount.

"We all know this is valuable wildlife habitat, plant habitat and pollinator habitat, but it's another thing to say how much that's worth and what that means to human society," said Lynn Huntsinger, a professor of rangeland management at UC Berkeley who was not involved in the study. The study comes as researchers are debating the cause of the dramatic decline since 2006 in colonies of imported honeybees, which many growers rely on to pollinate their crops in California's Central Valley, one of the nation's most productive agricultural areas. Researchers are not sure what is causing the reduction — pesticides and disease have both been blamed. The decline has been termed "Colony Collapse Disorder" and has been documented around the globe.

Honeybee decline makes the services of native bees even more valuable, said Doug Holy, invasive species and pollinator specialist at the U.S. Agriculture Department's Natural Resources Conservation Service (NRCS). There are more than 4,400 species of native bees in the United States. Researchers have found that the numbers of some species of wild bumblebees have also been declining recently, again for a still unknown reason.

NRCS is urging farmers to replant more and better habitat for both honey and wild bees, Holy said. The service has also encouraged farmers to apply pesticides judiciously and at night, when bees are not as active. Based on the study's results, it is also important for crop farmers to look beyond monoculture, Kremen said. Farmers in the middle of the Central Valley lost more services from wild bees than those near natural areas and ranchlands at the edge of the valley. Farms, she said, should be growing different kinds of crops in their fields, as well as bordering their fields and old roads with native plants. "Although that might be a very, very small habitat element," Kremen said, "if all farmers did this, if all crops were bordered on their four edges with such planting, then we would start to produce quite a lot of habitat." The study found that rangelands provide much of the natural vegetation that helps promote wild-bee habitats. This means that private landowners and producers have a large role to play in habitat conservation, Huntsinger said.

The study highlights the need for more research to learn how private landowners can manage grazing to provide ecosystem services like pollination, she said. "Livestock grazing on some ecosystems can actually be used to make the habitat better for pollinators," Huntsinger said. "It's not just setting aside land, it's also protecting a whole kind of management and production system that creates this wonderful combination of ecosystem services and food."

The study names a number of caveats, and its results are California-specific. "But I think we can say that this is an economically valuable service that wild pollinators are providing," Kremen said. "It's a significant value. What the actual number is, perhaps we don't know that for sure, but it is a significant and important contribution to crop production."

Source: Amanda Peterka, *Greenwire*, 6/27/11

Insights Into Link Between Parkinson's and Pesticides

In a new article published in the journal *Molecular Neurodegeneration*, researchers at the University of Missouri (MU) School of Medicine take some of the first steps toward unraveling the molecular dysfunction that occurs when proteins are exposed to environmental toxins. Their discovery helps further explain recent *National Institute of Health* (NIH) findings that demonstrate the link between Parkinson's disease and two particular pesticides — rotenone and paraquat.

"Fewer than 5 percent of Parkinson's cases are attributed to genetics, but more than 95 percent of cases have unknown causes," said Zezong Gu, MD, PhD, assistant professor of pathology and anatomical sciences. "This study provides the evidence that oxidative stress, possibly due to sustained exposure to environmental toxins, may serve as a primary cause of Parkinson's. This helps us begin to unveil why many people, such as farmers exposed to pesticides, have an increased incidence of the disease."

Scientists previously understood that Parkinson's is associated with oxidative stress, which is when electronically unstable atoms or molecules damage cells. The MU study yields more specific information about how oxidative stress causes parkin, a protein responsible for regulating other proteins, to malfunction. These findings come as the result of collaborative research conducted by Gu and the paper's primary author, Fanjun Meng, an MU visiting scholar from the *Chinese Academy of Sciences Beijing Institute of Genomics*, as well as colleagues at the *Sanford-Burnham Medical Research Institute* and the University of California at San Diego.

Gu with his *Burnham* colleagues invented a new antibody that allowed them to detect how oxidative stress affected proteins when exposed to a variety of environmental toxins, such as the pesticide rotenone. They then specifically demonstrated how oxidative stress caused parkin proteins to cluster together and malfunction, rather than performing normally by cleaning up damaged proteins. "This whole process progresses into Parkinson's disease," Gu said. "We illustrated the molecular events that lead to the more common form of the disorder in the vast majority of cases with unknown causes. Knowing this, we can find ways to correct, prevent and reduce the incidence of this disease."

Researchers used mass spectrometry to analyze findings. They measured parkin fragments, pinpointed whether the proteins were modified and where that modification occurred. This enabled them to map the location of parkin oxidation and further compare these events with genetic mutations in patients with Parkinson's disease reported in the literature. Their findings demonstrated that parkin protein oxidation in certain locations corresponds with the location of mutations. They then sought to determine the outcome of the modification — finding their results to be consistent in multiple disease models, including cell cultures and tissue samples from rodents, monkeys and human postmortem Parkinson's patients.

Gu and Meng hope to extend their investigation into preventive treatments and therapies through work at MU's *Center for Botanical Interaction Studies*. After Alzheimer's disease, Parkinson's disease is the most common neurodegenerative disorder. Approximately 60,000 new cases of Parkinson's disease are diagnosed each year. By some

estimates, at least one million people in the U.S. have the disease, which has no cure.

Source: *ScienceDaily*, 6/23/11

Climate Change Update

The 30-year "normal" temperature in the United States is about 0.5°F warmer than it was in the 1970s, according to a report released in late June by the National Oceanic and Atmospheric Administration's *National Climatic Data Center*. "The climate of the 2000s is about 1.5°F warmer than the 1970s, so we would expect the updated 30-year normals to be warmer," said Thomas Karl, director of scientists at the agency. The 30-year baseline is used by scientists to understand climate conditions and trends. Because the 30-year moving averages overlap, the change in temperature in the new data suggests that this past decade was significantly warmer than the 1970s, said Kevin Trenberth, a senior climate scientist at the *National Center for Atmospheric Research*. "It means a lot of global warming is being built into the new normals," Trenberth said.

Carbon dioxide emissions rose by a record amount last year, according to new estimates from the International Energy Agency. Three-quarters of the record increase in emissions came from emerging economies, including China, but there is mounting evidence that the developed world has "exported" billions of tons of its emissions by relying on imports from such economies.

Native trout in the West could decline by 50 percent over the next 70 years due to environmental changes wrought by climate change, a new scientific study has found. The paper, published in mid-August in the peer-reviewed *Proceedings of the National Academy of Sciences*, predicts native cutthroat habitat in Idaho could decline by as much as 58 percent. The predictions are based on 10 of the 20 climate models developed independently worldwide that all show the world is getting warmer. Beyond stresses caused by rising river temperatures, the study found that warmer winters are causing more winter floods that wash away the gravel that holds brook and brown trout eggs. And changing spring and summer flows give rainbow trout an advantage over native cutthroat trout in the rivers they share, allowing the invaders to crowd out the natives. But there remains a lot of uncertainty in the numbers, especially past 2050, said Seth Wenger, a fisheries scientist with *Trout Unlimited*, so there is a range of possible impacts on cutthroats. The scientists forecast reductions in habitat ranging from 33 percent to 58 percent. If natural or man-made changes don't occur to reverse the warming trend, scientists predict rainbow trout habitat may drop by 35 percent and brown trout by 48 percent. Surprisingly, brook trout, introduced from Eastern streams, could decline by as much as 77 percent.

A federal judge in late June upheld the George W. Bush administration's decision to list the polar bear as threatened under the Endangered Species Act. The ruling is a blow to both environmental groups that wanted the bear listed as endangered and to industry groups that don't want it listed at all. U.S. District Judge Emmet Sullivan of the District of Columbia issued a 116-page opinion explaining why he granted the federal government's motion for summary judgment on the listing issue. Under Supreme Court precedent, judges are required to give deference to agency decisions, Sullivan wrote. The challengers had "failed to demonstrate that the agency's listing determination rises to the level of irrationality," he added.

Hanging over the matter is the issue of global warming and its potential effect on the polar bear's habitat. Environmentalists argue that greenhouse gases (GHGs) are to blame and that the ESA could be used to help regulate emissions, an approach the Obama administration opposes. Sullivan has yet to rule on that question, which is in many ways the key issue in the case. Ultimately, the various parties challenging the listing from both sides constituted "nothing more than competing views about policy and science," Sullivan noted in his judgement. As a federal judge Sullivan said he "is not empowered to choose among these competing views. Instead, this court is bound to uphold the agency's determination that the polar bear is a threatened species as long as it is reasonable, regardless of whether there may be other reasonable, or even more reasonable, views."

Sullivan's ruling did not address what he himself described at a hearing in April as the "elephant in the room" — the special rule that accompanied the listing that limits the use of the threatened listing to tackle GHG emissions. The so-called 4(d) rule was endorsed by Interior Secretary Ken Salazar when he took office in 2009 while the administration moved ahead with efforts to designate polar bear habitat. Brendan Cummings, an attorney with the *Center for Biological Diversity*, said that now the legality of the threatened listing has been resolved, the 4(d) litigation is vital. "That's the one that has the most important climate policy implications," Cummings said.

With regard to polar bear research, an Alaska wildlife biologist, Charles Monnett, is at the center of a controversy regarding, of all things, sole source contracting. Monnett and a colleague published a paper in 2006 after observing four dead polar bears floating in the water after a storm. The co-authors found that declining ice cover forced the animals to swim longer distances, leading the bears to tire before they reached a new surface, a finding that galvanized the global warming movement. Monnett was responsible for the agency's research on Arctic wildlife and ecology and oversaw $50 million worth of studies. Days before he was placed on administrative leave, the agency issued a stop-work order on a study that was tracking polar bear populations. "You have to wonder: This is the guy in charge of all the science in the Arctic, and he is being suspended just now as an arm of the Interior Department is getting ready to make its decision on offshore drilling in the Arctic seas," Jeff Ruch, Executive Director of *Public Employees for Environmental Responsibility* (PEER) said.

The Interior Department Inspector General (IG) said a federal investigation into Monnett is underway to look into the researcher's compliance with government contracting regulations and his relationship with the lead researcher on the study, said Andrew Derocher, of Monnett's PEER defense team. Among the actions the department will investigate is "the procurement of a sole source, cost-reimbursable contract with the University of Alberta to conduct [the] study," Eric May, an official in the IG's office, wrote in the letter to Monnett. But PEER President Jeff Ruch said Monnett's decisions were approved by his supervisors. "Every aspect of this study was approved by his chain of command, with a fairly transparent paper trail," Ruch said in a statement. Ruch said further that the department may be trying to quash Arctic research projects to pave the way for offshore drilling in the region.

In Texas the worst one-year drought in the state's history has caused waterways and reservoirs to dry up or turn into wet mud. The drought's damage to wildlife is expected to last for years, biologists say. "It has a compound effect on a multitude of species and organisms and habitat types because of the way that it's chained and linked together," said Jeff Bonner, a wildlife biologist with the

Texas Parks and Wildlife Department. Texas has only received 6 inches of rain since January, less than half its average. This summer Texas and several other Midwestern states have been plagued by weeks of continuous triple-digit temperatures and little rain. Climate experts predict that the dry conditions in Texas will likely carry on into 2012. Most directly, dry rivers cause fish to die, leading to what Bonner called a "domino effect. " Less water means fewer plants and insects. Fewer insects mean less seed production. Animals that rely on seeds cannot reproduce. Predators that eat those animals cannot feed and the ripples cross state borders. For example, birds that migrate south will suffer this year because they won't find food and water in Texas. And many effects, such as reduced reproduction, may not be apparent until years down the line. "It's an ecosystemwide problem," said John Baccus, a wildlife biologist at Texas State University. Drought and high temperatures are consistent with climate change forecasts for Texas, said John Nielsen-Gammon, the state climatologist. He said that about 80 percent of the models run for the 2007 report by the *U.N. Intergovernmental Panel on Climate Change* predict declining precipitation for Texas.

According to a study released in late July in the *Proceedings of the National Academy of Sciences*, large, severe fires like the ones that scorched more than one-third of Yellowstone National Park 23 years ago could become much more frequent as average temperatures rise across the Greater Yellowstone ecosystem. The study found that by the mid-21st century the area's lodgepole pine and higher elevation spruce-fir forests could shift to drier, more open forest types like ponderosa pine, which is typically found in the Southwest. In some places, forests could even convert to meadows if tree species cannot keep pace with climatic changes, the study found. Comparing monthly climate data from 1972 to 1999 with the frequency and size of fires in the northern Rocky Mountains over the same period, Anthony Westerling, a geographer at the University of California, Merced and researchers from the University of Wisconsin, Madison, Pennsylvania State University and Colorado State University, as well as the Forest Service's Rocky Mountain Research Station, used climate models to project how rising temperatures could affect fire frequency and intensity through the year 2099. Changes in vegetation in response to climate change could also profoundly affect the region's wildlife, hydrology and aesthetics, the study notes.

While the Northwest Forest Plan sought to reduce old-growth logging and protect endangered species in Washington, Oregon and California, researchers say the 1993 plan has resulted in an unforeseen benefit — turning the region's forests from a carbon source to a carbon sink. Researchers at Oregon State University, the Forest Service and Oak Ridge National Laboratory used a combination of remote sensing and ecosystem modeling to examine the carbon balance on both public and private lands within the Northwest Forest Plan area from 1985 to 2007. When timber harvesting was at its peak between 1985 and 1989, both public and private lands released more carbon into the atmosphere than they stored in the soil and trees, the researchers found. But after the Northwest Forest Plan was implemented in 1993, logging on public lands decreased dramatically — 82 percent — and those forests transformed from a carbon source to a major carbon sink. Meanwhile, private lands, which were not regulated under the forest plan, but account for about half of the land in the study area, moved closer to carbon neutral. Since the late 1990s, the amount of carbon released from logging more evenly matches the amount stored by growing trees, the study found.

Regarding attitudes about global warming, conservative white males are more likely than any other adult demographics to deny its existence, according to a new study conducted by researchers at two universities. In polling conducted by *Gallup*, researchers from Michigan State University and Oklahoma State University found that nearly 30 percent of conservative white males believed that the effects of global warming "will never happen," while 7.4 percent of other adults held the same view. Close to 60 percent of conservative white males do not believe that global warming is caused by human behavior, a view shared by 31.5 percent of other adults. "Conservative white males are significantly more likely than are other Americans to endorse denialist views," the researchers wrote in their study. "These differences are even greater for those conservative white males who self-report understanding global warming very well." Conservative white males were more than twice as likely as other adults to assert that the media had overstated the effects of global warming, and nearly 60 percent denied that a scientific consensus existed on the reality of global warming. The study was quick to point out that the lack of belief in global warming extended beyond one demographic. "Denialism is sufficiently diffuse within the American public that it obviously cannot be attributed solely to conservative white males," the study says. "What is most sobering, especially for the scientific community and climate change communicators, is that climate change denial actually increased in the U.S. general public between 2001 and 2010, although primarily due to a significant increase in the past two years which may prove abnormal in the long run".

In a lengthy essay for publication in *Rolling Stone* magazine, former vice president Al Gore charged President Obama with failure to marshal his power into meaningful progress on climate change and to defend the science behind it. While crediting the president for some energy policy achievements, Gore argued that Obama fundamentally dropped the ball on "bold action" on climate. "President Obama has never presented to the American people the magnitude of the climate crisis," Gore wrote. "He has simply not made the case for action. He has not defended the science against the ongoing, withering and dishonest attacks. Nor has he provided a presidential venue for the scientific community — including our own *National Academy* — to bring the reality of the science before the public." As a result of Obama's lackluster mobilization, Gore added, there was "no real change from the Bush era" during global climate talks in Copenhagen, Denmark, that were seen originally as a chance to make major headway on carbon emissions limits. Without naming names, Gore also blasted GOP presidential hopefuls "who have felt it necessary to abandon their previous support for action on the climate crisis." At one point in his essay, Gore also predicted a potential furor in the wake of his critical comments: "Even writing an article like this one carries risks; opponents of the president will excerpt the criticism and strip it of context," he said. Gore is revamping his climate change advocacy effort under a new name, *Climate Reality Project.*

On July 7 the Board of Directors of the *Soil and Water Conservation Society* adopted a Position Statement on Climate Change and Soil and Water Conservation that finds that: "Greenhouse gases contributed by agriculture are an important factor in climate change… ." The position statement further states that "Government, private, and nonprofit stakeholders should apply the following principles in choosing and promoting soil and water conservation practices to mitigate and adapt to climate change:"

- Increase soil carbon levels,
- Maintain surface cover,
- Cultivate perennial vegetation as biofuel feedstock,
- Use agroforestry practices to create wind-

breaks and riparian buffers where possible,
- Target conservation practices, and
- Promote crop input efficiency.

Sources: Ashlie Rodriguez, *Los Angeles Times*, 6/30/11; Rocky Barker, *Idaho Statesman*, 8/16/11; Fiona Harvey, *London Guardian*, 5/31 and 6/6/11; Becky Bohrer, *AP/ Anchorage Daily News*, 7/30/11; Suzanne Goldenberg, *London Guardian*, 8/2/11; Ramit Plushnick-Masti, *AP/Houston Chronicle*, 8/8/11; David Malakoff, *London Guardian*, 7/27/11; Kate Galbraith, *New York Times*, 8/26/11; Laura Petersen, *Land Letter*, 7/28/11; April Reese, *Land Letter*, 7/28/11; Elana Schor, *Greenwire*, 6/22 and 7/12/11; Lawrence Hurley, *Greenwire*, 6/30/11; Emily Yehle, *Greenwire*, 8/4 and 8/5/11; *Land Letter*, 8/18/11; and *Greenwire*, 5/31, 6/6, 7/1, 7/27, 8/1, 8/2, 8/8 and 8/26,/11

River Life – A New Website

River Life, a program of the *Institute on the Environment* at the University of Minnesota, announced in late August the launch of a new web site at riverlife.umn.edu. The site is intended to promote learning about rivers and river issues. It uses social media, a digital atlas, and case study reports to develop and share knowledge on the scientific and professional practices that create inclusive, sustainable rivers. The site also discuss science, planning, engagement, inclusion, sustainability, and river issues.

River Life describes it's work as grounded in a conviction that future river managers will need to be conversant in the sciences, public policy, design, planning, and in the engagement programs that reach the broadest sectors of the populace.

Meetings of Interest

Oct. 26-28: 31st International Symposium of the North American Lake Management Society (NALMS), Spokane, WA, See: http://www.nalms.org/nalmsnew/

Nov. 1-4: Natural Areas Conference 2011, Tallahassee, FL, See: http://www.naturalarea.org

Dec. 4-7: 72nd Midwest Fish & Wildlife Conference, Des Moines, IA. See: www.midwest2011.org

Dec. 5-7: First International Conference on Water and Society, Las Vegas, NV, See: http://www.wessex.ac.uk/11-conferences/waterandsociety-2011.html

June 3-8, 2012: Wetlands in a Complex World - 9th INTECOL International Wetlands Conference, Caribe Royal Hotel Orlando, FL, See: www.conference.ifas.ufl.edu/intecol

Sep. 30-Oct. 5: EcoSummit 2012, Columbus, OH. See: http://www.ecosummit2012.org

Congressional Action Pertinent to the Mississippi River Basin

Climate Change

S. 116. Vitter (R/LA) and Barrasso (R/WY). Provides for the establishment, on-going validation, and utilization of an official set of data on the historical temperature record, and for other purposes.

S 228. Barrasso (R/WY) and 10 Co-sponsors and **H. R. 750.** Walberg (R/MI), Preempts regulation of action relating to, or consideration of greenhouse gases (GHGs) under Federal and common law on enactment of a Federal policy to mitigate climate change.

S. 482. Inhofe (R/OK) and 43 Co-sponsors and **H. R. 910.** Upton (R/MI) and 9 Co-sponsors. Amends the Clean Air Act to prohibit the Administrator of the EPA from promulgating any regulation concerning, taking action relating to, or taking into consideration the emission of a GHG to address climate change, and for other purposes.

S. 1393. Barrasso (R/WY) and **H. R. 2603**. Posey (R/FL) and 7 Co-sponsors.. Prohibits the enforcement of a climate change interpretive guidance issued by the Securities and Exchange Commission, and for other purposes.

H.R. 97. Blackburn (R/TN) and 46 Co-sponsors and **H.R. 1292.** Cuellar (D/TX). Amends the Clean Air Act to provide that GHGs are not subject to the Act, and for other purposes.

H. R. 153. Poe (R/TX) and 19 Co-sponsors. Prohibits funding for the U.S. EPA to be used to implement or enforce a cap-and-trade program for GHGs, and for other purposes.

H. R. 680. Luetkemeyer (R/MO) and 23 Co-sponsors. Prohibits U.S. contributions to the Intergovernmental Panel on Climate Change.

H. R. 1149. Bilbray (R/CA) and 7 Co-sponsors. Amends the Clean Air Act to include algae-based biofuel in the renewable fuel program and amend the Internal Revenue Code of 1986 to include algae-based biofuel in the cellulosic biofuel producer credit.

Conservation

S. 339. Baucus (D/MT) and Tester (D/MT) and **H. R. 481.** Connolly (D/VA) and 3 Co-sponsors. Amends the Internal Revenue Code of 1986 to allow a credit against income tax for qualified conservation contributions which include National Scenic Trails.

S. 901. Tester (D/MT) and Risch (R/ID). Amends the Land and Water Conservation Fund Act of 1965 to ensure that amounts are made available for projects to provide recreational public access, and for other purposes.

S. 1201. Lieberman (ID/CT) and 8 Co-sponsors. Conserves fish and aquatic communities in the U.S. through partnerships that foster fish habitat conservation, to improve the quality of life for the people of the U.S., and for other purposes.

S. 1265. Bingaman (D/NM) 4 Co-sponsors. Amends the Land and Water Conservation Fund Act of 1965 to provide consistent and reliable authority for, and for the funding of, the land and water conservation fund to maximize the effectiveness of the fund for future generations, and for other purposes.

H. R. 390. Thompson (D/CA). Amends the Internal Revenue Code of 1986 to provide an exclusion from the gross estate for certain farmlands and lands subject to qualified conservation easements, and for other purposes.

H. R. 1593. Bishop (D/NY) and Hanna (R/NY). Amends the Internal Revenue Code of 1986 to allow an unlimited exclusion from transfer taxes for certain farmland and land of conservation value, and for other purposes.

H. R. 1917. Kind (D/WI) and Wittman (R/VA). Authorizes U.S. Fish and Wildlife Service, to conduct a Joint Venture Program to protect, restore, enhance, and manage migratory bird populations, their habitats, and the ecosystems they rely on, through voluntary actions on public and private lands, and for other purposes.

Endangered Species Act of 1973 (ESA)

S. 826. Feinstein (D/CA) and **H. R. 1907.** Calvert (R/CA) and Issa (R/CA). Requires the Secretary of the Treasury to establish a program to provide loans and loan guarantees to enable eligible public entities to acquire interests in real property that are in compliance with habitat conservation plans approved by the Secretary of the Interior under the ESA, and for other purposes.

H. R. 39 Young (R/AK). Delists the polar bear as a threatened species under the ESA.

H. R. 1042. Baca (D/CA) and 9 Co-sponsors. Amends the ESA to require that certain species be treated as extinct for purposes of that Act if there is not a substantial increase in the population of a species during the 15-year period beginning on the date the species is determined to be an endangered species, and for other purposes.

H. R. 1719. McMorris-Rodgers (R/WA) and 9 Co-sponsors. Better informs consumers regarding costs associated with compliance for protecting endangered and threatened species under the ESA.

Energy

S. 629. Murkowski (R/AK) and 8 Co-sponsors. Improves hydropower, and for other purposes.

S. 892. Burr (R/NC) and 15 Co-sponsors. Establishes the Department of Energy and the Environment, and for other purposes.

S. 1343. Bingaman (D/NM). Provides for the conduct of an analysis of the impact of energy development and production on the water resources of the U.S., and for other purposes.

H. R. 230. Jackson Lee (D/TX). Authorizes the Secretary of Energy to make loan guarantees for cellulosic ethanol production technology development.

Federal Water Pollution Control Act (FWPCA)

S. 272. Manchin (D/WV) and 7 Co-sponsors. Amends the FWPCA to clarify and confirm the authority of the U.S EPA to deny or restrict the use of defined areas as disposal sites for the discharge of dredged or fill material.

S. 468. McConnel (R/KY) and 2 Co-sponsors and **H. R. 960.** Rogers (R/KY) and Capito (R/WV). Amend the FWPCA to clarify the authority of the Administrator to disapprove specifications of disposal sites for the discharge of, dredged or fill material, and to clarify the procedure under which a higher review of specifications may be requested.

S. 661. Lautenberg (D/NJ). Amends the FWPCA to ensure the safe and proper use of dispersants in the event of an oil spill or release of hazardous substances, and for other purposes.

S. 711 Lautenberg (D/NJ). Amends the Safe Drinking Water Act and the FWPCA to authorize the Administrator of the EPA to reduce or eliminate the risk of releases of hazardous chemicals from public water systems and wastewater treatment works, and for other purposes.

H. R. 395. McNerney (D/CA). Amends the FWPCA to extend the pilot program for alternative water source projects.

H. R. 457. McKinley (R/WV) and 4 Co-sponsors. Amends the FWPCA to remove the Administrator of the U.S. EPA's authority to disapprove after a permit has been issued by the Secretary of the Army under section 404 of such Act.

H. R. 517. Young (R/AK) and 9 Co-sponsors. Amends the FWPCA to eliminate the authority of the Administrator of the U.S. EPA to deny or restrict the use of a defined area as a dredged or fill material disposal site, and for other purposes.

H. R. 2018. Mica (R/FL) and 19 Co-sponsors. Amends the FWPCA to preserve the authority of each State to make determinations relating to the State's water quality standards, and for other purposes.

Invasive Species

S. 471. Stabenow (D/MI) and 6 Co-sponsors and **H. R. 892.** Camp (R/MI) and 21 Co-sponsors. Requires the Secretary of the Army to study the feasibility of the hydrological separation of the Great Lakes and Mississippi River Basins.

S. 1324. Boxer (D/CA) and 2 Co-sponsors. Amends the Lacey Act Amendments of 1981 to prohibit the importation, exportation, transportation, and sale, receipt, acquisition, or purchase in interstate or foreign commerce, of any live animal of any prohibited wildlife species, and for other purposes.

Government Regulations

H.R. 125. Gingrey (R/GA) and 23 Co-sponsors. Requires Congress to specify the source of authority under the U.S Constitution for the enactment of laws, and for other purposes.

H. R. 214. Young (R/AK). Establishes a Congressional Office of Regulatory Analysis, to require the periodic review and automatic termination of Federal regulations, and for other purposes.

H. R. 1026. Waters (D/CA) and 6 Co-sponsors. Extends the authorization for the national flood insurance program, to identify priorities essential to reform and ongoing stable functioning of the program, and for other purposes.

Mining

S. 897. Bingaman (D/NM) and 4 Co-sponsors and **H.R. 1365.** Rahal (D/WV). Amends the Surface Mining Control and Reclamation Act (SMCRA) of 1977 to clarify that uncertified States and Indian tribes have the authority to use certain payments for certain noncoal reclamation projects and acid mine remediation programs.

S. 1003. Tester (D/MT). Amends the SMCRA of 1977 to limit the liability of a State performing reclamation work under an approved State abandoned mine reclamation plan.

S. 1455. Tester (D/MT). Amends the SMCRA of 1977 to authorize certified States

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Marion, IL 62959

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and tribes to use amounts made available from the Abandoned Mine Reclamation Fund for hard rock and coal mining reclamation projects and to extend liability protection to certified States and Indian tribes carrying out approved abandoned mine reclamation programs.

H. R. 785. Pearce (R/NM) and 2 Co-sponsors. Amends the SMCRA of 1977 to clarify that uncertified States and Indian tribes have the authority to use certain payments for certain noncoal reclamation projects.

National Environmental Policy Act (NEPA)

H. R. 332. Filner (D/CA). Amends Title 10, U.S. Code, to require the Department of Defense and all other defense-related agencies of the U.S. to fully comply with Federal and State environmental laws, including certain laws relating to public health and worker safety, etc.

Public Service

S. 896. Bingaman (D/NM) and 2 Co-sponsors and **H. R. 587.** Grijalva (D/AZ) and Markey (D/MA). Amends the Public Lands Corps Act of 1993 to expand the authorization of various departments to provide service opportunities for young Americans; help restore the Nation's natural, cultural, historic, archaeological, recreational and scenic resources; train a new generation of public land managers and enthusiasts; and promote the value of public service.

H. R. 494. Kaptur (D/OH). Authorizes the President to reestablish the Civilian Conservation Corps as a means of providing gainful employment to unemployed and underemployed citizens of the U.S. through the performance of useful public work, and for other purposes.

Water Quality

H. R. 553. Markey (D/MA) and 4 Co-sponsors. Amends the Safe Drinking Water Act regarding an endocrine disruptor screening program.

H. R. 872. Gibbs (R/OH) and 21 Co-sponsors. Amends the Federal Insecticide, Fungicide, and Rodenticide Act and the Federal Water Pollution Control Act to clarify Congressional intent regarding the regulation of the use of pesticides in or near navigable waters, and for other purposes.

Water Resources

S. 399. Baucus (D/MT) and Tester (D/MT). Modifies the purposes and operation of certain facilities of the Bureau of Reclamation to implement the water rights compact among the State of Montana, the Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, and the U.S., and for other purposes.

S. 573. DeMint (R/SC). Establishes a harbor maintenance block grant program to provide maximum flexibility to each State to carry out harbor maintenance and deepening projects in the State, to require transparency for water resources development projects carried out by the Corps of Engineers, and for other purposes.

H. R. 700. Walberg (R/MI). Provides a moratorium on the issuance of flood insurance rate maps, to assist property owners in adapting to flood insurance rate map changes, and for other purposes.

H. R. 1421. Boren (D/OK) and Cole (R/OK). Amends the Water Resources Development Act of 1986 to clarify the role of the Cherokee Nation of Oklahoma with regard to the maintenance of the W.D. Mayo Lock and Dam in Oklahoma

H. R. 1865. Gibbs (R/OH) and 21 Co-sponsors. Protects the right of individuals to bear arms at water resources development projects administered by the Secretary of the Army, and for other purposes.

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