River Crossings

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Chairman's Comments

As my chairmanship comes to a close I would like to congratulate Bobby Wilson, Fish Chief with the Tennessee Wildlife Resources Agency, as the incoming MICRA chairman. Bobby will be installed at our meeting in January. I know he will be an exceptional chairmen. I also would like to thank our MICRA coordinator, Greg Conover, for his hard work and assistance.

The most important role of MICRA is to foster interstate cooperation in the management of our important interjurisdictional fisheries and their habitats. As part of that role, we have made great strides over the last two years getting Asian carp recognized as a real ecological and economic threat throughout the Mississippi River Basin. Our persistence at educating decision makers is beginning to bear fruit, with federal funding finally being directed to Asian carp issues in the Upper Mississippi River and Ohio River sub-basins last fiscal year. I see a day when we may finally get funding to implement the national Asian carp management and control plan.

But that is only a part of what we have done. MICRA is developing a Aquatic Habitat Action Plan for the Mississippi River Basin and is standing up a habitat committee to work in the large rivers in the basin. This committee with its members of diverse geographic backgrounds will, in my opinion, develop a synergy that will be a resource for future fisheries management of the interjurisdictional fish and mussel species in the basin. Quality fisheries begin with quality habitat.

Asian Carp Issues

Mapping the microbes present in the digestive systems of fish species holds promise for monitoring the presence of Asian carp and ultimately preventing their spread, according to a study published in *Nature's ISME Journal* (See: http://www.nature.com/ismej/journal/vaop/ncurrent/full/ismej2013181a.html). Gut microbiota – the microbial communities present in the digestive tracts of living things – are unique, according to Wen-Tso Liu, co-author of the study and a professor of civil and environmental engineering at the University of Illinois. For that reason, careful analysis of fish gut microbiota can reveal host-specific biomarkers shed in fish feces that indicate the presence of a specific species, promising the development of precise monitoring systems. Since fish feces are plentiful in waterways, monitoring could be easier than with techniques that have focused on detecting the DNA of the targeted species in sloughed-off skin tissue, Liu says.

The researchers used a next-generation gene sequencing technology called

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16S pyrosequencing, which focuses on the 16S rRNA gene sequences, to analyze the gut microbiota of the invasive silver carp and the native gizzard shad. They successfully discovered potential biomarkers for silver carp and are working to refine them, Liu says. In addition, the research illuminated some important similarities and differences in the two species. For example, he says, gizzard shad harbor microbial communities that are 10 times more diverse than that of silver carp, showing that their digestive processes are significantly more complicated. The researchers also discovered a common food-source microbe, which proves that the fish compete for the same food. "This is why invasive species can be dangerous," he says. "They can eat the same food, and if the invasive species consumes more food, then the native species can be out-competed and their population will start to decline, leading to ecological disaster."

On the strength of these findings, the researchers are beginning an extensive project to confirm their findings in the approximately 50 different fish species that occur in the Chicago River in order to map their gut microbiota and develop biomarkers for each species. The results will lead to a precise monitoring methodology, but the benefits will likely extend further, Liu says. "There is a lot more beyond just monitoring," Liu says. "We will also learn more about the diversity of fish, their diets, how their diets are related to their gut microbiota and how they metabolize inside the gut."

Meanwhile on May 31, Asian carp DNA turned up for the first time in Wisconsin's Lake Michigan waters (i.e., Sturgeon Bay in Door County). The sampling was part of a Lake Michigan-wide survey looking for evidence of Eurasian ruffe, a different type of invasive fish species. The water sample was not screened for the presence of Asian carp DNA until this fall, and was the only one out of a total of 282 water samples taken from Wisconsin's Lake Michigan waters this year showing positive results for Asian carp. The sampling was part of an invasive fish survey conducted by government crews and researchers from the University of Notre Dame and *The Nature Conservancy*. Fifty of those samples were taken in the Sturgeon Bay area. Nobody is sure at this point what to make of this single piece of microscopic evidence. There are several potential sources for the genetic scraps, including boat hulls, bird feces, or contaminated bait buckets. It could, of course, also signal the presence of a live fish. Wisconsin Department of Natural Resources fisheries chief Mike Staggs said the news is serious, but it's a long way from indicating Asian carp have arrived and are breeding in Wisconsin's Lake Michigan waters. He said even the capture of a handful of live fish doesn't necessary mean the fish have successfully invaded. The *Milwaukee Journal Sentinel* has posted an excellent video online showing how scientists use DNA to track Asian carp. In a second video Dr. David Lodge, Notre Dame University explains the DNA project and its application in helping to prevent an Asian carp invasion of the Great Lakes.

In Minnesota, nine new gates are being installed in the Mississippi River's Coon Rapids Dam in the Twin Cities to prevent Asian carp from invading the river's headwaters. The two-year project will cost $16 million. A silver carp was found dead near Winona, MN about 80 river miles downstream, in August. This is the farthest north that the species has been detected so far. The nine gates, including six 97-footers, will replace aging rubber tube gates, which are less effective against fish passage that may occur during serious flooding.

The Michigan Department of Natural Resources Fisheries Division in collaboration with the AIS core team and *Michigan-Out-of-Doors TV* has developed and produced an education and outreach video focusing on the

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identification of juvenile Asian carp. The video is targeted at the common angler to prevent Asian carp spread through bait use and other means. It is posted online at: http://www.youtube.com/watch?v=tekJq3L0gPA&feature=youtu.be

Sources: *Science Daily*, 10/17/13; Dan Egan, *Milwaukee Journal Sentinel*, 5/11/2013; *TheFishSite*, 10/22/13; and Jim Adams, *Minneapolis Star Tribune*, 10/22/13 BACK TO TOP

Governors Endorses USFWS as the Lead Federal Agency for Aquatic Invasive Species Control

The *Midwestern Governors Association* (MGA) recently sent President Obama a letter asking that he designate the U.S. Fish and Wildlife Service as the singular, lead federal agency for U.S. efforts to combat invasive species. The letter, along with a series of informational documents, is part of Minnesota Governor Mark Dayton's agenda as MGA Chair to combat the spread of aquatic invasive species in the region. "Aquatic invasive species pose serious threats to our region's environment and economy," said Dayton. "By working together across state boundaries and with the federal government, we are far more likely to succeed in our fight against this invasion…." Local, state and federal governments, along with international and private sector organizations, all have significant roles to play in the introduction, containment and eradication of invasive species. The MGA letter discussed this complexity, as well as the large number of federal agencies that play a role in the federal response. A lead federal agency would facilitate a better partnership between states and the federal government according to the MGA.

Source: *Midwestern Governors Association News Release*, 10/29/13 BACK TO TOP

Rare Missouri Fish Granted Endangered Status

The grotto sculpin, a rare fish found in Missouri, was granted endangered species status by the U.S. Fish and Wildlife Service (USFWS) in late September. Improper waste disposal, contaminated groundwater and improper maintenance are some of the factors that have contributed to a decline in water quality in the areas where the grotto sculpin is found. In a separate rule, the USFWS decided not to designate the fish's habitat as "critical habitat." The agency said that city, county and private interest groups have committed to implementing a conservation plan for the creature, making such designation unnecessary.

Grotto sculpin - USFWS Photo

"Protection for the grotto sculpin has been a wake-up call for the communities of southeastern Missouri to stop carelessly polluting their water," Noah Greenwald, endangered species director at the *Center for Biological Diversity*, said in a statement. "I hope very much that this plan is more than empty promises and that real action is taken to secure a future for this unique cave fish." The grotto sculpin lives in and around five caves and one stream in Perry County, MO, according to the Missouri Department of Conservation. Testing done earlier this year determined that the fish, which grows to 2.5 to 4 inches in length, is genetically different from the banded sculpin, another fish found in the United States.

Source: Jessica Estepa, *Greenwire*, 9/25/13 BACK TO TOP

ESA Protection Granted for Two Tennessee River Freshwater Mussels

The U.S. Fish and Wildlife Service (USFWS) in late September granted endangered species protections for two freshwater mussels native to the Tennessee River (the slabside pearlymussel and the fluted kidneyshell). Both mussels are threatened by mining, dams and pollution. "We're excited that these freshwater species have finally received protections after so many years of waiting for action," said Tierra Curry, a biologist with the *Center for Biological Diversity* (CBD). According to the CBD, protections were first sought for the pearlymussel in 1984 and the kidneyshell in 1999. The listings come as part of a settlement made between the USFWS and the CBD in 2011 to fast-track decisions on 757 species.

Slabside Pearlymussel

Fluted Kidneyshell

USFWS Photos

A separate rule has established about 1,380 miles of river in five states – AL, KY, MS, TN and VA – as critical habitat for the mussels. The agency determined that habitat loss is a key

threat to both species. The Slabside Pearlymussel, which can grow up to about 4 inches in length and is greenish-yellow in color, once was found in all five of the states where designated critical habitat is located. The species now is no longer found in Kentucky, and the remaining populations are found in 11 streams in the Tennessee River watershed. The Fluted Kidneyshell, a yellow-brown mussel that can grow up to 5 inches in length, once had populations in Alabama, Kentucky, Tennessee and Virginia. It no longer exists in Alabama and now lives in 12 streams.

Source: Jessica Estepa, *Greenwire*, 9/26/13 BACK TO TOP

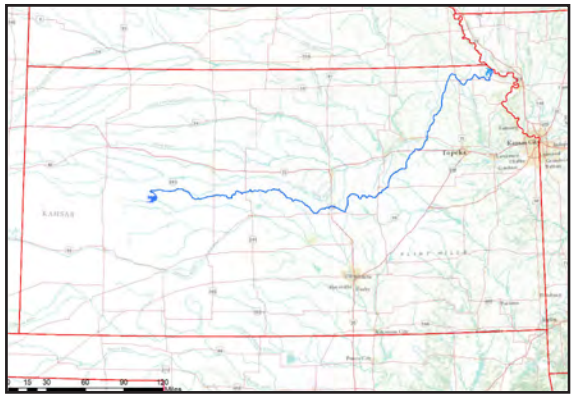
Missouri River Water Diversion Proposal Revived

Concerns about water supply and grain production in Kansas have caused state officials and the U.S. Army Corps of Engineers (Corps) to agree to re-evaluate a 1982 federal water supply study that proposed transporting billions of gallons of water annually from the Missouri River to Kansas farms. The new analysis, to be started this year and completed in 2015, will reassess the Kansas Aqueduct, one of four projects evaluated 31 years ago to provide water to high plains farms in Kansas and reduce the draw on the Ogallala Aquifer, the region's primary source of water for irrigation. None of the four projects were built, but the Kansas Aqueduct attracted significant attention.

The Aqueduct would draw water from the Missouri River about 145 kilometers (90 miles) upstream of Kansas City and transport it by a canal 41 meters (137 feet) wide and 7 meters (23 feet) deep to a reservoir roughly 600 kilometers (375 miles) away in western Kansas. The cost of the new study ($300,000.00) will be shared equally by the state and the federal government, said Mark Rude, executive director of the *Southwest Kansas Groundwater Management District*. He added that the region's strong farm economy and the urgency of extending the Ogallala Aquifer's life as a source of water for agriculture justify the study. "The Kansas Aqueduct Project must be pursued while production income, property values and the economic system are in place to support the project," Rude wrote in a June letter to state water officials.

Because of high plains geology and climate, water percolates into the Ogallala Aquifer each year in inches; but in order to sustain a thriving grain-and-cattle industry, water is pumped out in feet. Rude said that current rates of groundwater extraction – mining, really – are about nine percent sustainable. In other words, the amount of water pumped out of that part of the aquifer would have to be cut by 90 percent to find a balance. Such a reduction would decimate the region's towns and the economic structure he said. Economics are foremost in Rude's mind because the price tag of the aqueduct would be at least double the estimated $3.6 billion price tag of three decades ago, and comparable in scale to massive water diversions like the 540-kilometer (360-mile) Central Arizona Project that was approved before the Carter administration and built mostly with federal money.

According to the 1982 study, the Kansas Aqueduct would require at least 16 pumping stations to lift the water nearly 550 meters (1,800 feet) over its 375-mile course to the High Plains. The water would be drawn from wells drilled next to the Missouri River, but be designed to divert water during flood stage. As much as 4.9 billion cubic meters (4 million acre-feet) of water could be moved each year, though less than half of that – 2 million cubic meters (1.6 million acre-feet) or roughly 5 percent of the river's average annual runoff – would be a firm supply, Rude said. One acre foot equals 326,000 gallons. A terminal reservoir to hold the water would also be needed, as well as secondary canals to move water from that reservoir to users across the region. These secondary canals were not included in the $3.6 billion construction cost from the 1982 study, which also estimated an annual operating cost of $413 million. Rude acknowledges that the days of deep federal investment are probably over. Farmers, who now pay only for the energy to pump water, and other local users will have to shoulder the cost, and that represents the chief uncertainty for the project.



Route of the Proposed Kansas Aqueduct

Because of the small amount of funding available, the study will have a narrow focus, said John Grothaus, chief of water-project planning for the Corps' Kansas City District. "There's enough money to scratch the surface," Grothaus said. That means new estimates for the cost of construction and potential water demand will be made, but neither an environmental analysis nor an assessment of economic trade-offs will be completed.

Unlike many other basins in the Western United States, the Missouri River does not have a compact that divides water among its states. That will lead to the project's second almost certain hang up: opposition from its neighbors. "Whether sister states are comfortable is a conversation to be had," Rude said. For now, Kansas's neighbors are watching to see what happens with the study, said Mike Hayden, executive director of the *Missouri River Association of States and Tribes* (MoRAST), a basin forum comprising five states and a tribal coalition. Even states farther downstream in the Mississippi River Basin, remembering the barges stranded

along a depleted river during the 2012 drought, might oppose such a large-scale diversion if it threatens the multi-billion dollar shipping industry, even if the aqueduct only withdraws water during periods of high river flow.

"We consider the Missouri River open for new water rights development," Tracy Streeter, director of the Kansas Water Office said. Still, Streeter said that the state considers a water right application from Rude's groundwater district premature. "We don't have a handle on the place of use or what the beneficial uses will be," Streeter said. "Until we really know who uses the water and where it comes from, an application is missing some pieces." Kansas water law generally follows the doctrine of prior appropriation, in which a pecking order for water is set by who claims it first. Putting a claim in today for the Missouri would establish the groundwater district's place in line. "We're not picking a fight," Rude said. "We have a need and a significant one."

Source: Brett Walton, *Circle of Blue*, 10/24/13 BACK TO TOP

Lower Mississippi River Conservation Management Plan

Three endangered species – the Interior Least Tern, the pallid sturgeon and the fat pocketbook mussel – will all benefit from recent changes in river engineering practices, which have been formalized in a landmark Conservation Management Plan (CMP) for the Lower Mississippi River signed at the end of August by the U.S. Army Corps of Engineers (Corps) and the U.S. Fish and Wildlife Service (USFWS). This CMP is believed to represent the first large-scale application of a powerful but seldom-used tool for proactive conservation in the Endangered Species Act (ESA): Section 7(a)(1). Under that Section, federal agencies work together and with partners to understand the effects of agency actions on endangered species and to formulate best management practices. This partner-building process is intended as a positive alternative to the often confrontational path of formal ESA consultation under Section 7(a)(2).

The CMP describes the full range of federal engineering actions on the Lower Mississippi River, from levee construction to navigation channel dredging. For each of these actions, the plan analyzes the effects on endangered species and proposes best practices to avoid negative impacts and integrate habitat improvement into standard operating procedures. One example of an engineering practice that benefits fish and wildlife is "dike notching." In order to develop the Lower Mississippi River for barge navigation, the Corps built nearly 400 linear miles of hard rock dikes extending from the river bank into the main channel. These dikes capture sediment along channel margins and work to maintain a deep navigation channel. Notching involves making a hole in a dike by simply removing enough rock to provide a path for river current between the dike and the shoreline. A properly designed notch restores depth and habitat complexity below the notch, providing substantial benefits to endangered species without any negative effect to the original engineering purpose of the dike.

Interior Least Tern, Pallid Sturgeon, and Fat Pocketbook Pearly Mussel (top to bottom), American Bird Conservancy, NW Arkansas Aquarium Society, and USFWS Photos, respectively.

Dike notching makes Least Tern nesting sandbars less accessible to mammalian predators that prey on tern eggs and chicks; creates important side-channel habitat for pallid sturgeon larvae and juveniles; and increases the overall productivity of small fish species. By 2013, about 30 percent of the nearly 1,000 dikes on the Lower Mississippi River had been notched, and new dikes are now being constructed with this design feature. Dr. Mike Scott of the University of Idaho, one of the nation's experts on the protection of conservation-reliant wildlife, praised the CMP, saying: "This agreement is an uncommonly creative use of section 7(a)(1). It formalizes practices that create favorable habitat conditions for several imperiled species over areas large enough to make a conservation difference. It is the kind of multi-agency partnership that is needed to manage species in human-dominated ecosystems that require management for the foreseeable future."

Strong partnerships were necessary to develop and implement the CMP. For example, the *American Bird Conservancy* (ABC) has been working with the Corps and the USFWS for more than a decade to define the population ecology of the Interior Least Tern. The Lower Mississippi River Conservation Committee pulled state agencies together to develop a common vision of Lower Mississippi River management and works with Corps districts to identify, design, and implement local restoration projects throughout the river. Long-term implementation of the plan will continue to require such strong collaboration between federal and state agencies, as well as nongovernmental partners.

When the Interior Least Tern was first listed, it was widely believed that river engineering

threatened the species' continued existence. With this CMP, the USFWS and the Corps are successfully transforming 'threats' into conservation tools. Today, over 10,000 Interior Least Terns nest on the Lower Mississippi River, almost exclusively within dike fields, and more than 7,000 nests can be found in hundreds of widely distributed colonies on a number of regulated rivers throughout the mid-continent, said Casey Lott, ABC's Coastal and Waterways Program Coordinator. "The Lower Mississippi River plan should be an inspiration for the development of similar plans in other regions with Interior Least Tern and for other listed species in general," added George Fenwick, President of ABC.

Source: Robert Johns, *American Bird Conservancy Media Release*, 9/9/2013 BACK TO TOP

Louisiana's Mississippi River Diversion Controversy

Historically, the Mississippi River carried hundreds of millions of tons of sediment a year from its sprawling drainage basin to the Gulf of Mexico. And, most important for Louisiana, the river regularly overflowed, spreading nourishing silt into its coastal marshes. But all of that ended when Congress ordered the U.S. Army Corps of Engineers (Corps) to wall off the river with levees after the devastating 1927 flood. These levees strangled marshes by cutting off their sediment supply, and since then the state has lost 1,900 square miles of land, an area as large as Delaware.

"Our state was growing three-quarters of a square mile a year before the Corps put the levees in the river," said Garret Graves, chairman of the *Coastal Protection and Restoration Authority of Louisiana* (CPRAL) and Republican Gov. Bobby Jindal's executive assistant for coastal activities. "When the Corps put the levees in the river, we had an immediate reversal – we went to about 28 square miles of land loss per year." Now, Graves – a veteran Capitol Hill staffer who worked for former Louisiana Sen. John Breaux (D) and former Rep. Billy Tauzin (R), among others – is now the point man on the effort to recreate the Mississippi River's natural flows by cutting holes in the levees and using controlled "diversions" of the river to push sediment into waning marshes. The idea is so big it exceeds the hefty body of scientific knowledge on coastal marsh dynamics. But given the rate at which Louisiana is slipping into the Gulf of Mexico, many believe anything less than big isn't worth doing. "If anyone wants to really do something about coastal Louisiana – something scalable – there isn't time for lab experiments," said Denise Reed, chief scientist at the nonprofit *Water Institute of the Gulf* (WIG). "That time is gone," he said.

The CPRAL, created by the state after Hurricane Katrina in 2005, drafted a coastal master plan for turning the annual land loss into a gain by 2050 while maintaining flood protection for communities and keeping the river open for commerce. The state Legislature unanimously approved the $50 billion plan last year, and the authority sees diversions as by far the most cost-effective way of building new land. Although the largest pot of money in its plan – $20 billion – is pegged for dredging sediment and pumping it over the levees to build 200 square miles of new marsh, the state predicts it will create a third more land with the less than $4 billion it plans to spend on diversions. Louisiana is slated to get $1.2 billion tagged for diversions and barrier islands from criminal settlements related to the 2010 *Deepwater Horizon* oil spill, and potentially billions of dollars more from civil fines. So the state is poised to have pockets deep enough to back up its ambitious plan.

But just as the restoration push is ramping up, bitter opposition is rising among some watermen. Many of the state's politically powerful oystermen have long opposed diversions, and now charter boat captains and others with businesses tied to the state's $19 billion annual wildlife tourism industry are lending their voices to the opposition. George Ricks, a long time fisherman, guide and charter boat captain is concerned that the diversions will weaken the marshes. He points to marsh grasses that have very shallow root masses. Scientists believe high levels of nutrients in river water discourage these grasses from growing deep roots. Ricks blames an earlier diversion of nutrient laden water for weakening the marsh by promoting shallow root growth and making it more susceptible to storm surges. Broad swaths of the marsh were destroyed when Hurricane Katrina drove through the marshes in 2005, hurling the storm surge west "It'll (the diversion) build sediment over a period of time," Ricks said, "but what they build won't hold up to storm surge."

But, Reed, the WIG wetland scientist said, there's another factor at play. Because the existing Caernarvon diversion was built to minimize the amount of sediment flowing from the river, the marshes far from the diversion that Ricks is talking about, like those in Lake Amedee, are getting nutrients from the water but not its mineral soils, which would weigh the grasses down. "The soils then are largely organic in nature and are very disruptable by hurricanes," she said. "What would happen if you have a diversion that sends a lot of sediment is you would have less organic and more mineral soil, and even though the marsh might have an altered root-to-shoot ratio, the key thing is that the sediment is going to be heavier and it's not going to get torn up and thrown away by hurricanes." Ultimately, Reed said, it is impossible to know exactly how a sediment diversion will work until you try it. Scientists know a lot about marsh dynamics, but how a diversion would work in practice depends on variables like waves, the amount of water moved by storms, and winds. "There's only so much you can know before you take an action," she said. "The key is then how you make sure that you can handle that aftermath and you can then make adjustments and measure it as you go."

But Ricks isn't just worried about the health of the marsh. He's also worried about the health of the fish living in it, and comments on the proposed diversions from the National Marine Fisheries Service (NMFS) seem to support some of his concerns. "Most coastal restoration efforts can benefit nursery and foraging functions supportive of a wide variety of economically important marine fishery species," wrote Roy Crabtree, administrator of NMFS's Southeast Region. "However, the proposed diversion may have adverse impacts to economically important estuarine/marine fisheries and their habitats." Specifically, NMFS officials are concerned that the diversion could displace fish from productive habitats to less supportive habitats, reduce fishery productivity, damage habitat for federally managed fish species or their prey, leave wetlands more susceptible to storms, degrade water quality, and harm commercial fishermen and the recreational fishing industry. One of the key concerns named by both fishermen and the NMFS is that the state is planning to open the diversions during times of high water – usually the spring. That would send a slug of cold fresh water into estuaries during a key time in the life cycles of some marine species like shrimp. "Freshening substantial portions of the basin and localized lowering of water temperature for five months of the year ... would affect a broad range of fishery species during a variety of life stages and their prey," Crabtree wrote.

Proponents of diversions say, though, that this is precisely what happened naturally during spring floods. "What you want to do is mimic the natural cycle," said David Muth, director of the *National Wildlife Federation's Mississippi River Delta Restoration* program. Indeed, contends Muth, these freshwater pulses can create a much more productive ecosystem. "Too many people, for too long, have been living in a very diminished system and they don't know how it could be," he said. The larger question is whether the goal is to preserve what is in place now or to attempt to recreate some of what was lost. Because of wetlands loss and saltwater intrusion, the location and types of habitats on Louisiana's coast today are very different from what was there in the past. "People aren't catching fish now where they were fishing them 20 years ago," Graves said. "Our secret fishing holes aren't our grandfathers' secret fishing holes. The salt water's coming in, the entire estuary's moving in." Pushing those boundaries back, diversion proponents say, may move fish in the near term but will ultimately save the fishery.

Charter boat captain Ryan Lambert has seen a natural river diversion grow the marshes and he agrees with diversion proponents. "We know the river did it without our help, so we're pretty sure it can do it again," he said. Over the 33 years he has been running tours, Lambert has watched the marsh disappear. The geography he grew up with is now being rewritten as areas that were once bays and bayous become open water. "Thirty-one names of places where I used to fish every day are gone," he said. The National Oceanic and Atmospheric Administration "literally just took them off the map." But Lambert is seeing that picture change, slowly, in a swath of marsh he leases for duck hunting on the east bank of the river below where the levees end. With Mississippi River sediment able to wash in, the wetlands are growing, he said, and provide homes to an abundance of not just fish but birds, alligators, snakes and turtles. What he has seen there has led him to come out in support of diversions, despite the fire he's taken for it from some of his fellow fishermen. "We know the river did it without our help, so we're pretty sure it can do it again," he said, "We've just got to give it a shot."

Source: Annie Snider, *Greenwire*, 8/19/13 BACK TO TOP

Judge Orders EPA to Set MRB Nutrient Standards – or Explain Why They Aren't Needed

A federal judge ruled in late September that the U.S. EPA must decide whether to set numeric standards for nutrient pollution in the 31-state Mississippi River Basin. U.S. District Judge Jay Zainey in New Orleans gave EPA six months to set standards for phosphorus and nitrogen pollution or explain why they are not needed. Environmental groups had petitioned EPA in 2008 to set such limits and develop cleanup plans for nutrient pollution across the country, especially in the Mississippi River Basin. EPA ultimately denied the petition, saying it would be too expensive and time consuming. Then a year and a half ago, environmental groups led by the *Natural Resources Defense Council* (NRDC) filed a court challenge aimed at forcing the agency to make a formal determination of whether a rule making was necessary.

So the judge put the agency in a tough spot and in mid-November, EPA prepared paperwork to appeal the judges order. On one hand, EPA has for years been trying to persuade states to move toward numeric nutrient criteria, which federal regulators and environmentalists see as preferable to narrative criteria since they are meant to trigger action on water pollution problems before negative effects are seen. But on the other hand, few would argue that EPA has the time, money or staff to promulgate such complex criteria for the entire Mississippi River Basin. The agency's effort to force the state of Florida to adopt numeric criteria in 2009 set off a years-long political maelstrom and revealed the development of criteria to be an incredibly time-consuming and technically complex process. NRDC senior attorney Ann Alexander acknowledged the political and bureaucratic challenges but said they don't excuse inaction. "I think they certainly have the capacity to do something," she said. "We made clear in our litigation papers that we understand the problem with coming out with 50 standards for 50 states in a compressed time frame and there are ways around that."

While EPA clearly does not want to undertake such an expansive process for the 31-state Mississippi River Basin now, stakeholders suspect that the agency also would not want to say that numeric criteria aren't needed. That could be seen, they say, as down playing the problem of nutrient pollution in the river, which is manifest each year in massive algal blooms in the Gulf of Mexico that suck up

dissolved oxygen as they decompose, spawning "dead zones." Rather than setting federal standards, EPA has expressed a preference for working with states on nutrient pollution problems.

While Judge Zainey ordered EPA to decide on the determination, he denied the environmental groups' request that the decision be based solely on scientific considerations. "Nothing in the authorizing statutory text of the [Clean Water Act] expressly precludes EPA from considering the very factors that it cited in the Denial," he wrote, referring to EPA's arguments that a rule making would be an overly complex burden. Agriculture groups, which have intervened on the side of EPA in the suit, took heart in that point. "The issue is too complex, it is too site-specific, and if they make a necessity determination it's going to be 31 times Florida in terms of cost, in terms of complexity, in terms of all the issues that are going to be associated with it," said Don Parrish, senior director of regulatory relations at the *American Farm Bureau Federation.* "There is more that goes into this decision than just science and technology," he said. "It's also social impacts."

Source: Annie Snider, *Greenwire*, 9/24 and 11/19/13 BACK TO TOP

Court Rules Against EPA on CAFO Discharges

A federal court in late October ruled that U.S. EPA cannot require a West Virginia poultry operation to obtain a Clean Water Act permit for its stormwater runoff in what farm groups are calling a major victory. Judge John Bailey in the U.S. District Court for the Northern District of West Virginia found that discharges from Lois Alt's farm in Old Fields, WV, were covered by a Clean Water Act exemption for agricultural stormwater. "Common sense and plain English lead to the inescapable conclusion that Ms. Alt's poultry operation is 'agricultural' in nature," Bailey wrote, "and that the precipitation-caused runoff from her farmyard is 'stormwater.'"

The case, Alt v. EPA, had been closely watched by both agricultural interests and environmentalists. Farm groups feared that a favorable ruling for EPA would open concentrated animal feeding operations, or CAFOs, to permitting requirements for stormwater discharges. The *West Virginia Farm Bureau* and the *American Farm Bureau Federation* joined the lawsuit on behalf of Alt. Environmental groups that intervened on behalf of EPA said the decision puts the Chesapeake Bay and other waters of the United States in danger of pollution from animal agriculture operations. "We are disappointed in the court's ruling and are deeply concerned that the ruling will make it more difficult to restore the health of waterways across the country, including the Chesapeake Bay," the *Potomac Riverkeeper*, the *West Virginia Rivers Coalition*, the *Waterkeeper Alliance*, the *Center for Food Safety*, *Food and Water Watch*, and *Earthjustice* said in a joint statement.

Alt filed the lawsuit in June 2012 after EPA issued a compliance order for stormwater runoff that it determined to be coming from her CAFO in West Virginia. EPA said dust and manure from the operation's eight poultry confinement houses had settled on the farmyard and had been exposed to precipitation, leading to runoff into local waterways. The agency told Alt she must obtain a Clean Water Act permit for the discharges or face penalties of up to $37,500 a day. In court filings, Alt argued she maintained best-management practices and took steps to reduce the amount of manure and litter that would be exposed to rain and snow. She argued the operation didn't require a Clean Water Act permit for the runoff because the law explicitly exempts agricultural stormwater discharge from regulation. But EPA said the stormwater exemption did not apply to the Alt CAFO. The exemption, EPA argued, applied only to areas where manure, litter or process wastewater has specifically been applied in accordance with nutrient management practices, not to areas where they may have inadvertently accumulated during livestock operations. All runoff from wastes generated on the CAFO production areas – including the place where animals are confined, the manure storage area and the waste containment area – required a permit, the agency said.

However, in March, EPA moved to dismiss the case, arguing that it was moot because the agency had withdrawn the original violation notice that prompted the lawsuit. But Bailey rejected EPA's request because he said such action wouldn't address the central question of whether the agency can force livestock producers to obtain permits for stormwater discharge. In his October ruling, Bailey noted that courts have long upheld a broader definition of agricultural stormwater discharge than contained in EPA's 2003 CAFO rule and in its arguments in the Alt case. EPA's argument that the exemption applies only to land application areas is contrary to previous court rulings, he said. "The only requirement is that the exempt discharge must be agriculture related," Bailey wrote. "It is clear that the incidental manure and litter are related to the raising of the poultry and are therefore related to agriculture." Bailey further found that even though the manure and litter on the Alt farm originated from the CAFO production area, it cannot be regulated as a point source of pollution because the farmyard where it settled is not part of the livestock operation. The manure and litter would have remained in place if there had been no precipitation, Bailey said. "This court declares that the litter and manure which is washed from the Alt farmyard to navigable waters by a precipitation event is an agricultural stormwater discharge and therefore not a point source discharge," Bailey wrote, "thereby rendering it exempt."

The *American Farm Bureau Federation* applauded the court's decision. "We are pleased the court flatly rejected EPA's arguments and ruled in favor of Lois Alt," *Farm Bureau* President Bob Stallman said. "The outcome of this case will benefit thousands of livestock and poultry farmers who run their operations responsibly and who should not have to get a federal permit for ordinary rainwater from

their farmyards." The environmental groups said they would consider all of their legal options to respond to the decision. The groups are "deeply concerned that the ruling will make it more difficult to restore the health of waterways across the country, including the Chesapeake Bay. These waterways have been contaminated by livestock excrement and other pollution from factory farms," they said in a statement. "The court's decision, if it stands, could have devastating impacts on the health of our rivers, streams and lakes and our communities." In a statement, EPA said it and the Department of Justice "are reviewing the court's decision."

Source: Amanda Peterka, *Greenwire*, 10/24/13 BACK TO TOP

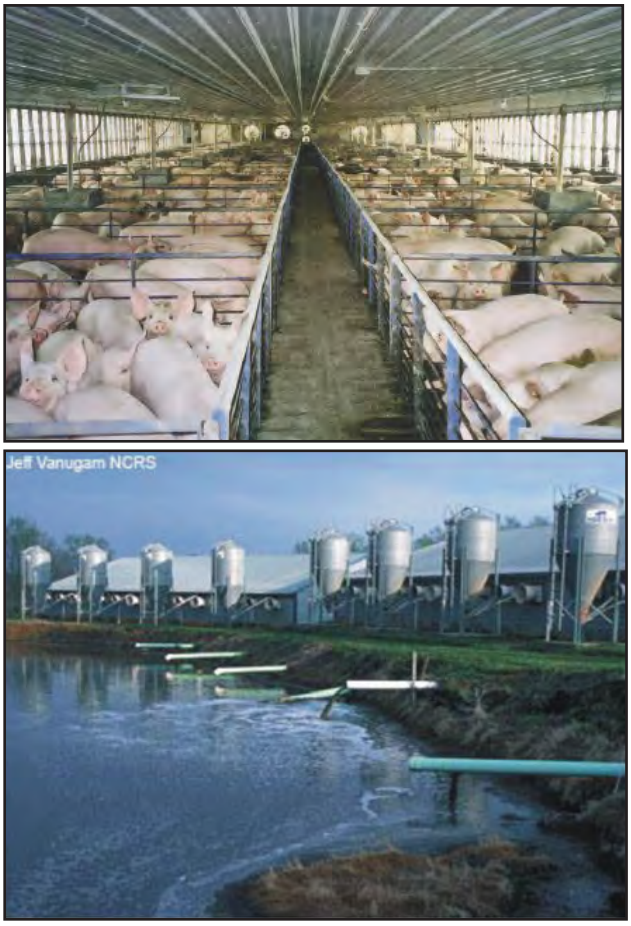
Oversight of Livestock Industry Lacking - Report

A research panel at *Johns Hopkins Center for a Livable Future* (JHCLF) has found that environmental regulation of industrial-scale livestock production has taken a step back over the last five years. In an update of an original report first prepared in 2008 the panel said U.S. EPA efforts have largely stalled while many states have enacted laws and regulations aimed at weakening oversight. Other areas highlighted by the 2008 report, including antibiotic use by livestock producers, have also received a failing grade over the last five years, the JHCLF report said. The 2008 report by the *Pew Commission on Industrial Farm Animal Production*, a group of 14 experts formed by the JHCLF on a grant from the *Pew Charitable Trusts*, found "significant influence" by the livestock industry "at every turn" in national food policy making. It concluded that the "present system of producing food animals in the United States is not sustainable and presents an unacceptable level of risk to public health and damage to the environment."

But the *Animal Agriculture Alliance* which advocates for livestock producers objected to the findings of the new report and released its own report touting improvement in all areas over the last five years, including in the sustainability of livestock operations. "Whether it's making sure that animals are getting the best care possible, using antibiotics judiciously or making major strides in food safety and sustainability," the alliance said, "the entire livestock and animal agriculture industry has improved to continuously meet consumer expectations over the past five years."

The *Pew Commission* made 24 recommendations on public health, the environment, animal welfare and rural communities. The report was hailed by public health, environmental and animal rights activists opposed to concentrated animal feeding operations, or CAFOs. "We see that not much has been done to implement the 24 recommendations or specifically the top five," said Bob Martin, a senior policy adviser who served as executive director of the *Pew Commission*. "Intensification has increased, more operations are coming online, permitting has been relaxed, EPA efforts to even do an inventory of where these operations are located have been stopped."

In the area of environmental regulation, the livestock industry remains "excused" from the type of scrutiny faced by other large industries, the JHCLF found. Over the last five years, EPA has focused more on trying to identify and locate hundreds of CAFOs rather than making progress on quantifying their pollution or enforcing laws to minimize discharges into air and water, the report said. Efforts to quantify operations have fallen off with the withdrawal last year of a rule requiring CAFOs to report information to the agency and the backlash this year over the agency's release of data to environmental groups.



CAFOs generate tremendous amounts of pollution.

States, meanwhile, have taken action to scale back CAFO regulation. Ohio and Oregon, for example, have shifted oversight of the industry from state environmental agencies to departments of agriculture, while Iowa has enacted laws scaling back the scope of oversight and limiting public notice requirements for CAFO water quality permits. Other states, though, have taken steps over the last five years toward "more meaningful regulation" of the industry, the report said. Washington state enacted a law that subjects dairy CAFOs to penalties for failing to comply with record-keeping requirements, while Illinois enacted a law requiring CAFOs to pay fees for Clean Water Act permits.

The livestock industry's political influence continues to define policy making in the food security and safety areas, the report found. "We had very high hopes that the Obama administration would be particularly receptive to the recommendations of the commission. We were encouraged by the appointment of some very fine people to lead EPA, [the Food and Drug Administration] and [the

Department of Agriculture]," said Robert Lawrence, director of the JHCLF, "and then we came up hard against the reality of the political power of industrial agriculture in the United States." At a *National Press Club* panel in Washington, D.C., former *Pew Commission* members also blamed the bad report card on an industrial culture that emphasizes efficiency and a generally dysfunctional government that has waylaid progress in most other areas as well.

"We're in an environment right now where it's anti-government, anti-regulation," said former Kansas Gov. John Carlin (D), the chairman of the *Pew Commission*, "and consequently, when you're talking about the need as we have done for the government to take steps, for the government to invest more in research, for the government to actually regulate for the best interest of the consumer for public health, the timing is not right." *Pew Commission* members, who are distributing their report to federal and state policymakers, acknowledged voluntary efforts among the industry, but said they've fallen short of the industrywide movement needed to meet their recommendations. "We're not saying everybody is behind the curve. There were people that we were working with eight years ago, seven years ago – we saw excellent examples of all the areas we covered in the report," Carlin said. "They were a small minority."

Source: Amanda Peterka, *Greenwire*, 10/22/13 BACK TO TOP

States Faced Growing Toxic Algae Problems in 2013

Twenty-one states issued health advisories and warnings this past summer over algal blooms in lakes, rivers and ponds, according to a report released in late September by the *National Wildlife Federation's* (NWF) *Great Lakes Regional Center and Resource Media*. The report entitled, "Toxic Algae: Coming Soon to a Lake Near You?", blames pollution from farm runoff and failing sewer systems as the primary catalyst for toxic algae growths. According to the report, New York led the nation with warnings on 50 lakes and ponds, while Kentucky found toxic algae for the first time at four lakes that attract more than 5 million visitors a year. The complete listing by state follows: NY - 50, KS - 18, WA - 12, IA - 10, OH - 10, OR - 9, CA - 6, KY - 4, NE - 4, WI - 4, IN - 3, MA - 3, MD - 3, FL - 2, NH - 2, RI - 2, ID - 1, MT - 1, OK - 1, and VT - 1.

Inside the harmful algae are cyanobacteria that pose a health risk to humans, pets, fish and wildlife. Cyanobacteria produce liver and nerve toxins that can cause asthma-like symptoms, severe vomiting and irritated skin or eyes. One of the toxins has been cited as possibly carcinogenic, according to the report. "It is the tip of the iceberg, and it's a national problem," said Andy Buchsbaum, executive director for the Great Lakes region of the NWF. Currently, no federal agency tracks lake closures or health warnings nationally. Buchsbaum expects more states to come forward soon with their own toxic algae warnings.

Also, according to a paper published in late October in the journal *Science*, climate change is driving a cycle that favors increasing toxic blooms. Timothy Otten, a public health microbiologist and postdoctoral researcher at Oregon State University and Hans Paerl, a professor of marine and environmental sciences at the University of North Carolina, Chapel Hill, *Institute of Marine Sciences* co-authored the report. The main health threat from cyanobacteria comes from ubiquitous microcystins, a class of toxic compounds that can severely damage the liver. The toxicity of the algae is a side effect of how they respond to a fluctuating habitat. "There's a metabolic cost, an energetic cost, to producing this compound," Otten said. "It's toxic, but we don't think it's really there to be a toxin."

2007 Toxic Algae Bloom - Little Rock Lake, MN - MN Pollution Control Agency Photo.

Instead, researchers found that microcystins help protect cyanobacteria. Under ultraviolet light from the sun, dissolved organic matter helps form reactive oxygen compounds, like hydrogen peroxide. These compounds can react with bacterial cells and break down their molecular hardware, but microcystins can slow the process. As a result, toxin-producing bacteria tend to outgrow their nontoxic brethren when exposed to reactive oxygen. This also creates a feedback cycle where algae produce oxygen via photosynthesis, which becomes reactive when catalyzed by ultraviolet light and organic carbon, which then kills off bacteria that don't produce microcystins and leaves harmful bacteria to fill the void. The dying bacteria add to the pool of dissolved organic carbon, speeding up the shift toward toxic microbes, which produce even more oxygen.

Climate change then steps on the gas pedal with changing rainfall and extreme weather boosting algal blooms alongside rising temperatures. "That kind of plays into the cyanobacteria playbook, as well," said Paerl. Heavier storms increase nutrient runoff into lakes and streams, while periods of drought prevent them from flushing out, leaving the water ripe for blooms. The most immediately effective strategy to deal with this threat, according to Paerl, is to control how much reactive nitrogen, phosphorus and organic carbon end up in bodies of water. "The nutrient knob, that's the one we control," he said. Cutting down runoff from farms, replanting trees,

remediating watersheds and thoroughly treating wastewater are some of the more effective ways of shrinking algal blooms. "These technologies are all in place; we just have to be more aggressive about using them," Paerl said.

The NWF report made the following five policy recommendations:

- Restore And Strengthen Clean Water And Watershed Restoration Funding
- Support Wetland And Stream Protection Programs
- Adopt Water Pollution Limits
- Pass a 5-year Farm Bill That Promotes Healthy Soils and Reduces Agricultural Runoff
- Reauthorize the Harmful Algal Bloom and Hypoxia Research and Control Act

NWF is looking for relief to the problem in the passage of a new farm bill and another measure by Sens. Bill Nelson (D/FL) and Rob Portman (R/OH) that aims to combat algal blooms. "The farm bill is critical," Buchsbaum said. "It's the law that restructures incentives for farmers, so it makes economic sense to put in place conservation measures to do what's necessary to reduce nutrients in runoff." The bill would tie subsidies for crop insurance to conservation practices.

Sources: *Toxic Algae: Coming Soon to a Lake Near You?*, 2013, *National Wildlife Federation*, Washington, D.C.; Laura Barron-Lopez, *E&E News PM*, 9/24/13; and Umair Irfan, *ClimateWire*, 10/25/13 BACK TO TOP

EPA Approves Controversial KY Regulatory Change for Selenium

U.S. EPA has decided to approve a plan by Kentucky regulators and lawmakers to change the way the state regulates the chemical element selenium in waterways. Selenium, which can be harmful to aquatic life, has been a point of contention in the debate over Appalachian mountaintop-removal coal mining operations. Essentially, the decision allows Kentucky to rely more on fish tissue samples rather than water sampling in ensuring compliance. EPA agreed with state regulators in saying the move conforms with new science. "After careful review, we are approving the fish tissue-based chronic warm water aquatic habitat criterion for selenium because we believe it is consistent with the latest scientific information regarding the toxicology of selenium and is protective of aquatic life," wrote Stanley Meiburg, EPA Region 4 acting administrator.

But environmental groups are accusing EPA of capitulating to Kentucky's demands. They see the new standards as an effort by the state to help companies avoid litigation. "We are deeply disappointed that the EPA approved Kentucky's request to weaken protections against water pollution from mountaintop-removal mines," said Bruce Nilles, *Sierra Club Beyond Coal* campaign senior director. "A straightforward approach has been replaced with a highly complicated system that will be hard to enforce and could allow mountaintop-removal companies to mine without accountability for the environmental destruction they force on the communities of Appalachia," he said. Environmental groups have said the new rules are essentially a death sentence to many fish. But EPA said it was convinced, at least in part, by Kentucky regulator assurances that polluters would be judged on certain water quality criteria if testers cannot obtain enough fish tissue. "Current findings show the primary mode of chronic toxicity effect on fishes is based on dietary uptake rather than aqueous concentration," EPA wrote in its decision document.

Appalachian Voices Photo

EPA did not approve Kentucky's changes to its selenium rules concerning short-term or acute habitat exposure, saying it made that decision "because we have determined that lethality is not the appropriate sole endpoint for assuring the protection of aquatic life due to an acute exposure regime." EPA said Kentucky's proposed "acute criterion" does not provide enough protection " because it is based on water-only exposure, with no associated dietary exposure."

Source: Manuel Quiñones, *E&E News PM*, 11/15/13 BACK TO TOP

New Study Puts Environmental Price Tag on Mountaintop Removal Mining

An area the size of Washington, D.C. – about 68 square miles – would have to be strip mined every 81 days to meet U.S. coal demand, says a new study on Appalachian mountaintop removal mining. The study, published in September in the journal *PLOS ONE*, further found that a one-year supply of coal would require strip mining roughly 301 square miles of Appalachian hills and mountains, pollute more than 2,000 stream kilometers and dramatically boost carbon pollution through the cutting of trees and grasses. Backed by the nonprofit *Public Library of Science*, *PLOS ONE* is an effort to make scientific research free and open through the Internet.

Mountaintop Removal Mining - Appalachian Voices Photo

Lead author Brian Lutz said the paper, which follows several studies on mountaintop-removal coal mining, is "the first to put an environmental price tag on mountaintop-removal coal." Lutz is an assistant professor of biogeochemistry at Kent State University and began the research as a postdoctoral researcher at Duke University's *Nicholas School of Environment*. Duke University biology department associate professor Emily Bernhardt and William Schlesinger, a researcher with the New York-based *Cary Institute of Ecosystem Studies*, are co-authors. The paper argues that "the extent of environmental impacts of these surface mining practices is staggering, particularly in terms of the amount of coal that is produced. Tremendous environmental capital is being spent to achieve what are only modest energy gains."

The new study, like others before it, is gaining traction among environmental advocates opposed to mountaintop-removal coal mining. "In light of the amassing academic research, especially research like Lutz's, which should speak to the pragmatic and business-minded as much as the environmentally conscious among us, we have to wonder what it will take for the most ardent supporters of mountaintop-removal to see reason," wrote *Appalachian Voices* staffer Brian Sewell in a blog post. "Even on those rare former surface mines where forest regrowth is achieved, it would still take about 2,150 years for the carbon sequestration deficit to be erased," said Lutz in a statement released by Duke.

A paper published earlier this year found that Appalachian mountaintop-removal coal mining is destroying the region's natural ability to absorb heat-trapping carbon dioxide emissions. Duke's *Nicholas School of the Environment* also published a mountaintop-removal mining-related study earlier this summer, with scholars arguing that they could trace the chemical signature of the pollution. The latest paper reported receiving no outside funding. But the Duke press release says the *Foundation for the Carolinas* is helping back an effort to further study the impacts of mountaintop-removal mining.

The mining industry, for its part, says many of the studies generally ignore the regulations for mining or reclaiming Appalachian strip mines or the many other causes of deforestation. Of course, not all coal mining in the United States is done through surface methods, and only a fraction of it is mined in the Appalachian region. Using satellite imagery and county-level coal production data from 1985 through 2005, the new study found that companies mined about 2,000 square kilometers to access 1.93 billion tons of coal – about two years' worth of current U.S. demand.

Source: Manuel Quiñones, *Greenwire*, 9/13/13 BACK TO TOP

Fracking Documented as Cause of 2007 KY Fish Kill

Wastewater from hydraulic fracturing caused a massive fish kill in Acorn Fork Creek Kentucky after a gas driller neglected to design its wells following best practices, according to a study conducted by the U.S. Geological Survey (USGS) and the U.S. Fish and Wildlife Service (USFWS). The study, published in the *Southeastern Naturalist*, is among the first to document the impact on wildlife from fracking wastewater spills. Such spills are commonplace and account for some of the 15.6 million gallons of oil, fracking fluid, wastewater and other liquids that spilled in 2012.

Acorn Fork Creek was home to the blackside dace, a threatened minnow species endemic to the Cumberland River Basin in Kentucky and Tennessee. Anthony Velasco (USFWS) saw a cloudy flocculent, or mass, of minerals when he arrived at the creek in June 2007. The water had turned red from iron oxides coating the bed, and the investigator found no living things in the creek. The pollution appeared to originate from four drilling pads owned by Kentucky-based *Nami Resources Co. LLC*. Two of the well pads had wastewater impoundments, including one with a torn liner. Two other well pads included just a ditch to store waste, allowing it to flow into a culvert and, from there, directly into Acorn Creek.

Velasco said the company had disposed of flowback water directly into the creek. The well pads were located less than 10 feet from the surface water. It's unclear how many gallons of wastewater spilled. In 2009, *Nami Resources* pleaded guilty to violating the Endangered Species Act and the Clean Water Act in a case brought by the Justice Department and paid a $50,000 fine to the U.S. government. Scientists found the creek had high acid levels, possibly because *Nami* had used hydrochloric acid during the process of hydraulic fracturing. The salt load in some places was more than 350 times the limit aquatic life can tolerate, said Diana Papoulias, a fisheries biologist with the USGS.

Whether the stream will recover its wildlife remains to be seen. Acorn Fork is a small Appalachian headwater stream with a large waterfall that prevents fish from migrating upstream. Scientists fear that could make it difficult for fish to repopulate the area. That could further threaten the blackside dace, which is on the decline in the Cumberland Basin. The pollution in the creek came to the attention of federal officials after people living in the area reported the fish kill, Velasco said. "It takes the people who are local to be observant and engaged in the environmental quality of their areas and to report these things to the agencies," he said. "The agencies don't have the funding to be able to put as many people out in the field as we used to have."

Meanwhile, in Pennsylvania the environmental group *Clean Water Action* (CWA) has filed a lawsuit against *Waste Treatment Corp* (WTC) alleging the commercial water treatment facility in Warren, PA is illegally discharging gas drilling wastewater containing high levels of salts, heavy metals and radioactive compounds into the Allegheny River. The suit was filed in the U.S. District Court for the Western District of Pennsylvania in Erie. CWA said the company has violated its discharge permit limits more than 400 times since 2010. Despite those violations, and the ongoing 200,000-gallon-a-day discharge of drilling wastewater containing 125,000 pounds of salt, the state Department of Environmental Protection (DEP) has not taken any effective action to stop the pollution, said Myron Arnowitt, CWA state director. "You hear all the time that gas drilling wastewater doesn't end up in our rivers anymore. However, this is one case in which it clearly is," Mr. Arnowitt said.

A 2012 DEP study, cited in the lawsuit filing, found levels of chloride, bromide, lithium, strontium, radium-226 and radium-228 downriver from the plant that were more than 100 times higher than those found upriver. The Allegheny River is the drinking water source for several public water suppliers, including the *Pittsburgh Water and Sewer Authority*, which has 400,000 customers. The WTC treatment plant was one of 16 water treatment plants that were asked by then DEP Secretary Michael Krancer and Gov. Tom Corbett in April 2011 to "voluntarily" stop disposing of drilling wastewater. The DEP had said that all complied, including the eight of those discharging upriver from Pittsburgh's drinking water intake pipe in Aspinwall.

"One of the reasons we decided to proceed with our suit is because DEP seems more concerned with negotiating a deal with the company than protecting the public," Steve Hvozdovich, CWA's *Marcellus Campaign* coordinator said. "It's important that WTC stop accepting natural gas drilling wastewater while the legal process unfolds and that any resolution to the situation ensures the protection of the Allegheny River." WTC is operating under a 2003 permit that did not authorize the discharge of oil and gas wastewater, although the company did inform the DEP it was doing so, including wastewater from Marcellus Shale gas drilling operations. That permit was administratively extended twice by the DEP, each for five years. The last extension is scheduled to expire this year.

Source: Don Hopey, *Pittsburgh Post-Gazette*, 10/28/13; Gayathri Vaidyanathan, *Greenwire*, 8/29/13; and *Greenwire*, 10/29/13

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Acid Rain is Driving an Alkalinity Jump in Eastern U.S. Rivers

The alkalinity of more than 60 rivers and streams across the eastern United States is on the rise, and acid rain is largely to blame, according to a University of Maryland study. The Potomac and Schuylkill rivers along with other major waterways have become more alkaline over the past 25 to 60 years due to a combination of acid rain, mining and harmful land-use practices, said the study's lead author, geologist Sujay Kaushal. "We weren't expecting it to be this widespread," Kaushal said. "These trends that we're seeing in the Schuylkill River and Potomac River, these trends are troubling." Acid rain has steadily declined since the 1970s, when the government strengthened regulations against motor vehicle exhaust and sulfur dioxide emissions from coal-fired power plants, but Kaushal said it hasn't gone away. Rain is still acidic enough to corrode rocks, sidewalks and other limestone-rich surfaces that release alkaline minerals into rivers and streams.

Kaushal said river alkalization – coupled with an overdose of other nutrients including nitrogen from mining and land use – produces ammonia, which can be fatal to fish. Many streams in the Chesapeake Bay region are suffering from an overdose of nutrients. Increasing alkalinity coupled with an abundance of nitrogen, one of those nutrients, can generate ammonia in the water, which can kill fish. The changes also may accelerate algae growth, already a problem in bay waters. With rising salinity in rivers and streams, calcium concentrations are also increasing, making the water "harder" for human usage, Kaushal said. That can complicate everything from showers to doing laundry, and can lead to "scaling" in water pipes, a buildup of calcium that constricts the flow. While the hardness is not a health threat, and can be treated to counter it, he said he still found it troubling.

William Stack, deputy program director of the *Center for Watershed Protection* and a former employee of the Baltimore Department of Public Works, agreed that the findings were troubling. "The broader concern is we're picking up a signature in the ambient concentration or quality of our waters," Stack said. "What else is going on that we're not picking up? And do we really fully know what the ramifications are?"

Sources: Timothy Wheeler, *Baltimore Sun*, 9/12/13; and *Greenwire*, 9/13/13

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New Technology Turns Water Pollution Into Fertilizer

Robert F. Kennedy Jr. and a representative of the *Chicago Metropolitan Water Reclamation District* announced in early October that a new technology planned for the Stickney (IL) Water Reclamation Plant will remove nutrient pollution from wastewater and convert it to pellets to be sold as fertilizer for crops and lawns. The technology developed by Canadian-based *Ostara Nutrient Recovery Technology, Inc.*, will be installed and operational in 2015 at an estimated cost of $30 million and a payback time of as little as three years. "Ostara's advanced nutrient recovery technology not only reduces nutrient load but helps protect precious area waterways that are part of the Mississippi River basin," said Kennedy, a member of *Ostara's* board of directors. The announcement was made at the *Water Environment Federation's* 86th Annual Technical Exhibition and Conference at Chicago's *McCormick Place*.

Ostara's technology works by crystallizing phosphorus and nitrogen found in wastewater, turning the nutrients into small pellets, which are recovered from the facility to be used as their fertilizer product. Wastewater, containing phosphorous and nitrogen in the form of ammonia, enters *Ostara's* reactor where it mixes with magnesium, driving the chemical reaction that crystallizes the nutrients, said Britton. Crystallization takes between five and ten days, and the process could remove up to 90 percent of the phosphorous and 40 percent of the ammonia. This technology should produce approximately 10,000-15,000 tons of fertilizer annually, according the *Metropolitan Water Reclamation District* officials. *Crystal Green*, *Ostara's* fertilizer company, will purchase the product at $400 per ton from the water reclamation district. This revenue should offset operation costs of the facility, said Ahren Britton, *Ostara's* chief technology officer and company co-founder. *Crystal Green* will bag the fertilizer and sell it to consumers ranging from farmers to gardeners to golf course managers.

Crystal Green Fertilzer - Ostara Photo

The *Metropolitan Water Reclamation District* is getting a head start treating the growing problem of nutrient pollution, said Anthony Boone, *Ostara's* vice president of marketing and communications. Nutrient pollution causes algae blooms in lakes and rivers, killing off fish and other aquatic wildlife, devastating the ecosystem. It is responsible for a dead zone larger than Connecticut in the Gulf of Mexico, where virtually nothing can live. Major sources of nutrient pollution include agriculture, wastewater, and stormwater, according to the USEPA. "Regulators are really looking at it more closely. Protection of waterways is a global issue," Boone said. *Ostara's* technology is a "tool in the arsenal" to address the problem. The crystal form of the *Crystal Green* fertilizer helps to combat nutrient pollution. Rather than quickly dissolving in water, it breaks down slowly in response to acids produced by the plant as it grows. This reduces leaching into groundwater and runoff of excess nutrients, and means fewer fertilizer applications are necessary.

Source: Elizabeth McCarthy , *Medill Reports – Chicago*, 10/9/13 BACK TO TOP

Runaway Population Growth Deepens Climate Fear Among Scientists

"Earth is reaching a tipping point," warned a consensus statement issued by Stanford University and signed by more than 1,000 scientists. In less than one generation, the global population has tripled to 7.1 billion and continues to climb by more than 1.5 million people each week, further adding to the effects of environmental stress. World population is projected to reach 9.6 billion by mid century, proving what scientists call the "Anthropocene," a new global epoch when man's impact on the Earth became evident.

The most glaring sign of the population explosion is climate change. Humans have transformed more than 40 percent of the Earth's land to cities and farms while roads and structures fragment much of the landscape. As a result, humans appropriate up to 40 percent of Earth's biomass each year and more than half of the world's fresh water. The most recent report of the UN *International Panel on Climate Change* (IPCC) found with near certainty that human activity is the cause of most of the temperature increases of recent decades and warns that sea levels could conceivably rise by more than 3 feet by the end of the century if greenhouse gas emissions continue at a runaway pace. The scientists largely dismiss a recent slowdown in the pace of warming, which is often cited by climate change doubters. The researchers say the slowdown is most likely due to short-term factors.

Each new IPCC report has found greater certainty that the planet is warming and greater likelihood that humans are the primary cause. The 2007 report found "unequivocal" evidence of warming but hedged a little on responsibility, saying the chances were at least 90 percent that human activities were the cause. The new draft says the odds are at least 95 percent that humans are the principal cause. The IPCC, created in 1988 by the UN, is composed of several hundred scientists from around the world. The group does no original research, but instead periodically assesses and summarizes the published scientific literature on climate change. Their recent report also found that carbon dioxide levels are up 41 percent since the Industrial Revolution, and if present trends continue, they could double in a matter of decades. Such an increase would lead to widespread melting of land ice, extreme heat waves, difficulty growing food and massive changes in plant and animal life, probably including a wave of extinctions.

Wildlife is thus at the forefront of the earth's tipping point. A quarter of known mammal species, 43 percent of amphibians, 14 percent of birds and 29 percent of reptiles are threatened, not to mention fish. But while, most conservationists agree that human activity is taking a serious toll on ecosystems around the world, they can't agree on how to respond to it. Last year a lightning rod paper came from the *Nature Conservancy's* (TNC) chief scientist, Peter Kareiva who argued that conservationists should more or less abandon attempts at preserving wildlife in pristine wilderness and instead integrate nature into human landscapes. Kareiva's paper created a rift in the field between those who agree with him and those who disagree. But Christoph Kueffer, co-author of a recent paper in the journal *Frontiers and Ecology and the Environment*, said it "doesn't have to be either-or." Kueffer, a researcher at the *Institute of Integrative Biology* in Zurich, Switzerland, proposes integrating four conservation strategies, "often considered incompatible," to preserve as many species as possible on a rapidly changing planet. Those strategies include:

- maintaining pristine ecosystems,
- creating novel ecosystems resilient to human-caused change,
- co-opting pre-existing novel ecosystems, and
- promoting biodiversity by adapting economic activities.

A pragmatic, open-minded approach to conservation will become more necessary as climate change and human expansion continue, Kueffer said. Kueffer has spent a large portion of his career studying conservation on islands. With the global human population expected to pass 10 billion by 2065, according to the U.N., and the effects of sea-level rise, extreme weather and climate change potentially getting worse, he said ecosystems around the world could soon start to resemble the precarious habitats he studies on islands. Islands are small environments where ecosystems face numerous threats, including invasive species, close proximity to human activity and creeping sea-level rise. As the human population swells and climate change disrupts more ecosystems in more ways, mainland habitats could start to look the same, he said.

Some already are, he added, in areas like Central Europe and the tropics. "In a small spatial scale, we have remnants of relatively undisturbed natural areas and different types of land use," he said. Donald Drake, a botany professor at the University of Hawaii, said countries, like Australia and New Zealand, are experimenting with creating their own mainland habitats that simulate predator-free island environments. "If you can do something and have it be successful on an island where the [conservation] situation is so dire, it may be worthwhile to apply the same technique to a continental situation where maybe things aren't quite so bad yet," he said.

But Daniel Simberloff, an ecologist at the University of Tennessee, Knoxville, said some of the paper's suggestions wouldn't be that easy to implement. For example, the paper's promotion of moving endangered species to new habitats could easily backfire, he said. "They mentioned but minimized the possibility of problems," he said. "The species are introduced wherever they're putting them, and they could affect native species." "It (the paper) doesn't really prioritize [strategies], which is where the controversies arise," Simberloff said. "They just say, 'We have these four things and we have to ramp them all up somewhat,' and I can't think who would say anything else."

Although debate over conservation strategies still rage, it appears researchers are starting to move beyond the debate triggered by the initial Kareiva article for TNC . Tim Caro, a conservation biologist at the University of California, Davis, said the paper was important in trying to bring conservationists together and "think clearly." "They're trying to pour water on this kind of incendiary debate about the Anthropocene," he said. In a field that has been occasionally criticized and always defined by its priorities, the rising wave of human and climate pressures will make integrative conservation more important than ever, Kueffer said. "It's important to think about our priorities for conservation," he said, "but we have to discuss what more is needed beyond just formal protection."

Sources: Carolyn Lochhead, *San Francisco Chronicle*, 9/3/13; Justin Gillis, *New York Times*, 8/19/13; Henry Gass, *ClimateWire*, 1010/13; and *ClimateWire*, 8/21 and 9/6/13 BACK TO TOP

Freshwater Fish Screening Toolkit Available

A new decision support tool for screening non-native freshwater fishes is now available on the *Centre for Environment, Fisheries & Aquaculture* (CEFAS) website. The *Fish Invasiveness Screening Kit* (FISK) v2.03 was developed in collaboration between University of Florida Fisheries and Aquatic Sciences (Jeffery Hill and Larry Lawson), CEFAS (Gordon Copp), and the Florida Fish and Wildlife Conservation Commission (Scott Hardin) with assistance of Lorenzo Vilizzi (La Trobe University/*Murray-Darling Freshwater Research Center*).

This risk screening tool has been used in several international projects and published journal articles and is now freely available online (Excel spreadsheet tool and user guide pdf). The revisions resulting in FISK v2.03 and an application of the method to non-native freshwater fishes in Florida are parts of Larry Lawson's MS thesis (University of Florida Fisheries and Aquatic Sciences grad student and *Tropical Aquaculture Laboratory Farm* Manager/Biologist). Contact Jeffrey Hill (jeffhill@ufl.edu) if you would like additional information on FISK, the development of FISK v2.03, or its applications. BACK TO TOP

Meetings of Interest

Jan. 26-29: 74th Midwest Fish and Wildlife Conference. Sheraton Kansas City, Kansas City, MO. See: http://www.midwestfw.org/html/call.shtml

Feb. 23-26: 5th Annual Upper Midwest Stream Restoration Symposium (UMSRS), Radisson Inn, La Crosse, WI. Hosted by the Partnership for River Restoration and Science in the Upper Midwest. See: www.prrsum.org

Mar. 10-13: Analyzing Risk: Principles, Concepts, and Applications. Boston, MA. See: https://ecpe.sph.harvard.edu/programs.cfm?CSID=RISK0000&pg=cluster&CLID=1

May 18-23: First Joint Aquatic Sciences Meeting, Oregon Convention Center, Portland, OR. Meeting will bring together the Society for Freshwater Science, (formerly NABS), the Association for the Sciences of Limnology and Oceanography, the Society of Wetland Scientists, and the Phycological Society of America. See: http://aslo.org/meetings/portland2014/sessions/index.php

Jul. 28-Aug.1: Conference on Ecological and Ecosystem Restoration, Hilton Riverside, New Orleans, LA. See: http://www.conference.ifas.ufl.edu/CEER2014/?utm_source=2014+CEER+call+for+session+proposals&utm_campaign=CEER&utm_medium=email

Sep. 30 - Oct. 2: America's Watershed Initiative, Louisville, KY. See: www.conference.ifas.ufl.edu/awi

Oct. 26-30: Aquatic Resources Education Association, Traverse City, MI, Park Place Hotel. See: http://www.areanet.org/

Dec. 8-11: A Community on Ecosystem Services (ACES), Crystal Gateway Marriot, Arlington, VA. See: http://conference.ifas.ufl.edu/aces/

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Congressional Action Pertinent to the Mississippi River Basin

Climate Change

S. 7. Reid (D/NV) and 21 Co-sponsors. Promotes investment to ensure resilience to extreme weather and disasters and ensures that the federal government is a leader in reducing pollution, promoting the use of clean energy sources, and improving energy efficiency.

S. 163. Vitter (R/LA) and Inhofe (R/OK). Prohibits any regulation regarding CO_2 or other GHG emissions reduction in the U.S. until China, India, and Russia implement similar reductions.

S. 332. Sanders (I/VT) and Boxer (D/CA). Addresses climate disruptions, reduces carbon pollution, enhances the use of clean energy, and promotes resilience in the infrastructure of the U.S., and for other purposes.

S. 376. Pryor (D/AR) and 4 Co-sponsors and **H.R. 2431**, Hall (R/TX) and 2 Co-sponsors. Reauthorizes the National Integrated Drought Information System to better inform and provide for more timely decision making to reduce drought related impacts and costs.

S. 1202. Whitehouse (D/RI) and Baucus (D/MT). Requires the President to establish an interagency Natural Resources Climate Change Adaptation Panel to: (1) adopt the National Fish, Wildlife, and Plants Climate Adaptation Strategy and review and revise such strategy every four years.

H.R. 518. Markey (D/MA) and 14 Co-sponsors. Amends the Reclamation States Emergency Drought Relief Act of 1991 to extend authority and appropriations through FY 2018, and requires cooperative drought contingency plans to address projected long-term climate variability and change.

H.R. 662. Luetkemeyer (R/MO) and 26 Co-sponsors. Prohibits U.S. contributions to the IPCC and the *U.N. Framework Convention on Climate Change*.

Conservation

S. 51. Boxer (D/CA) and 11 Co-sponsors and **H.R. 263**, Grimm (R/NY) and Dingell (D/MI). Reauthorizes the *National Fish and Wildlife Foundation*.

S. 327. Barrasso (R/WY) and 10 Co-sponsors. Authorizes the Secs. of Agriculture and Interior to enter into cooperative agreements with States authorizing State foresters to provide certain forest, rangeland, and watershed restoration and protection services.

S. 338. Baucus (D/MT) and 37 Co-sponsors and **H.R. 2727**, McKinley (R/WV) and 7 Co-sponsors. Amends the Land and Water Conservation Fund Act of 1965 to provide consistent and reliable authority and funding for it, and for other purposes.

S. 526. Baucus (D/MT) and 14 Co-sponsors and **H.R. 2807**, Gerlach (R/PA) and 150 Co-sponsors. Amends the IRS Code to make permanent the tax deduction for charitable contributions by individuals and corporations of real property interests for conservation purposes, and for other purposes.

S. 632. McCain (R/AZ) and 12 Co-sponsors and **H.R. 1313**, Hartzler (R/MO) and 49 Co-sponsors. Amends the Food, Conservation, and Energy Act to repeal a duplicative program relating to inspection and grading of catfish and other species of farm-raised fish or shellfish.

S. 741. Vitter (R/LA) and 14 Co-sponsors. North American Wetlands Conservation Extension Act of 2013.

S. 801. Thune (R/SD) and 6 Co-sponsors and **H.R. 686**, Noem (R/SD) and 20 Co-sponsors. Amends the Federal Crop Insurance Act to reduce crop insurance assistance and non insured crop disaster assistance for crops grown on native sod acreage converted to cropland for the first four years.

S. 923. Udall (D/NM) and **H.R. 1890**, Blumenauer (D/OR) and 25 Co-sponsors. Amends the Food Security Act of 1985 to make a producer violating certain conservation requirements under the highly erod-

ible land or wetland programs ineligible for federal crop insurance premiums.

S. 1441. Bennet (D/CO) and 3 Co-sponsors and **H.R. 3023**, Gardner (R/CO) and 5 Co-sponsors. Amends the IRS Code to facilitate water leasing and water transfers to promote conservation and efficiency.

H.R. 48. Bishop (D/NY) and Hanna (R/NY). Amends the IRS Code to allow installment sales treatment for land sold to a governmental unit or tax-exempt charitable organization for conservation purposes even though the purchase funds for such sale are held in a sinking or similar fund, as required by state law.

H.R. 349. Roby (R/AL) and 3 Co-sponsors. Prevents enrollment of land in the conservation reserve that is classified as class I or class II land under the NRCS land capability classification system, unless such land is enrolled as a buffer, filterstrip, or strip adjacent to a riparian area.

H.R. 638. Fleming (R/LA) and 13 Co-sponsors. Amends the National Wildlife Refuge System Administration Act of 1966 to require that any new national wildlife refuge may not be established except as expressly authorized by statute.

H.R. 910. Fleming (R/LA). Sikes Act Reauthorization Act of 2013.

H.R. 1080. Bordallo (D/GU). Amends the Sikes Act to promote the use of cooperative agreements under such Act for land management related to the Department of Defense on military readiness activities.

H.R. 1611. Ribble (R/WI). Authorizes the Forest Service, to use funds derived from conservation-related programs executed on National Forest System lands to utilize the Agriculture Conservation Experienced Services Program to provide technical services for conservation-related programs and authorities carried out on such lands.

H.R. 1788. Bachmann (R/MN) and 9 Co-sponsors. Amends the Migratory Bird Treaty Act to delegate double-crested cormorant management authority to a state on the date the Interior Secretary approves a cormorant management plan submitted by such state, and for other purposes.

H.R. 1834. Grijalva (D/AZ). Establishes the 21st Century Great Outdoors Commission to assess the use, value, job creation, and economic opportunities associated with the outdoor resources of public lands and other U.S. lands and water areas.

H.R. 2208. Wittman (R/VA) and 9 Co-sponsors. Amends the North American Wetlands Conservation Act to extend it through FY 2017.

H.R. 2261. Crawford (R/AR) and 4 Co-sponsors. Ensures the continuation of successful fisheries mitigation programs by imposing charges for such mitigation on the federal agency developing an impacting project, and for other purposes.

H.R. 2714. Meadows (R/NC). Amends the IRS Code to allow taxpayers to assign to another taxpayer the amount of the unused charitable deduction for qualified conservation contributions.

Endangered Species

S. 19. Cornyn (R/TX) and 17 Co-sponsors and **H.R. 1314**, Flores (R/TX) and 5 Co-sponsors. Amends the ESA to establish a procedure for approval of certain settlements.

S. 1175. Feinstein (D/CA) and **H.R. 2280**, Calvert (R/CA). Requires that the Treasury Secretary establish a program to provide loans and loan guarantees to enable state political subdivisions to acquire interests in real property pursuant to habitat conservation plans approved by the Interior Secretary under the ESA, and for other purposes.

S. 1233. Inhofe (R/OK) and 13 Co-sponsors and **H.R. 2511** Black, (R/TN) and 36 Co-sponsors. Authorizes states to regulate leasing, permitting and regulating development of all forms of energy resources on available federal land in the state including meeting the requirements of the ESA and NEPA.

S. 1731. Paul (R/KY) and 2 Co-sponsors and **H.R. 3533**, Amodei (R/NV). Amends the ESA to permit Governors of States to regulate intrastate endangered and threatened species, strips the protection from many currently listed species and their habitats, and for other purposes.

H.R. 576. Stockman (R/TX) and 2 Co-sponsors Amends the ESA to provide for captive breeding and for other purposes.

H.R. 1866. Young (R/AK). Amends the ESA to promote sustainable-use conservation, to harmonize it with the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES), and for other purposes

Energy

S. 279. Tester (D/MT) and 7 Co-sponsors and **H.R. 596**, Gosar (R/AZ) and 48 Co-sponsors. Promotes development of renewable energy on public lands, and for other purposes.

S. 545. Murkowski (R/AK) and 12 Co-sponsors. Improves hydropower, and for other purposes.

S. 582. Hoeven (R/ND) and 26 Co-sponsors. Approves the Keystone XL Pipeline.

S. 1234. Inhofe (R/OK) and 18 Co-sponsors and **H.R. 2513**, Gohmert (R/TX) and 11 Co-sponsors. Gives a State sole authority to regulate hydraulic fracturing on Federal land within the boundaries of the State.

S. 1482. Hoeven, (R/ND) and 4 Co-sponsors. Prohibits the Secretary of the Interior from issuing or promulgating any guideline or regulation relating to oil or gas exploration or production on federal land in a state if the state has otherwise met the requirements under applicable federal law, and for other purposes.

H.R. 334. Poe (R/TX) and 42 Co-sponsors. Approves a specified permit regarding certain energy-related facilities and land transportation crossings on the international boundaries of the U.S. for the Keystone XL pipeline project.

H.R. 1235. Hartzler (R/MO) and 5 Co-sponsors. Amends the Federal Power Act to permit States to exempt projects from certain FERC considerations in issuing licenses for such projects.

H.R. 1963. Daines (R/MT) and 4 Co-sponsors. Amends the Water Conservation and Utilization Act to authorize development of non-Federal hydropower and issuance of leases of power privileges at

projects.

FWPCA and Water Quality

S. 496. Pryor (D/AR) and 11 Co-sponsors and **H.R. 311**, Crawford (R/AR) and 72 Co-sponsors. Directs the USEPA to change the Spill Prevention, Control, and Countermeasure rule with respect to certain farms.

S. 802. Hagan (D/NC) and 13 Co-sponsors and **H.R. 935,** Gibbs (R/OH) and 57 Co-sponsors. Clarifies Congressional intent regarding regulation of the use of pesticides in or near navigable waters, and for other purposes.

S. 830. Manchin (D/WV) and 6 Co-sponsors. Amends the FWPCA to clarify and confirm USEPA authority to deny or restrict use of defined areas as disposal sites for discharge of dredged or fill material.

S. 861. McConnell (R/KY) and Paul (R/KY). Amends the FWPCA to provide guidance and clarification regarding issuance of new and renewal permits, and for other purposes.

S. 890. Paul (R/KY) and 6 Co-sponsors and H.R. 3377, Thornberry (R/TX) and 2 Co-sponsors. Prohibits FWPCA activities carried out by the USEPA or the Army Corps of Engineers from impinging upon states' power over land and water use, clarifies the definition of navigable waters, and for other purposes.

S. 1006. Barrasso (R/WY) and 27 Co-sponsors. Preserves existing rights and responsibilities with respect to waters of the U.S.

S. 1254. Nelson (D/FL) and 17 Co-sponsors. Amends the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 to revise the membership requirements for the Inter-Agency Task Force on Harmful Algal Blooms and Hypoxia, and for other purposes.

S. 1470. Kaine (D/VA) and Warner (D/VA) and **H.R. 2937**, Hurt (R/VA) and 6 Co-sponsors. Amends the FWPCA with respect to the guidelines for specification of certain disposal sites for dredged or fill material.

H.R. 524. McKinley (R/WV) and 11 Co-sponsors. Amends the FWPCA to eliminate USEPA authority to disapprove permits after they have been issued by the Army Corps of Engineers under section 404 of such Act.

H.R. 1175. Cartwright (D/PA) and 61 Co-sponsors. Amends the FWPCA to direct the Interior Secretary to conduct a study with respect to stormwater runoff from oil and gas operations, and for other purposes.

H.R. 1296. Miller (R/CA) and 4 Co-sponsors. Amends the FWPCA to clarify a maintenance exemption regarding the removal of sediment, debris, and vegetation from certain structures.

H.R. 1304. Walberg (R/MI) and 18 Co-sponsors. Permits the chief executive of a State to create an exemption from certain requirements of Federal environmental laws for producers of agricultural commodities, and for other purposes.

H.R. 1829. Capito (R/WV) and 20 Co-sponsors. Requires the USEPA Administrator to analyze the impact of Clean Water Act implementation actions on employment levels or economic activity, and for other purposes.

H.R. 1837. Pallone (D/NJ) and 79 Co-sponsors. Amends the FWPCA to clarify that fill material cannot be comprised of waste.

H.R. 1877. Bishop (D/NY) and 34 Co-sponsors. Amends the FWPCA to authorize appropriations for State water pollution control revolving funds, and for other purposes.

H.R. 1948. Mica (R/FL) and 2 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.

H.R. 2581. Hurt (R/VA) and 9 Co-sponsors. Replaces the need for an FWPCA permit for the discharge of dredged or fill material into navigable waters for projects which bring waters into a uses for which they were not previously subject and where the flow or circulation of such waters may be impaired or the reach of such waters may be reduced with a requirement that a permit be obtained for any such discharge that is not currently exempted from permit requirements.

H.R. 2948. Matheson (D/UT) and Harper (R/MS). Requires analyses of the cumulative and incremental impacts of certain rules and actions of the USEPA, and for other purposes.

Grazing

S. 258. Barrasso (R/WY) and 8 Co-sponsors and **H.R. 657**, Labrador (R/ID) and 15 Co-sponsors. Amends the Federal Land Policy and Management Act of 1976 to improve management of grazing leases and permits, and for other purposes.

Invasive Species

S. 125. Brown (D/OH) and 5 Co-sponsors and **H.R. 358**, McCollum (D/MN) and 26 Co-sponsors. Requires the USFWS, in coordination with the Army Corps of Engineers, the NPS, and the USGS, to lead a multi agency effort to slow the spread of Asian Carp in the Upper Mississippi and Ohio River basins and tributaries by providing high-level technical assistance, coordination, best practices, and support to state and local government strategies, to slow, and eventually eliminate, the threat posed by such carp.

S. 365. Klobuchar (D/MN) and Franken (D/MN) and **H.R. 709**, Ellison (D/MN) and 3 Co-sponsors. Authorizes the Army Corps of Engineers to take actions to manage the threat of Asian carp traveling up the Mississippi River in the State of Minnesota, and for other purposes.

S. 1153. Gillibrand (D/NY) and 2 Co-sponsors and **H.R. 996**, Slaughter (D/NY) and 31 Co-sponsors. Establishes an improved regulatory process for injurious

wildlife to prevent the introduction and establishment in the U.S. of nonnative wildlife and wild animal pathogens and parasites.

S. 1463. Boxer (D/CA) and 2 Co-sponsors. Amends the Lacey Act Amendments of 1981 to prohibit importation, exportation, transportation, sale, receipt, acquisition, and purchase in interstate or foreign commerce of any live animal of any prohibited wildlife species.

H.R. 584. Young (R/AK) and 23 Co-sponsors. Amends the Federal Food, Drug, and Cosmetic Act to require labeling of genetically engineered fish.

H.R. 985. Rogers (R/MI) and 12 Co-sponsors. Directs the Army Corps of Engineers to prevent the spread of Asian carp in the Great Lakes and the tributaries of the Great Lakes, and for other purposes.

H.R. 1823. Heck (R/NV) and 22 Co-sponsors. Amends the Lacey Act to prohibit the importation and exportation of quagga mussels.

H.R. 3324. Harris (R/MD) and Fleming (R/LA). Lacey Act Paperwork Reduction Act.

Mining

S. 222. Udall (D/NM) and 3 Co-sponsors and **H.R. 488.**, Pearce (R/NM) and Lujan (D/NM). Amends the Surface Mining Control and Reclamation Act of 1977 to clarify that uncertified States and Indian tribes have the authority to use certain payments for certain non coal reclamation projects and acid mine remediation programs.

S. 1443. Udall (D/CO) and Bennet (D/CO) and **H.R. 2970**, Tipton (R/CO). Facilitates the remediation of abandoned hardrock mines, and for other purposes.

H.R. 526. Yarmuth (D/KY) and 44 Co-sponsors. Places a moratorium on permitting for mountaintop removal coal mining until health studies are conducted by the Department of Health and Human Services, and for other purposes.

H.R. 2467. Markey (D/MA) and 2 Co-sponsors. Permits a state or local government or Indian tribe to petition the Interior Secretary for withdrawal of specific federal land from mining in order to protect specific values and instructs the Secretary to ensure that mineral activities on federal land are carefully controlled to prevent undue degradation of public lands and resources.

H.R. 2824. Johnson (R/OH) and 5 Co-sponsors. Amends the Surface Mining Control and Reclamation Act of 1977 to implement the final rule on excess spoil, mining waste, and buffers for perennial and intermittent streams, and for other purposes.

Public Lands

S. 368. Heinrich (D/NM) and 8 Co-sponsors. Federal Land Transaction Facilitation Act, and for other purposes.

S. 400. Boozman (R/AR) and Merkley (D/OR). Amends the Federal Lands Recreation Enhancement Act to include the Army Corps of Engineers as a Federal land management agency, and for other purposes.

S. 1262. Nelson (D/FL) and 2 Co-sponsors and **H.R. 3451** Garcia (D/FL). Establishes a veterans Conservation Corps to work on public lands.

H.R. 916. Kind (D/WI) and 13 Co-sponsors. Directs the Interior Secretary to develop a multipurpose cadastre of federal real property to assist with federal land management activities, including, but not limited to, resource development and conservation, travel management, agricultural use, active forest management, environmental protection, and use of real property.

H.R. 1017. Poe (R/TX) and Jones (R/NC). Directs the sale of certain BLM and Forest Service lands to reduce the Federal budget deficit, and for other purposes.

H.R. 1021. Stivers (R/OH). Directs that there shall be no net increase in the acres of BLM, NPS, USFWS or FS lands unless the Federal budget is balanced for the year in which the land would be purchased.

H.R. 1633. Amodei (R/NV) and 2 Co-sponsors. Provides for the conveyance of small parcels of federal lands up to 160 acres in size to adjacent landowners, and for other purposes.

Public Works

S. 360. Udall (D/NM) and 9 Co-sponsors and **H.R. 1351**, Grijalva (D/AZ) and 39 Co-sponsors. Promotes a new generation of young men and women with the desire to seek careers in resource stewardship and public service by working directly with professionals.

H.R. 188. Kaptur (D/OH) Authorizes re-establishment of the Civilian Conservation Corps to provide gainful employment to unemployed and underemployed citizens of the U.S. through the performance of public work, and for other purposes.

Recreation

S. 170. Murkowski (R/AK) and 12 Co-sponsors. Recognizes the heritage of recreational fishing, hunting, and recreational shooting on Federal public land and ensures continued opportunities for those activities.

S. 311. Landrieu (D/LA). Directs the Interior Secretary to study the suitability and feasibility of designating sites in the Lower Mississippi River Area in the State of Louisiana as a unit of the National Park System, and for other purposes.

S. 421. Alexander (R/TN) and 3 Co-sponsors and **H.R. 826**, Whitfield (R/KY) and 6 Co-sponsors. Prohibits the Army Corps of Engineers from taking any action to establish a restricted area prohibiting public access to waters downstream of a Corps dam, and for other purposes.

S. 982. Alexander (R/TN) and 3 Co-sponsors. Eliminates any restricted fishing areas below Army Corps of Engineers dams in the Cumberland River, and for other purposes.

S. 1505. Thune (R/SD) and 5 Co-sponsors and **H.R. 322**, Miller, J. (R/FL) and 94 Co-sponsors. Amends the Toxic Substances Control Act (TSCA) to exclude from the definition of "chemical substance" any component (lead) of any hunting or fishing gear the sale of which is subject to federal excise tax.

S. 1554. Heinrich (D/NM). Requires publication of information on federal web sites of public lands available to public access for hunting, fishing and other recre-

ational purposes.

H.R. 1825. Benishek (R/MI) and 108 Co-sponsors. Directs Federal public land management officials to facilitate use of and access to Federal public lands for fishing, sport hunting, and recreational shooting, and for other purposes.

H.R. 2799. Latta (R/OH) and 7 Co-sponsors. Amends the Fish and Wildlife Coordination Act to establish the Wildlife and Hunting Heritage Conservation Council Advisory Committee to advise the Secretaries of the Interior and Agriculture (USDA) on wildlife and habitat conservation, hunting, and recreational shooting.

H.R. 3492. Lummis (R/WY) and Bishop (R/UT). River Paddling Protection Act

Water Resources

S. 4. Reid (D/NV) and 14 Co-sponsors. Updates and enhances dams, ports, water infrastructure, and flood protection infrastructure, and for other purposes.

S. 66. Vitter (R/LA) and 2 Co-sponsors. Directs the Army Corps of Engineers to establish a pilot program to evaluate the cost-effectiveness and project delivery efficiency of non-federal sponsors as the lead project delivery team for authorized Corps civil works flood control and navigation construction projects.

S. 407. Casey (D/PA) and 6 Co-sponsors and **H.R. 1149**, Whitfield (R/KY) and 28 Co-sponsors. Provides funding for construction and major rehabilitation for projects located on inland and intracoastal waterways of the U.S., and for other purposes.

S. 565. Durbin (D/IL) and 2 Co-sponsors and **H.R. 1152**, Enyart (D/IL) and 3 Co-sponsors. Provides for the safe and reliable navigation of the Mississippi River, and for other purposes.

S. 566. Durbin (D/IL) and Kirk (R/IL) and **H.R. 1153**, Bustos (D/IL) and 7 Co-sponsors. Establishes a pilot program to evaluate the cost-effectiveness of allowing non-Federal interests to carry out certain water infrastructure projects, and for other purposes.

S. 574. Landrieu (D/LA) and **H.R. 1161**, Richmond (D/LA). Modifies the 50-foot Mississippi River Ship Channel, Gulf of Mexico to Baton Rouge for navigation, and for other purposes.

S. 601. Boxer (D/CA) and Vitter (R/LA) and **H.R. 3080**, Shuster, Bill (R/PA) and 47 Co-sponsors. Water Resources Development Act of 2013.

S. 732. Paul (R/KY). Modifies the criteria used by the Army Corps of Engineers to dredge small ports.

S. 970. Cardin (D/MD) and Boozman (R/AR). Amends the Water Resources Research Act of 1984 to require research into new ideas that expand the understanding of water resources and for other purposes.

S. 996. Landrieu (D/LA) and 2 Co-sponsors and **H.R. 1035**, Moore (D/WI) and 2 Co-sponsors. Improves the National Flood Insurance Program, and for other purposes.

S. 1630. Barrasso (R/WY) and 7 Co-sponsors and H.R. 3189, Tipton (R/CO) and 14 Co-sponsors. Prohibits the Interior and Army Secretaries from conditioning the issuance, renewal, amendment, or extension of any permit or similar action on the relinquishment of any water right directly to the U.S., and for other purposes.

H.R. 123. Holt (D/NJ) and Miller (D/CA). Establishes a *WaterSense* program to identify and promote water efficient products, buildings and landscapes, and services to reduce water use, conserve energy, and preserve water resources.

H.R. 136. Matsui (D/CA) and Bera (D/CA). Authorizes the Army Corps of Engineers to implement any flood risk management project for which the Defense Secretary has transmitted to Congress, before the date of enactment of this Act, a letter that is technically sound, environmentally acceptable, and economically justified; and consistent with the President's policy and programs.

H.R. 399. Matsui (D/CA) and 27 Co-sponsors. Directs the Army Corps of Engineers to undertake a comprehensive review of the policy guidelines on vegetation management for levees in order to determine whether current federal policy is appropriate for all regions of the U.S.

H.R. 1268. Palazzo (/MS). Amends the IRS Code to allow qualified taxpayers a tax credit, up to $5,000 in a taxable year, for flood mitigation expenses and other purposes.

H.R. 1460. Graves (R/MO) and 5 Co-sponsors. Directs the Army Corps of Engineers to revise certain authorized purposes described in the Missouri River Mainstem Reservoir System Master Water Control Manual.

H.R. 1489 Maloney (D/NY) and 2 Co-sponsors. Amends the National Dam Safety Program Act to identify and ensure the safety of dams in need of repair and rehabilitation, and for other purposes.

H.R. 1662. Richmond (D/LA) and Boustany (R/LA). Provides for liability for the Army Corps of Engineers in cases of damage caused by the gross negligence of an officer or employee of the Corps.

H.R. 1769. Richmond (D/LA). Provides for a study to evaluate the National benefits of flood protection.

H.R. 2741. Noem (R/SD). Declares that states have authority to manage the waters of rivers located within their boundaries; and that states in which Missouri River mainstem reservoirs occur have the authority to allocate the quantity of water in the reservoir attributable to the natural flows of the Missouri River within its boundaries.

H.R. 2813. Cotton (R/AR). Amends the Water Supply Act of 1958 to permit an interested state or local interest to submit to the Secretary of the Army by January 1, 2016, a plan for the utilization of future use water storage under such Act.

Source: http://beta.congress.gov/

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