

ILLINOIS CHAPTER AMERICAN FISHERIES SOCIETY

2019 ENVIRONMENTAL CONCERNS REPORT



Respectfully submitted

February 27, 2019

at the 57th Annual IL AFS Business Meeting

by Committee Chairpersons

Karen Rivera

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Hilton Garden Inn

Champaign, IL

Good News:

- **Mussel Propagation:** DuPage Co. Forest Preserve Dist. has received a \$100,000 from Nicor Gas as part of an intergovernmental agreement with the Forest Preserve District of Kane County for mussel propagation, monitoring, training and research collaboration. The grant will be used to increase mussel populations in Kane and DuPage Counties. The agreement will allow Nicor to replace 8 miles of natural gas pipeline.
- **Wetland Creation:** A hydrologist with the Peoria Disposal Company, Charles Hostetler, has worked on a design that will transform Vicary Bottoms Dog Park into a large string of wetlands with a hiking trail along Kickapoo Creek in Peoria. The project is planned to earn wetland mitigation bank credits to allow PDC to develop its landfill No. 3 site that covers an ephemeral wetland. The Kickapoo Creek project will begin late this year and is projected to cost \$1,150,000. Completion is expected by autumn 2019.
- **Dam Removal:** Demolition crews continue to chip away at the low-head dam on the Vermilion River in downtown Danville.

Asian Carp:

- **Illinois to partner with Michigan:** Gov. Bruce Rauner announced the state will partner with the U.S. Army Corps of Engineers to combat the spread of the invasive species. Rauner also invited all seven governors from the Great Lakes states to work with Illinois and the Army Corps of Engineers as the details of the plan are finalized. The State of Illinois is the lead agency with jurisdiction, supervision and regulatory permitting authority over Illinois public waters which specifically includes the project. To satisfy the operation and maintenance costs of this non-federal sponsorship, the State of Michigan has committed a down-payment of up to \$8 million of state funds in fiscal year 2019. But the U.S. Army Corps of Engineers recently said the project would cost \$778 million — three times more than previously thought. Rauner spokeswoman Elizabeth Tomev says 'Illinois looks forward to a fair share discussion with all the stakeholders' once the project's 'true costs' are known.
- **SIU Researches Black Carp:** Southern Illinois University Carbondale researchers this weekend received what is believed to be the largest specimen of the invasive fish species black carp ever brought in for scientific analysis. The fish, a 115-pound female caught Thursday by commercial fishers on the Mississippi River near Cape Girardeau, Mo., could help unlock important secrets about its range, health and reproductive potential in that river and its larger tributaries. Apparently black carp are increasing in numbers and are becoming more common.

State Concerns:

- **Big Muddy River Contamination:** Environmentalists and neighbors are concerned about a proposed project that would dump waste water from Pond Creek Coal Mine into the Big Muddy River. The water flow would have a daily rate of 2.7 to 3.5 million gallons daily, and have chloride and sulfate that typically exceed allowed standards. It's not just the contamination but the amount of water being discharged that remains troublesome to concerned citizens. The amount of water to be discharged would be equal to about 10 percent of the Big Muddy's flow during the dry summer months. The permit was before the IDNR. Not sure status.
- **Trump Hotel Polluter:** Trump International Hotel & Tower is endangering fish and other aquatic life in the Chicago River, Illinois Attorney General Lisa Madigan alleges in a new lawsuit targeting the president's skyscraper for multiple violations of clean water laws. TRUMP tower is one of the largest users of river water for its cooling systems. It siphons nearly 20 million gallons a day, and then pumps the water back into the river up to 35 degrees hotter. Madigan's lawsuit accuses Trump Tower of failing to meet several requirements in a state permit intended to limit the number of fish pinned against intake screens or killed by sudden changes in pressure and temperature. Building managers also failed to properly renew the permit and have been operating the massive cooling system unlawfully for nearly a year, according to the lawsuit.
- **Top Nationwide Polluter in Illinois:** A pork-processing plant in western Illinois released an average of nearly 2,000 pounds of harmful nitrogen per day into a tributary of the Illinois River last year – equivalent to the load in raw sewage produced by a city of 79,000 people. The Beardstown pork plant, owned by Brazilian meat company JBS, ranked the plant, located an hour northwest of Springfield in the small city of Beardstown, as the worst-polluting meat-processing plant in the U.S. last year. That's according to a new report from the nonprofit Environmental Integrity Project. But the plant did not exceed its permit limits. And it's not the only one. EIP found that many plants that are not violating their permits are actually discharging more pollution than those breaking the law. The group's report suggests that state regulators in these cases are failing to set strong enough pollution limits in permits issued to meat processing plants, making it difficult to protect waterways used for swimming, fishing and other public uses.

- **Middle Fork Vermilion River Issues:** The Illinois Environmental Protection Agency has issued a violation notice to Vistra Energy Corporation for alleged surface water contamination at its retired Vermilion Power Station near Oakwood, Illinois. In May the Illinois EPA conducted a stream survey of the Middle Fork Vermilion River near three coal ash ponds owned by Vistra, and found water with “heavily stained reddish-brown discoloration” seeping from the riverbank. Vistra took over the old Illinois Power Company coal fired plant and closed the site but plans to leave the coal ash pits in place covered by a cap of clay. Environmentalists argue the river is eroding into the pits and the pits are in danger of releasing the ash into the waterway. This is putting the only “Wild and Scenic River” in the state in danger or contamination.
- **Illinois Environmental Protection Declining:** Nearly 50 years ago, Illinois became the first state in the nation to adopt a comprehensive Environmental Protection Act. The act, passed in 1970, established a trio of offices to protect the state’s environment, setting up a system that could legislate, rule and enforce. But since then structure has steadily deteriorated. The Illinois EPA’s staff has been cut in half over the past 15 years. Overall, the number of full-time employees at the agency has dropped from 1,260 in 2002 to 635 last year, according to state records. The Institute for Environmental Quality was eliminated within five years. The Pollution Control Board’s budget has been folded into the budget for the Environmental Protection Agency in the past 15 years. The Pollution Control Board, which handles less severe cases, has also seen a downturn in referrals. In 2014, the board had 54 cases but by 2017 the board had only 18 administrative citation cases. Not only are protections not being pursued, but the EPA is considering rules that would actually make air quality worse.

National Issues:

- **Endangered Species Act Endangered:** The Interior Department is making sweeping changes to the Endangered Species Act. One change, for instance, would eliminate longstanding language that prohibits considering economic factors when deciding whether or not a species should be protected. The agency also intends to make it more difficult to shield species like the Atlantic sturgeon that are considered “threatened,” which is the category one level beneath the most serious one, “endangered.” The Supreme Court has already weighed in on one change by setting aside a lower court ruling that afforded protection to an area where threatened animals do not currently live but might one day with significant changes. The changes also could give the government greater leeway to play down climate change in judging whether a plant or animal is at risk of extinction. Environmentalists criticized the change — which involves writing a new definition for the term “foreseeable future” — as giving the government greater leeway to discount future effects of global warming.
- **Pollution Rules Relaxed for Mines:** Environmental groups are challenging the Trump administration in federal court over its rejection of an Obama-era rule that would have required mining companies to prove they have enough money to clean up their pollution. The reversal under Trump leaves taxpayers responsible into the future for mining pollution that fouls waterways and endangers public health. The proposal applies to “hard-rock” mines that extract gold, iron, lead and other minerals, but not coal. In many cases in the past, mining companies have filed bankruptcy and abandoned polluted mines after they were done extracting the minerals.
- **Waters of the United States Weakened:** The Trump administration has unveiled a plan that would weaken federal clean water rules designed to protect millions of acres of wetlands and thousands of miles of streams nationwide from pesticide runoff and other pollutants. Under the original rule (Waters of the United States), farmers using land near streams and wetlands were restricted from doing certain kinds of plowing and planting certain crops, and would have been required to apply for permits from the Environmental Protection Agency in order to use chemical pesticides and fertilizers that could have run off into those water bodies. Under the new Trump plan, which lifts federal protections from many of those streams and wetlands, those requirements will be lifted. The new Trump water rule will retain federal protections for larger bodies of water, the rivers that drain into them, and wetlands that are directly adjacent to those bodies of water, but it will strip away protections of so-called “ephemeral” streams, in which water runs only during or after rainfalls, and of wetlands that are not adjacent to major bodies of water, or connected to such bodies of water by a surface channel of water.
- **Clean Water Act Permit Review Rules Changed:** The Trump administration has taken the first step to limit states’ ability to block permits under the Clean Water Act. In a December memo, Army Corps of Engineers chief R.D. James directed the agency to write new guidance limiting the time states have to review permits for projects that would dredge or fill in wetlands and streams. The guidelines already state that the review period should be 60 days, but the 60 day time period began when an application was considered complete. Now the 60 day clock will begin when the application (whether complete or not) is considered received. This could result in companies submitting incomplete permits, then running the 60 day clock out until the state loses its ability to approve or deny the application.

- **Deildrin and Brain Damage:** Long article about deildrin, a banned chemical that is still in high concentrations in the environment (especially the Midwest States), that has been linked to brain damage and Parkinson’s disease. The current EPA limits are set much too high to be safe according to the article.
- **Chromium Pollution of Lake Michigan:** U.S. Steel agreed Monday to pay nearly \$900,000 to settle a complaint filed after one of the company’s plants spilled toxic chromium into a Lake Michigan tributary last year. The proposed settlement comes almost a year after chromium-contaminated wastewater spilled into a ditch that drains into Lake Michigan next to the steel mill. A review of state records revealed that the Midwest Plant violated chromium limits at least four times since 2013. In November, Mayor Rahm Emanuel threatened to sue U.S. Steel over the plant’s chronic pollution problems, citing testing after the April 2017 spill that detected a plume of hexavalent chromium drifting toward the city’s drinking water intake off 68th Street. The EPA later rejected Emanuel’s request for the city to be involved in negotiations that led to the proposed settlement. The city of Chicago and a band of Great Lakes surfers are challenging a federal legal settlement with U.S. Steel, accusing the Trump administration of failing to punish the steelmaker harshly enough for repeated spills of toxic chromium into Lake Michigan. The letter described the nearly \$900,000 in proposed fines and other penalties as woefully insufficient, condemned a lack of environmental improvement projects for surrounding communities and demanded an independent study of potential long-term damage caused by chromium discharges from U.S. Steel’s Midwest Plant in Portage, Ind.
U.S. Steel also should be required to create an automated early warning system to alert authorities about future spills, the letter concluded.
- **Lake Michigan is Warming:** Summer surface water temperature in Lake Michigan has warmed about 3 degrees since 1980, and is projected to accelerate, rising at least 1 degree a decade, experts say. A hotter climate could become a problem for some game fish, like trout and salmon that depend on cold, oxygen-rich waters.

Fish Kills:

<u>Month</u>	<u>Day</u>	<u>Water Area</u>	<u>County</u>	<u>Cause</u>	<u>Fish killed</u>	<u>Fish value</u>	<u>Investiga- tion cost</u>	<u>Total cost</u>	<u>miles</u>
May	18-19	Coon Creek	Iroquois	UNK	152,103	\$61,294.87	\$1902.48	\$63,827.35	12.26
July	25	Beaver Creek	Iroquois		19,379	\$37,828.49	\$844.49	\$38,672.98	9.93
Sept	4	Indian Creek	Livingston		19,134	\$7067.29	\$518.46	\$7585.75	3.43
Sept	12	Little Vermilion River	LaSalle	IND	21,298	\$40,713.38	\$1239.57	\$41,952.95	7

NUMBER OF FISH KILL INVESTIGATIONS:	4	INVESTIGATION COST:	\$4,505.00
NUMBER OF FISH KILLED:	211,914	TOTAL VALUE OF FISH:	\$147,534.03
TOTAL MILES AFFECTED:	32.62	TOTAL COST:	\$152,039.03

Good News

Project works to boost number of mussels in Kane, McHenry counties

The Forest Preserve District of DuPage County's Urban Stream Research Center is helping boost populations of freshwater mussels in waterways in Kane and McHenry counties, district officials said. The district will receive \$100,000 from Nicor Gas as part of an intergovernmental agreement with the Forest Preserve District of Kane County for mussel propagation, monitoring, training and research collaboration. The agreement will allow Nicor to replace eight miles of natural gas pipeline, a project that will affect slippershell mussels in Kane County's Tyler Creek, according to a press release from the DuPage County Forest Preserve District. The district's Urban Stream Research Center will use the money to increase slippershell and other native mussels in both Kane and DuPage counties as well as conduct additional research, perform post-release monitoring and provide aquatic training to area ecologists, the release stated. The district is also helping the McHenry County Conservation District boost populations of creek heelsplitter and fluted-shell freshwater mussels in Nippersink Creek at Glacial Park in McHenry County.

Mussels act as "filter feeders" by taking in large amounts of water and then filtering out bacteria, algae and suspended particles before passing the clean water back into the river, according to the release. One large adult mussel can filter more than six gallons of water in one day. "Freshwater mussels are what we call a 'keystone species,'" said Jessi DeMartini, the district's aquatic research center coordinator in the release. "They may be small, but they have enormous beneficial effects on the lives of other organisms, including humans." Over a century of man-made changes to rivers have damaged mussels' preferred habitats, district officials said. As a result, of the 300 known species of native freshwater mussels in the U.S., 70 percent are listed as endangered, threatened or species of special concern at federal and state levels. The Urban Stream Research Center is located in Blackwell Forest Preserve in Warrenville where Springbrook Creek enters the West Branch of the DuPage River.

Banking on wetlands — our evolving land ethic by Clare Howard • August 29, 2018 •

Landfill, garbage disposal, wetland restoration, native plants, environmental beauty. Not words typically associated with each other, but the association is perfectly logical for Charles Hostetler. He hopes to make the correlation universally clear with a project along Kickapoo Creek Road. A hydrologist with the Peoria Disposal Company, Hostetler has worked on a design that will transform Vicary Bottoms Dog Park into a wetland and hiking trail. The project is planned to earn wetland mitigation bank credits to allow PDC to develop its landfill No. 3 site that covers an ephemeral wetland. Under the Clean Water Act, any development that destroys a wetland must be balanced by creation of a corresponding wetland within the same floodplain with compensating environmental benefits. "I believe major change is coming to how Central Illinois looks at development," Hostetler said. Wetland mitigation used to be a haphazard process with concrete rip rap dumped around the edges of a retaining pool. Now both the U.S. Army Corps of Engineers and Illinois Department of Natural Resources must sign off on these mitigation projects. Hostetler worked for 25 years on projects out west before returning to the Peoria area four years ago. He said mitigation banking was easier to do in the west but the concept is gaining ground in the Midwest. "In the 1960s, people used the banks of Kickapoo Creek as a dump for trash. Now I can see a string of wetlands along Kickapoo Creek," he said. "A necklace of wetlands. A constellation of these wetlands up and down the creek will enhance the entire ecosystem. There will be a synergy that is not just evaluated by each individual wetland but by a necklace of these sites." He thinks his current project could be a model for good wetland mitigation banking. Wetland restoration is superior to the reactive work of putting up sandbags and levies to contain flooding, Hostetler said. He expects work on the site along Kickapoo Creek will begin late this year and is projected to cost \$1,150,000. Completion is expected by autumn 2019. "As the creek begins to heal, it will regain its meanders and will cut down on siltation and nitrogen ending up in the Gulf of Mexico," he said. He will oversee maintenance of the wetland for its first five years and then maintenance will be assumed by the Peoria Park District. Hostetler, who has his PhD in chemistry, said Kickapoo Creek is loaded with farm chemicals including phosphate and nitrates and the wetland restoration will help filter out those chemicals. The restoration will also mean Kickapoo Creek could become more feasible to navigate by kayak or canoe at certain times of the year. The science of wetland restoration is still evolving. Hostetler has a list of native plants that will be part of the site restoration. "The plants will have to settle in over several years. Relax into the environment," he said. "It took nature 10,000 years to build wetlands. Then we started to tear them up about 1910 to 1930. Now we need to reestablish the land's connection with its past." Vicary Bottoms wetland restoration will encompass 10.5 acres and is one of the most complex Hostetler has created. He estimates about 15,000 semitruck loads of soil will be removed so Kickapoo Creek flows into the wetland. While the Clean Water Act is credited for the current work on wetland restoration, Hostetler said regulations became more expansive and inclusive with changes in what the U.S. Army Corps of Engineers has jurisdiction over. The term "waters of the United States" expanded from

major, navigable rivers like the Illinois, Mississippi, Colorado and other major rivers to include creeks like the Kickapoo, ephemeral wetlands and even farm ponds. "Now we have a more scientific formula to interpret the law," Hostetler said, explaining that a landfill cannot be built in a floodplain without building credits in a wetland mitigation bank by construction of a corresponding wetland in the same floodplain. A series of wetlands along Kickapoo Creek will help reduce the "flashiness" of the creek that results when water levels surge and recede quickly. That flashiness results in channelization, steep creek beds and erosion. Surging water causes more deposits in the Gulf of Mexico's Dead Zone. "This necklace of wetlands will work in sync to help restore the meanders, slow the water so it soaks into the land and prevent erosion and removal of nutrients," Hostetler said. "This process is not static. How we go about wetland restoration will change as the philosophy of development changes and the land ethic evolves." Tracy Fox, one of the founders of Friends of Rocky Glen and an area environmentalist, sees multiple benefits in the location of this wetland mitigation project. It was more than five years ago Fox suggested mitigation occur on public land rather than on a site within PDC property that is inaccessible to the public. The Vicary Bottoms Wetland Restoration will be surrounded with a boardwalk and will provide both recreational and educational opportunities for the public. It is also near Rocky Glen that has regular guided tours. "I would love it if this becomes part of a necklace of restoration work along the Kickapoo," Fox said. "We'd have a chain of parks from Wildlife Prairie Park." Also looking at this area is Donald Hey, executive director of Wetland Research based in Wadsworth outside of Chicago. Hey is working on gaining support for a massive wetland restoration project spanning up to 1,000 acres in the Kickapoo Creek floodplain. He expects his project would be the largest wetland restoration in the state.

Demolition crews chipping away at Danville's low-head dam Wed, 08/15/2018 - 7:00am | Tracy Crane

DANVILLE — Demolition crews continue to chip away at the low-head dam on the Vermilion River in downtown Danville. "We are making progress down there," Lindell Loy, construction manager with the Illinois Department of Natural Resources, said about the dam-removal project below and just east of Memorial Bridge on South Gilbert Street. A crew with Halverson Construction Company is using heavy equipment to break up the defunct concrete dam, slowly moving from one side of the river to the other on a causeway — an earthen platform that can support heavy equipment — they are building as they go. The state accepted Halverson's bid for the project in the spring. Loy said that once the crew reaches the other side and the dam and piers are completely removed, they will stabilize the far bank by placing a wall of loose stones known as riprap to prevent erosion. The crew will then work their way back across the river, removing the causeway, and finally stabilize the other bank. He said some of the causeway material will be used for that. "The project should be done by the end of the year, if the weather cooperates with us," he said. "But the weather has to cooperate."

Right now, the river is naturally at a low level. And Loy said that when they initially broke the low-head dam, which created a pooling effect immediately upstream, the water level underneath Memorial Bridge — which carries South Gilbert Street over the river — dropped, revealing a large section of the former bridge that was removed prior to the current bridge being built in the 1950s. Loy said the arched piece of former bridge, a surprise to everyone, can be seen in the river now but will eventually be removed. Danville Mayor Scott Eisenhauer, a longtime proponent of removing the city owned low-head dam for safety reasons, said the project started the third week of July. Originally, he said, the plan was for another city-owned but smaller low-head dam on the North Fork of the Vermilion River in Ellsworth Park to be removed first, but contractors were able to start sooner than anticipated on the larger dam. Both dams have had no functional purpose for decades and have been the site of multiple drownings over the last 40 years. A push by city administration to remove both of them ramped up after Sandra Barnett, a 24-year-old University of Illinois graduate from Woodridge, drowned at the larger dam during a canoe trip in July 2003. Low-head dams have been called "drowning machines" because water spills over them, creating a roller effect just below the dam that can trap a swimmer. A sign posted at the Ellsworth dam warns of the roller effect. Some local fishing enthusiasts and others were against removing the larger dam because it would eliminate the pooling effect upstream, which created popular fishing spots. In several studies prior to the dams' removal, Eisenhauer said, it was indicated that the "pool" created by the larger dam extended only to Memorial Bridge, so it would not affect water levels farther upstream. The Danville City Council approved the removal of both dams in late 2013, and the state agreed to fund the work. But that funding got hung up in the 2-year-long state-budget crisis that began in 2015, and the money was not appropriated again until earlier this year, finally paving the way for demolition. Removal of the Ellsworth structure is expected to be done in-house by state crews, but Loy said an exact date for the start of that demolition has not been set.

State Concerns

Asian Carp:

State of Illinois offers to sponsor Asian Carp project to remove invasive species By Alex Ortiz, Shaw Media 11:20 pm

The U.S. Fish and Wildlife Service hauled away containers of Asian carp from the Illinois River near Allen Park in Ottawa in 2017. Gov. Bruce Rauner announced the state will partner with the U.S. Army Corps of Engineers to combat the spread of the invasive species. Illinois Gov. Bruce Rauner announced the State of Illinois' willingness to partner with the U.S. Army Corps of Engineers to enhance efforts to keep the invasive Asian Carp from reaching Lake Michigan. Illinois is the only state with the necessary rights-of-way, public water authority and jurisdiction to serve as the nonfederal sponsor and move properly mitigated measures forward to protect the Great Lakes, taxpayers and the local economy and environment, according to a press release. "No one cares more about protecting Lake Michigan and our Great Lakes than the State of Illinois," Rauner said in the press release. "While Illinois has jurisdiction over our waterways and is the only state authorized to serve as project lead, I realize we cannot be effective unless we work together." Rauner also invited all seven governors from the Great Lakes states to work with Illinois and the Army Corps of Engineers as the details of the plan are finalized. Since 2010, the Illinois Department of Natural Resources has led 27 local, state, federal and provincial partners in keeping Asian Carp out of Lake Michigan and the removal of 93 percent of the invasive species' population.

Governor to Governor: We Cannot Afford to Wait Any Longer on Asian Carp Issue By Pat Moody | Posted December 11, 2018 | Moody on the Market Telling him, "We cannot afford to wait any longer to take action," Michigan Gov. Rick Snyder has dispatched a letter today to the Governor of Illinois urging him to join Michigan and other Midwestern states and provinces in a partnership to prevent Asian carp from entering the Great Lakes. Snyder's letter outlines a partnership agreement that would provide up to \$8 million of Michigan funds to support the Brandon Road lock and dam project to help block the entry of the harmful and invasive species and keep it from decimating commercial and sport fishing and boating throughout the entire Great Lakes region. Saying, "We cannot afford to wait any longer to take action," Snyder tells Gov. Bruce Rauner, "The entry of Asian carp into the Great Lakes would have a devastating, permanent impact not only in Michigan, but in every Midwestern state or province that shares this shoreline. The strength, protection and sustainability of our economy, environment, industries and public health are at stake." The purpose of this agreement is to provide transparent, efficient, and effective support to the project in partnership between the states of Michigan and Illinois. As the non-federal sponsor for the Brandon Road project, the State of Illinois is the lead agency with jurisdiction, supervision and regulatory permitting authority over Illinois public waters which specifically includes the project. To satisfy the operation and maintenance costs of this non-federal sponsorship, the State of Michigan has committed a down-payment of up to \$8 million of state funds in fiscal year 2019. The U.S. Army Corps of Engineers recently released its updated feasibility report on Brandon Road to help prevent invasive Asian carp from reaching the Great Lakes. The report includes infrastructure and technology upgrades, such as air bubble curtains, cameras, and flushing jets, to prevent the fish from swimming into the lock and to Lake Michigan. This project is the next step in protecting the Great Lakes from Asian carp while ensuring navigation remains safe, reliable, and efficient through the interconnected waterways of Illinois and the Great Lakes. A recent public opinion poll shows an overwhelming majority of people who live near the Great Lakes support immediate action to install additional structural protections that can keep Asian carp from moving out of Illinois rivers and into the Great Lakes. The poll – commissioned by the Great Lakes Partnership to Block Asian Carp – is the first effort to survey residents in Illinois, Indiana, Michigan, Ohio, and Wisconsin about their understanding of the risk of invasive carp. Keith Creagh is Director of the Michigan Department of Natural Resources. He says, "Residents and leading stakeholders across the Great Lakes Basin are almost unanimous in their belief that more needs to be done to stop Asian carp." The DNR Chief adds, "Michigan stands ready to provide funding to support immediate action by the Army Corps because we know their actions will provide additional protections for the Great Lakes." Michigan governor seeks Illinois' help with Asian carp plan Michigan Gov. Rick Snyder is urging his Illinois counterpart to help pay for a project to keep invasive carp from establishing themselves in the Great Lakes. Snyder sent a letter Tuesday to fellow outgoing Republican Gov. Bruce Rauner, seeking support in fortifying a waterway. Snyder says Michigan would provide up to \$8 million for upgrading the Brandon Road Lock and Dam near Joliet, Illinois. Experts consider that a good location to block movement of Asian carp that have infested the Mississippi and Illinois rivers. Several states bordering the lakes, including Michigan and Illinois, agreed previously to discuss cost-sharing. But the U.S. Army Corps of Engineers recently said the project would cost \$778 million — three times more than previously thought. Rauner spokeswoman Elizabeth Tomev says 'Illinois looks forward to a fair share discussion with all the stakeholders' once the project's 'true costs' are known.

SIU receives 115-pound black carp specimen for invasive species study by Tim Crosby

CARBONDALE, Ill. – Southern Illinois University Carbondale researchers this weekend received what is believed to be the largest specimen of the invasive fish species black carp ever brought in for scientific analysis. The fish, a 115-pound

female caught Thursday by commercial fishers on the Mississippi River near Cape Girardeau, Mo., could help unlock important secrets about its range, health and reproductive potential in that river and its larger tributaries, said Gregory Whitledge, associate professor of zoology at SIU. SIU took possession of the fish Friday, after the fishers contacted the university. SIU manages a program funded by the Illinois Department of Natural Resources that pays commercial fishers for black carp that they catch and turn over to the university for scientific research. Zoologists hope the new specimen will shed light on an invasive species. During the weekend, researchers, including graduate student Hudman Evans, who is writing his master's thesis in zoology on the invasive black carp issue, removed key organs and tissue samples that will tell the scientists much about the individual and its population. SIU also cooperates with the U.S. Geological Survey and IDNR on the research. Evans said he became interested in fisheries as a middle school student and became interested in black carp after searching for graduate school opportunities. So far, his research has included capturing specimens and examining their diet in order to determine if they are eating the same prey as native fish species. "This specimen will contribute diet analysis data to my project and also shed light on how black carp diets change as they get older and grow to bigger sizes," he said. Black carp initially meant to control parasites Black carp initially were brought to the United States from their native China as a potential means of controlling parasite-carrying snails that were damaging aquaculture fish in the southern states. At some point, however, some of them escaped – possibly during flooding events – and made their way to the Mississippi River. The first wild black carp were caught in the river during the early 2000's. But during the last five years, commercial fishers increasingly have reported catching them in nets along with the game fish they are seeking. It's a worrying trend Whitledge said, and one that SIU is on the vanguard of investigating. "We have several projects going with the black carp, as well as Asian carp, another invasive species," Whitledge said. "We hope this fish will tell us more about how black carp might impact native species, how big the potential population is, their range and how fast they are expanding." Fish of unusual size, typically only commercial fishing outfits catch the fish, as its location and feeding habits lend it more to those practices than the typical rod-and-reel angler. Whitledge said the enormous specimen is certainly the largest ever brought in for scientific research, and quite possibly the largest ever caught in the United States. When he heard about the catch, Whitledge said he was excited. "I wanted to get a look at it because it's much bigger than anything we've seen so far," he said. "I'm curious to find out all we can. We knew they were capable of growing this big, but this is one that is large enough that it is still quite an event.

Williamson County mine seeks permission to discharge water into Big Muddy River

A proposal to discharge water into the Big Muddy River is drawing criticism from local citizens and some environmental groups. The application, filed by Williamson Energy LLC and its parent company, Foresight Energy, seeks permission from the Illinois Department of Natural Resources to discharge between 2.5 to 3.5 million gallons of water per day into the river. The energy company said the quantity of water ground water seeping into the mine and the inability of the mine to dispose of the water presents a danger to employees. The application states the water would be carried via a pipeline, about 12 miles in length, to a discharge area in Franklin County. The water to be discharged has elevated levels of chlorides and sulfates. The Illinois EPA stated in an email received this week that chloride and sulfate are toxic to aquatic organisms in amounts above accepted water quality standards. Calls placed to Foresight Energy's office were not returned. A call to the Pond Creek Mine was met with a response of "no comment" from the engineering department. According to the permit application, the Pond Creek Mine, located east of Johnston City, is quite productive, capable of producing 7.5 million tons of coal per year. The estimated coal reserves for the mine are 370 million tons. A public hearing was Oct. 23 at the Benton Field Office of the IDNR's office of Mines and Minerals. About a dozen citizens spoke against the pipeline, citing the heavy chemical concentration of the water and the amount of water to be discharged. "This is a huge amount of water that is way over typical standards to be dumped into the river," said Joyce Blumenshine, a mining issues volunteer with the Illinois Sierra Club. "The other issue is, what will it do to property owners and downstream users." Blumenshine also noted the mining company has not filed an environmental impact statement. Ed Cross, a public information officer for the Illinois Department of Natural Resources, said such a statement is not required. The water will be discharged through a diffuser in effort to thoroughly dilute the chemical discharge. However, the amount of water being discharged remains troublesome to concerned citizens. Jon Remo, an associate professor of geography and environmental resources at Southern Illinois University Carbondale, said the amount of water to be discharged would be equal to about 10 percent of the Big Muddy's flow during the dry summer months. An email from Kim Biggs, a public information officer with the Illinois Environmental Protection Agency stated, "When the IEPA issues the NPDES (National Pollutant Discharge Elimination System) permit, the NPDES permit will ensure that the concentration of chlorides and sulfates will meet the water quality standards outside a mixing zone. It is anticipated that the facility will only be allowed to discharge when the flow of the Big Muddy River is above 30 cubic feet per second. "It is anticipated that the NPDES permit will have an equation to demonstrate that the water quality standards are met outside of a mixing zone. This equation will only allow 25 percent of the Big Muddy River to be used for mixing and will take into account the volume and concentration of the effluent and volume and concentration of the receiving stream." In

response to questions about possible effects on plant and animal life downstream, the IEPA email said it expects no problem because the permit would require chloride and sulfate concentrations to be well below water quality standards. "It is an unacceptable dilution solution, which industry likes to use," Blumenshine said. "It puts the burdens of pollution on the public. In the future, this will cause a major problem with water quality. We don't know how many options (were) seriously reviewed for treating the water in other ways." The public comment period on the application ended Nov. 2. The IDNR has 60 days from that date to issue a ruling.

Madigan sues Trump Tower for violating clean water laws intended to protect Chicago River fish Michael Hawthorne Contact Reporter Chicago Tribune

Trump International Hotel & Tower is endangering fish and other aquatic life in the Chicago River, Illinois Attorney General Lisa Madigan alleges in a new lawsuit targeting the president's skyscraper for multiple violations of clean water laws. The glass-and-steel tower, emblazoned with a sign spelling "TRUMP" in letters more than 20 feet high, is one of the city's largest users of river water for its cooling systems. It siphons nearly 20 million gallons a day through intakes so powerful the machines could fill an Olympic swimming pool in less than an hour, then pumps the water back into the river up to 35 degrees hotter. Madigan's lawsuit, filed late Monday in Cook County Circuit Court, accuses Trump Tower of failing to meet several requirements in a state permit intended to limit the number of fish pinned against intake screens or killed by sudden changes in pressure and temperature. Building managers also failed to properly renew the permit and have been operating the massive cooling system unlawfully for nearly a year, according to the lawsuit.

"Trump Tower continues to take millions of gallons of water from the Chicago River every day without a permit and without any regard to how it may be impacting the river's ecosystem," Madigan said in a statement. "I filed my lawsuit to make sure Trump Tower cannot continue violating the law." The Tribune first reported in June that the decade-old skyscraper is the only Chicago high-rise that has failed to document it took measures to protect fish and aquatic life in the river. Trump's Chicago managers also haven't conducted a study of fish killed by the luxury hotel and condominium complex — another step required five years ago by the Illinois Environmental Protection Agency in the initial permit for the building's water intakes. A draft of the state's latest permit gives building managers another three years to complete the ecological study and confirms state inspectors failed to ensure the skyscraper has complied with the fish-protecting regulations. The Illinois EPA pulled back from renewing Trump Tower's permit after the Sierra Club, Friends of the Chicago River and the University of Chicago's Abrams Environmental Law Clinic threatened to sue. The groups have informally discussed a settlement with Trump Tower representatives. On Tuesday, the Trump Organization emailed a two-sentence statement in response to Madigan's lawsuit: "We are disappointed that the Illinois attorney general would choose to file this suit considering such items are generally handled at the administrative level. One can only conclude that this decision was motivated by politics." Madigan, a Democrat, is not running for re-election to the statewide office she has held since 2003. She filed the lawsuit based in part on a referral from the Illinois EPA, which is controlled by Republican Gov. Bruce Rauner. This is the second time Madigan has sued Trump Tower. She also filed a complaint in 2012, three years after Trump opened his glistening Chicago high-rise at 401 N. Wabash Ave., because developers had failed to get a permit for a new cooling-water intake on the former site of the drab, low-slung Chicago Sun-Times Building. The corporation in charge of the hotel and condo tower later agreed to follow the law and pay a \$46,000 fine. In settlement documents, the state said the fine would "serve to deter further violations and aid in future voluntary compliance." Legal action to protect the river once wouldn't have even crossed the minds of public officials who for decades considered it little more than an industrialized sewage canal.

Engineers reversed the river away from Lake Michigan more than a century ago to keep the city's waste out of its source of drinking water. While most of the river's flow downtown still comes from a sewage treatment plant in north suburban Skokie, the water is clean enough today that kayaks can be rented along the popular Riverwalk and other spots along the urban waterway. During the past four years, federal and state biologists have found nearly 30 types of fish swimming in the signature stretch of the river between Lake Michigan and Wolf Point, including largemouth bass, bluegill, white perch and walleye. Most of the fish arrived naturally and appear to be growing in number, based on periodic surveys by federal, state and local officials. Another species found downtown is channel catfish, a relatively easy catch for anglers that the Illinois Department of Natural Resources stocked in the North Branch four years ago after building artificial nesting cavities to encourage reproduction.

Illinois Has Worst-Polluting Meat-Processing Plant in US, Study Finds Alex Ruppenthal | October 11, 2018 5:05 pm A pork-processing plant in western Illinois released an average of nearly 2,000 pounds of harmful nitrogen per day into a tributary of the Illinois River last year – equivalent to the load in raw sewage produced by a city of 79,000 people. That's according to a new report from the nonprofit Environmental Integrity Project, which ranked the

plant, located an hour northwest of Springfield in the small city of Beardstown, as the worst-polluting meat-processing plant in the U.S. last year. EIP examined federal records for 98 large meat-processing plants across the country that together release hundreds of thousands of gallons of pollutants into waterways each year. Of those, 74 – or more than three-quarters – exceeded their permit limits for nitrogen, fecal bacteria and other pollutants at least once. More than half of the plants had at least five violations, according to data from the U.S. Environmental Protection Agency. The Beardstown pork plant, owned by Brazilian meat company JBS, ranked the worst in terms of total nitrogen pollution, which fuels excessive algae growth and creates lowoxygen “dead zones” that kill off fish, according to the EIP report. The JBS plant was also responsible for a spill of 29 million gallons of hog waste in March 2015, which killed nearly 65,000 fish, according to the report. But the plant did not exceed its permit limits. And it’s not the only one. EIP found that many plants that are not violating their permits are actually discharging more pollution than those breaking the law. The group’s report suggests that state regulators in these cases are failing to set strong enough pollution limits in permits issued to meatprocessing plants, making it difficult to protect waterways used for swimming, fishing and other public uses. “State and federal regulations are far too lax for polluters like JBS that are dumping huge quantities of nitrogen pollution into our streams and rivers,” said Carol Hays, executive director of the Illinois-based nonprofit Prairie Rivers Network, in a statement. “The state needs to pass nitrogen pollution standards and make sure slaughterhouses do their share to reduce nutrient pollution.” A JBS spokesperson issued the following statement in response to EIP’s report: “The JBS Beardstown pork facility is well within its permitting requirements and has achieved improved environmental compliance since our acquisition of the facility in late October 2015. The facility has not experienced a water noncompliance issue since December 2015. We also dispute the report’s 2017 average daily discharge calculation, as the report’s calculation is inconsistent with our internal data. “Our environmental teams remain focused on nitrogen reduction and ensuring that the Beardstown facility continues to provide economic opportunities for team members and family farmers, while safeguarding the environment through compliance with all applicable environmental regulations and standards.” Another Illinois plant, Tyson’s beef-processing plant near the Quad Cities, also made the list of the country’s 10 worst-polluting plants, in terms of nitrogen pollution. Last year, the plant released nearly 1,300 pounds of nitrogen per day into the Rock River, a tributary of the Mississippi River. The EIP report noted that not all meat-processing plants studied were run poorly or in violation of their permits. The worst-polluting plants in the study released about 30 times more nitrogen per day than the cleanest plants. “This is a sign that these dirty slaughterhouses can improve substantially simply by installing wastewater treatment systems already used by their competitors,” said Eric Schaeffer, EIP’s executive director, in a statement. “Requiring these improvements across the U.S. would level the playing field for the industry, while improving protections for waterways and public health.” Contact Alex Ruppenthal: @arupp | aruppenthal@wtw.com | (773) 509-5623

DANVILLE — "In perpetuity."

That was the well-worn phrase of an Illinois Environmental Protection Agency official Monday night, explaining what the state agency expects of any long-term plan to "close" coal-ash impoundments on the former Dynegy power plant property along the Middle Fork River. Richard Cobb, of IEPA's division of public water supplies, told about 100 people at a public hearing Monday night in Danville that any final plan between the state agency and Vistra-Dynegy must ensure the ash doesn't harm the public or environment "in perpetuity." "This is the only National Scenic and Wild River in Illinois, so whatever is done here, it's the 'P' word, in perpetuity bank stability," Cobb said, adding that a plan needs to be aesthetically pleasing and include ongoing maintenance. The hearing at Danville Area Community College was not held by the IEPA or any other government agency but by the public — a "people's hearing" coordinated by the Eco-Justice Collaborative, a local non-profit that's been advocating, along with groups like the Prairie Rivers Network, for the total removal of coal ash from the Middle Fork River flood plain. According to the U.S. EPA, coal ash can contain contaminants like mercury, cadmium and arsenic that pollute waterways, groundwater, drinking water and air without proper management. Dynegy closed the power plant in 2011. That same year, testing from four groundwater monitoring wells at the ash impoundments revealed levels of boron, manganese and sulfate in excess of Groundwater Quality Standards, resulting in the IEPA issuing violations in 2012. Since then, Dynegy officials have slowly been negotiating with IEPA a final closure plan for the ash pits that are left behind from decades of burning coal. Dynegy officials have said they want to stabilize the bank that separates the Middle Fork and the 3.3 million cubic yards of ash and then cap the ash ponds with an earthen layer. But Eco-Justice and other river advocates maintain that the coal ash pits are already leaking contaminants into the river via groundwater flowing through the pits and into the river through seeps along its banks. And they also maintain that the "meandering river" is moving west toward the pits and erosion will eventually compromise any stabilization measures if the ash is left in place. Bruce Rhoads, a fluvial geomorphologist who testified at Monday's hearing, said stabilizing river banks is challenging. "In a meandering river such as the Middle Fork, attempts to effectively stabilize banks against the natural process of erosion are challenging, and even with frequent monitoring and maintenance, could fail," he said. In addition to a stream bank erosion study Dynegy completed, Cobb said the IEPA is

awaiting results of six new rounds of groundwater monitoring at the site. That information will be taken into consideration in choosing one of five closure plans that range from capping and leaving the ash in place to removing it altogether. He said cost estimates and time lines were provided by Vistra-Dynegy with each option. Cobb said an interim stabilization option may be required. For instance, he said the total removal of coal ash from the site could take 8-10 years, so an interim stabilization plan would be needed to protect the river until all the ash is removed. Along with Rhoads, other experts testified Monday, including Abel Russ, an Environmental Integrity Project attorney and Andrew Rehn with Prairie Rivers as well as members of the public and residents in other states who have been affected by coal ash contamination. Eco-Justice is compiling all the comments and information from the hearing and will be submitting it to the governor's office, the Illinois Department of Natural Resources and the IEPA for consideration in upcoming decisions later this year on a final closure plan at the Dynegy site. An attorney from Vistra Energy, which recently merged with Dynegy, also attended Monday's hearing. He declined to answer any questions but gave the News-Gazette a lengthy written statement that talks about moving forward with bank stabilization plans, but does not mention any consideration of removing the coal ash from the river's flood plain. "Rest assured: While Vistra inherited this site, as the new owner, Vistra is committed to implementing an effective solution," according to the statement. "Vistra is working through the regulatory process as swiftly as possible, engaging with the appropriate government agencies, and Vistra is committed to proceeding with a swift and protective closure plan."

Looming decisions on coal-ash ponds put Middle Fork on group's endangered list Tue, 04/10/2018 - 7:00am | Tracy

OAKWOOD — Along with legendary American waterways like the Rio Grande, the Middle Fork River in East Central Illinois is garnering national attention for making a national top 10 list — but not for its natural beauty. Illinois' only Wild and Scenic River has been ranked at No. 9 on the list of "America's Most Endangered Rivers," the Washington, D.C.-based advocacy group American Rivers will announce today. The "danger" stems from 3 million cubic yards of coal ash — enough to fill the Empire State Building twice — that's left over from a shuttered coal-fired power plant and sits along the river's western bank. Until this week, the power plant site was owned by Dynegy Inc. On Monday, the Houston-based company finalized a merger with Vistra Energy Corp., based in Irving, Texas.

American Rivers officials said the Middle Fork was included on this year's list because critical decisions regarding the coal ash — placed in three ponds over decades of plant operation — will be made in 2018 by energy company owners in conjunction with the Illinois Environmental Protection Agency. "It's raising awareness to a national level," Jeff Kohmstedt, communications and outreach coordinator with Prairie Rivers Network, said during a Monday visit to the Middle Fork River, along with Lan Richart, of Eco-Justice Collaborative. "And when you do something like that, it shows the importance of the issue to people." The list highlights U.S. waterways facing important decisions in coming months, from draining wetlands on Mississippi's Big Sunflower River to mining in Alaska's Bristol Bay. It's the 33rd year of the endangered list, which in the past has spurred action, something local activists hope will be the case for the Middle Fork. Richart said the designation not only affirms the national significance of the Middle Fork, but the threat it faces from coal ash pollution. "Each day, more and more residents of Vermilion County and East Central Illinois are telling the IEPA, 'This is our river; we want it protected,'" he said, adding that the request to Gov. Bruce Rauner and the IEPA is simple. "As (Vistra) makes plans to leave the area, ask them to remove their coal ash from the flood plain of the river. Illinois taxpayers should not be left with this risk and liability." Dynegy spokesman David Byford said Monday that the former company and newly merged Vistra Energy were not aware of the American Rivers announcement and had no comment at this time. Dynegy closed the power plant in 2011. That same year, testing from four groundwater monitoring wells at the ash impoundments revealed levels of boron, manganese and sulfate in excess of Groundwater Quality Standards, resulting in the IEPA issuing violations in 2012. Since then, the company's long-term plan has been to cap and leave the coal ash pits. Dynegy completed some bank stabilization work in December 2016, plans similar work this year along another section of bank, and says it intends to place the earthen caps over the ponds, leaving the ash in place forever. But local residents, public officials and environmental organizations have long argued that the waste pits are leaching contaminants into the river, including arsenic, barium, boron, chromium, iron, lead, manganese, nickel and sulfate.

Those contaminants, said Andrew Rehn, water resources engineer with Prairie Rivers, are known to cause birth defects, cancer and neurological damage in humans, and can harm and kill wildlife, especially fish. And the river, as a Dynegy-funded engineering report has shown, is carving into the banks that hold the coal ash — erosion that Dynegy was addressing through its stream bank stabilization work. But river advocates argue that similar stabilization methods put in place decades ago eventually succumbed to the natural forces of the river and will again. "This is a critical year for the people of this region to stand up for clean water and claim the kind of future they want for their river," said American Rivers' David Moryc. "Now is the time to raise our voices and demand that Dynegy stop polluting this Wild and Scenic

River and act to ensure the company's coal ash pits do not pose a perpetual threat to the health of the Middle Fork or create a financial burden on taxpayers." In deep Today, American Rivers will unveil its annual list of the 10 'most endangered rivers': 1. Big Sunflower River, Mississippi 2. Rivers of Bristol Bay, Alaska 3. Boundary Waters, Minnesota 4. Lower Rio Grande, Texas 5. South Fork Salmon River, Idaho 6. Mississippi River Gorge, Minnesota 7. Smith River, Montana 8. Colville River, Alaska 9. Middle Fork Vermilion River, Illinois 10. Kinnickinnic River, Wisconsin

Violation Notice Issued For Alleged Contamination At Vermilion Power Station WILL July 19, 2018 JACK BRIGHTON

The Illinois Environmental Protection Agency has issued a violation notice to Vistra Energy Corporation for alleged surface water contamination at its retired Vermilion Power Station near Oakwood, Illinois. In May the Illinois EPA conducted a stream survey of the Middle Fork Vermilion River near three coal ash ponds owned by Vistra, and found water with "heavily stained reddish-brown discoloration" seeping from the riverbank. The violation notice says the seeps were discharging into the river, staining sediment and rocks, and creating "offensive conditions in the Middle Fork." Sanjay Sofat, chief of the Illinois EPA Bureau of Water says the seeps may violate state environmental laws. "We have sent a violation notice to the company in June of 2018 alleging violations of the Clean Water Act and the Pollution Control Board regulations. And you may also know that there's a citizen's suit filed in the federal court and we'll be monitoring that very closely." The Prairie Rivers Network filed a lawsuit in May against Vistra, claiming toxic chemicals and heavy metals from the company's coal ash ponds are contaminating groundwater and the Middle Fork River. Another violation notice was issued in 2012 to Dynegy Energy Midwest for exceeding groundwater quality standards at monitoring wells near the coal ash impoundments. Dynegy merged with Vistra early this year. Vistra has until August 5th to respond to the latest violation notice. The company declined to comment in time for this story.

50 years later, Illinois environmental protection structure has deteriorated By Johnathan Hettinger/Midwest Center for Investigative Reporting April 11, 2018

Nearly 50 years ago, Illinois became the first state in the nation to adopt a comprehensive Environmental Protection Act. The act, passed in 1970, established a triumvirate of offices to protect the state's environment, setting up a system that could legislate, rule and enforce. The Pollution Control Board, a quasi-legislative and quasi-judicial independent agency, would adopt environmental regulations and hear cases on those regulations, the Institute for Environmental Quality would provide independent and focused research for the board, and the Environmental Protection Agency would serve as an enforcement arm, conducting inspections and finding violations.

"It was a great design. It was among the first in the country," said Clark Bullard, a professor emeritus at the University of Illinois and vice chairman of the National Wildlife Federation. But since then structure has steadily deteriorated. The Illinois EPA's staff has been cut in half over the past 15 years. The Institute for Environmental Quality was eliminated within five years. The Pollution Control Board's budget has been folded into the budget for the Environmental Protection Agency in the past 15 years.

The Pollution Control Board, which handles less severe cases, has also seen a downturn in referrals. In 2017, the board had 18 administrative citation cases. In 2014, the board had 54 cases.

"Every category of pollution is not being pursued as it once was," said Deanna Glosser, who served on the Pollution Control Board from 2011 through 2016, including two years as chairman. "It's disproportionate. You wonder what's going on there." Glosser said that she often heard of staffing issues as a reason for fewer cases, but that the decline in enforcements far outpaced the decline in staffing levels.

"Even when you're chairman of the board, they don't tell you what's happening," she said. "Everybody in the state should be concerned, the water quality in the state isn't what it should be." Brian Urbaszewski, director of environmental health at the Respiratory Health Association of Metropolitan Chicago, said the [EPA is proposing rules that would make air quality worse in Illinois](#), increasing the risk of asthma and stroke for people across Illinois through changes to the Pollution Control Board. "It's more than the starving the agency, its actually actively working to increase air pollution," Urbaszewski said.

Nationwide Issues

Interior Department Proposes a Vast Reworking of the Endangered Species Act

A northern spotted owl in Point Reyes, Calif. Credit Tom Gallagher/Associated Press The Interior Department on Thursday proposed the most sweeping set of changes in decades to the Endangered Species Act, the law that brought the bald eagle

and the Yellowstone grizzly bear back from the edge of extinction but which Republicans say is cumbersome and restricts economic development. The proposed revisions have far-reaching implications, potentially making it easier for roads, pipelines and other construction projects to gain approvals than under current rules. One change, for instance, would eliminate longstanding language that prohibits considering economic factors when deciding whether or not a species should be protected. The agency also intends to make it more difficult to shield species like the Atlantic sturgeon that are considered “threatened,” which is the category one level beneath the most serious one, “endangered.” Battles over endangered species have consumed vast swaths of the West for decades, and confrontations over protections for the spotted owl, the sage grouse and the gray wolf have shaped politics and public debate. While the changes proposed Thursday by the Fish and Wildlife Service and the National Marine Fisheries Service wouldn’t be retroactive, they could set the stage for new clashes over offshore drilling and also could help smooth the path for projects like oil and gas drilling in the Arctic National Wildlife Refuge. David L. Bernhardt, the deputy secretary of the Interior Department, said that the 1973 law had not seen major changes in 30 years and described the proposals as streamlining and improving the regulatory process. He rejected a suggestion that the moves would help the oil and gas businesses, although leaders in those industries have long sought similar changes to the ones outlined Thursday. “Together these rules will be very protective and enhance the conservation of the species,” Mr. Bernhardt said. “At the same time we hope that they ameliorate some of the unnecessary burden, conflict and uncertainty that is within our current regulatory structure.”

Environmental activists criticized the proposed changes, saying they would put species at risk of extinction. “These proposals would slam a wrecking ball into the most crucial protections for our most endangered wildlife,” said Brett Hartl, government affairs director at the Center for Biological Diversity. The changes are in keeping with a broader pattern of regulatory moves in the Trump administration aimed at reducing cost and other burdens for businesses, particularly the energy business. Last month the Trump administration also started the process of rolling back the National Environmental Policy Act, an obscure law that is considered the cornerstone of environmental policy, laying out the process federal agencies must follow when considering major infrastructure projects. Republicans in Western states have long sought changes to both laws, arguing they are more focused on preventing development than protecting the environment. Oil and gas companies, the timber industry, farmers, rangers and some private landowners have echoed the message. The Endangered Species Act in particular, many have argued, is outdated, costly and allows for too many lawsuits from environmentalists. Separately, this week Republicans in Congress sought an ambitious overhaul of the law, arguing that only 3 percent of species listed as threatened or endangered have been successfully removed over the life of the act. Robert Gordon, an adjunct fellow at the Competitive Enterprise Institute, a free-market think tank that opposes the Endangered Species Act, said the law is often a burden to property owners and pointed to the legal case of an amphibian called the dusky gopher frog. The Supreme Court has agreed to consider whether the federal government’s designation of private land in Louisiana as “critical habitat” for the frog limited the owners’ ability to develop it. Mr. Gordon said if the proposed rules had been in place, the property would have been less likely to be designated as such. Kathleen Sgamma, president of the Western Energy Alliance, which represents the oil and gas industry, praised the Trump administration proposal, saying that “for too long the E.S.A. has been used as a means of controlling lands in the West rather than actually focusing on species recovery.” She said she hoped the changes, which she described as a “tightening” of procedures, would help lift restrictions on “responsible economic activities on private and public lands.”

Environmentalists expressed concern the changes will gut protections for the country’s most threatened species and weaken the agency’s ability to address climate change. The changes, they contended, are part of a broader effort by the Trump administration to dismantle ecosystem protections and disregard science when making decisions about the environment. In its 40-year existence, the act “has successfully kept 99 percent of listed species from going extinct,” said Christy Goldfuss, senior vice president for energy and environment policy at the liberal Center for American Progress, in a statement. “Instead of continuing the hard work needed to conserve a healthy and vibrant environment for our kids and grandkids, this administration is working to further imperil the more than 1,600 threatened and endangered species.” The Interior Department and the Department of Commerce will give the public 60 days to comment on the changes before finalizing them. Typically, proposals don’t change significantly as a result of the public comment period. Thursday’s proposals also include a change that, while technical, could give the government greater leeway to play down climate change in judging whether a plant or animal is at risk of extinction. Environmentalists criticized the change — which involves writing a new definition for the term “foreseeable future” — as giving the government greater leeway to discount future effects of global warming. Currently, the law defines a threatened species as one “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range,” with the words “foreseeable future” left to interpretation. According to the Interior Department, the new definition will “make it clear that it extends only as far as they can reasonably determine that both the future threats and the species’ response to those threats are probable.” Bob Dreher, senior vice president for conservation programs at Defenders of Wildlife, an environmental group, said that could put climate change in the cross hairs. “If they define it narrowly, then they’ll close their eyes to the fact that 30 years down the road polar bears will be endangered due to sea-level rise,” he said. Another significant proposed

change, which has been rumored since April when a proposal was posted to the White House's Office of Management and Budget, would alter how the Endangered Species Act deals with animals that are categorized as "threatened," or one level below "endangered." Current rules require agencies to automatically extend protections to threatened species that mirror those of endangered species. Changing the rule could roll back some of those protections. Richard B. Stewart, a professor of environmental law at New York University, said the logic for the current rule was that "if you wait until the species' numbers are actually small enough that it's going to become extinct, it may be difficult or too late" to save it. The threatened list, he said, is designed "to anticipate a species is sort of going downhill sufficiently in advance, and protect it." Mr. Bernhardt on Wednesday also said that a section of the law that provides for consultations among federal agencies when considering permit applications would be streamlined. He described it as "where the rubber meets the road of the Endangered Species Act," and said he expected the process to be improved. "Our general intention is to maintain the scope of consultation, but that's always in the eye of the beholder," he said. Correction: July 19, 2018 An earlier version of this article misstated the title of Robert Gordon. He is an adjunct fellow at the Competitive Enterprise Institute, not the director of its National Wilderness Institute.

Trump reversal of mining pollution rule challenged in court • MATTHEW BROWN Associated Press

Environmental groups challenged the Trump administration in federal court Wednesday over its rejection of an Obama-era proposal that would have required mining companies to prove they have enough money to clean up their pollution. The Idaho Conservation League, Earthworks, Sierra Club and other groups filed a petition with the U.S. Court of Appeals in Washington, D.C. asking it to review last year's move to drop the rule. An attorney for the environmental groups said the reversal under Trump leaves taxpayers responsible into the future for mining pollution that fouls waterways and endangers public health. The mining industry responded with a pledge to intervene in the case on behalf of the administration. The proposal applied to "hard-rock" mines that extract gold, iron, lead and other minerals, but not coal. The mining industry and members of Congress from Western states had pushed to kill the rule, arguing it was unnecessary because of existing cleanup requirements already enforced at the state and federal level. In December, EPA administrator Scott Pruitt agreed with the industry's contention that modern mining techniques decrease pollution risks. During the tenure of former President Barack Obama, the EPA determined the opposite — that mining pollution remains an ongoing concern and companies should be required to provide "financial assurances" such as surety bonds for possible cleanup projects. There is a long legacy of taxpayer-funded mine cleanups at many sites where companies went bankrupt and abandoned polluted sites. Trump's EPA "just waved their hands at all their prior findings and offered some really flimsy rationale for why they shouldn't be considered," said Earthjustice attorney Amanda Goodin, who represents the environmental groups. "It's a thinly veiled handout to the mining industry." EPA spokesman Michael Abboud said the agency does not comment on pending litigation. An industry representative rejected the group's claims and said the federal government should be doing more to encourage domestic mining, not imposing rules that duplicate existing regulations. "The EPA's decision not to impose unnecessary additional financial burdens on the hardrock industry was a step in the right direction that should and will be defended," said National Mining Association Senior Vice President Ashley Burke. The mining association's chairman, Phillips S. Baker, Jr., was singled out by Montana regulators in March as an industry "bad actor" because of pollution at mines operated by his former company, Pegasus Gold Corp., which went bankrupt in 1998. Baker denied responsibility for tens of millions of dollars in taxpayer-funded cleanup costs at the Pegasus mines. He's now president of Hecla Mining Company, which is challenging the bad actor designation in court as it seeks to build two copper and silver mines beneath the Cabinet Mountains Wilderness in northwestern Montana. Hard-rock mining companies would have faced a combined \$7.1 billion financial obligation under the Obama era rule, costing them up to \$171 million annually to set aside sufficient funds to pay for future cleanups, according to an EPA analysis. Since 1980, at least 52 mines and mine processing sites had spills or other releases of pollution, according to documents previously released by the EPA. The industry's troubles were highlighted in 2015, when an EPA cleanup team accidentally triggered a 3-million gallon (11-million liter) spill of contaminated water from Colorado's inactive Gold King mine, tainting rivers in three states with heavy metals including arsenic and lead. The financial assurance rule was proposed by the Environmental Protection Agency in January 2017 after environmental groups pressed the government to enforce a long ignored provision in the 1980 federal Superfund law. Coal mines are required to provide assurances that they will pay for pollution cleanups under a 1977 federal law.

Trump Prepares to Unveil a Vast Reworking of Clean Water Protections By Coral Davenport

WASHINGTON — The Trump administration is expected on Tuesday to unveil a plan that would weaken federal clean water rules designed to protect millions of acres of wetlands and thousands of miles of streams nationwide from pesticide runoff and other pollutants. Environmentalists say the proposal represents a historic assault on wetlands regulation at a moment when Mr. Trump has repeatedly voiced a commitment to "crystal-clean water." The proposed new rule would chip away at safeguards put in place a quarter century ago, during the administration of President George H.W. Bush, who

implemented a policy designed to ensure that no wetlands lost federal protection. “They’re definitely rolling things back to the pre-George H.W. Bush era,” said Blan Holman, who works on water regulations with the Southern Environmental Law Center. Wetlands play key roles in filtering surface water and protecting against floods, while also providing wildlife habitat. President Trump, who made a pledge of weakening a 2015 Obama-era rule one of his central campaign pledges, is expected to tout his plan as ending a federal land grab that impinged on the rights of farmers, rural landowners and real estate developers to use their property as they see fit. Under the Obama rule, farmers using land near streams and wetlands were restricted from doing certain kinds of plowing and planting certain crops, and would have been required to apply for permits from the Environmental Protection Agency in order to use chemical pesticides and fertilizers that could have run off into those water bodies. Under the new Trump plan, which lifts federal protections from many of those streams and wetlands, those requirements will also be lifted. A spokesman for the Environmental Protection Agency, John Konkus, declined to comment on the plan. The clean water rollback is the latest in a series of actions by the Trump administration to weaken or undo major environmental rules, including proposals to weaken regulations on planet-warming emissions from cars, power plants and oil and gas drilling rigs, a series of moves designed to speed new drilling in the vast Arctic National Wildlife Refuge, and efforts to weaken protections under the Endangered Species Act. This week in Katowice, Poland, at an annual United Nations conference on mitigating global warming, Trump administration officials held an event touting the benefits of fossil fuels. The proposed water rule, scheduled to be announced Tuesday morning at the Environmental Protection Agency, is designed to replace an Obama-era regulation known as Waters of the United States. Tuesday’s unveiling of the proposal is expected to coincide with its publication in the federal register. After that, the administration will take comment on the plan for 60 days, and it could then revise the plan before finalizing it next year. The Obama rule, developed jointly by the E.P.A. and the Army Corps of Engineers under the authority of the 1972 Clean Water Act, was designed to limit pollution in about 60 percent of the nation’s bodies of water, protecting sources of drinking water for about a third of the United States. It extended existing federal authority to limit pollution in large bodies of water, like the Chesapeake Bay and Puget Sound, to smaller bodies that drain into them, such as tributaries, streams and wetlands. But it became a target for rural landowners, an important part of President Trump’s political base, since it could have restricted how much pollution from chemical fertilizers and pesticides could seep into water on their property. The new Trump water rule will retain federal protections for those larger bodies of water, the rivers that drain into them, and wetlands that are directly adjacent to those bodies of water, according to a detailed eight-page fact sheet prepared by the administration ahead of the unveiling of the rule and reviewed by The New York Times. But it will strip away protections of so-called “ephemeral” streams, in which water runs only during or after rainfalls, and of wetlands that are not adjacent to major bodies of water, or connected to such bodies of water by a surface channel of water. Those changes represent a victory for farmers and rural landowners, who lobbied the Trump administration aggressively to make them. “The Obama administration led with the premise that all water is connected, all water runs downhill, and the federal government could control all water,” said Don Parrish, director of regulatory relations with the American Farm Bureau Federation, who met with White House officials over the summer to press the case for those changes. “If they can control the water that falls out of the sky, they control the land that it falls on,” he said. Mr. Parrish also said the Obama rule chafed its detractors because of the perception it was written by bureaucrats who did not understand the daily reality of farmers’ livelihoods. “The last administration called our concerns silly and ludicrous, and this administration took us seriously. They listened to us,” he said. In particular, he cited a social media campaign run by the Obama administration, “Ditch the myth,” which challenged the claim that the rule would have regulated water in ditches. “With that campaign, they were laughing at us,” he said. Mr. Trump won cheers from rural audiences on the presidential campaign trail when he vowed to roll back the Obama rule. Real estate developers and golf course owners (industries in which Mr. Trump worked for decades) were also among the chief opponents of the earlier rule. One of Mr. Trump’s first actions in office was to sign an executive order directing his E.P.A. chief to repeal and replace the rule. To environmentalists, however, the proposed rule change “upends the core mission of the E.P.A., which is to protect human health and the environment,” said Bart Johnsen-Harris, who works on water policy at the Environment America, an advocacy group. While the Obama rule would have applied federal protections to wetlands that are not adjacent to major bodies of water, or do not directly drain into them via a surface water channel, the new rule will strip away that protection. That potentially opens millions of acres of pristine wetlands to more pollution, according to Mr. Holman of the Southern Environmental Law Center. “For wetlands, this is an absolute disaster, compared to the Obama plan,” he said. While such wetlands may not be physically next to major bodies of water, they can still drain into such larger bodies through underground networks, Mr. Holman said. Stripping away those protections would still allow pollution to seep into the nation’s broader waterways, he said. It would also make it easier for developers to pave over such wetlands. Federal courts had already halted the implementation of the 2015 Obama-era rules in 28 states after opponents sued to block them. However, in recent months the rules had taken effect in the other 22 states. The wetland protection policies put in place decades ago by the first President Bush, an avid fisherman, followed on his own campaign pledge to save wetlands, saying, “all wetlands, no matter how small, should be preserved,” and proposing a “no net loss” policy. That initial policy was later weakened by Mr. Bush’s own

E.P.A., but environmentalists have credited him for elevating the issue. Fifteen years later, the second President Bush gave regulatory teeth to his father's proposal, implementing an E.P.A. rule requiring stronger wetlands protection that his father had once envisioned.

Trump's WOTUS: Clear as mud, scientists say Ariel Wittenberg, E&E News reporter Published: Monday, February 18, 2019

The Trump administration's stated goal for a rule defining which wetlands and waterways get Clean Water Act protection: Write a simple regulation that landowners can understand. "I believe that any property owner should be able to stand on his or her property and be able to tell whether or not they have a 'water of the U.S.' on their property without having to hire an outside consultant or attorney," acting EPA Administrator Andrew Wheeler told the Senate Environment and Public Works Committee in mid-January. But scientists who specialize in the study of wetlands and waterways say it's not that simple. "In a lot of cases, I still don't think landowners could stand there and figure it out on their own," said Siobhan Fennessy, a biology professor at Kenyon College. "You're still going to need the industry of consultants we have to come out and offer assistance. I don't think they're going away."

The new "waters of the U.S.," or WOTUS, proposal would erase federal protections for the more than 51 percent of wetlands and 18 percent of streams without relatively permanent surface water connections to nearby waterways, according to data from the U.S. Geological Survey. Wetlands — marshes, bogs, swamps and other soggy areas — are protected by law as stormwater buffers, pollution filters and wildlife habitat.

Jennifer Tank, a professor who teaches the ecology of streams and rivers at the University of Notre Dame, said the proposal would be the most significant rollback of Clean Water Act protections since the Reagan administration, but that doesn't make it easy to understand. "If you want to throw a ton of money at it, sure, but not just by looking at a stream," she said. The proposal would eliminate federal protections for "ephemeral" streams that are fed by rain or snowmelt and are otherwise dry. It would keep protections for intermittent streams fed by groundwater or snowpack that flow seasonally. "It's impossible to tell just from looking at a stream where it gets its water from," said Mark Rains, who runs the University of South Florida's Ecohydrology Research Group. The best way to determine whether a stream flows ephemerally or intermittently is to monitor its flow over a long time. "If we find one that flashes only in the hours or days after a rainfall, we call that ephemeral," Rains said. "If we find one that goes for weeks independent of rain, we call that intermittent." Such monitoring requires the installation of equipment in a streambed for weeks or months at a time. Using that approach, he said, different consultants or experts might still disagree on how many days a stream has to flow after rainfall to prove it is also being fed by groundwater. "This will shift where we fight the battles, but we'll still have the battles," he said.

The Trump administration's proposal might seem simpler to follow on wetlands because it wouldn't protect those that are dry most of the time and don't connect to larger downstream waters. But navigating the definition could be confusing when it comes to wetlands that do connect to streams that are dry during parts of the year. Knowing whether those wetlands are jurisdictional would first require determining whether they get wet when the stream flows and then figuring out whether the stream is ephemeral or intermittent. "I don't see how you can claim this rule clears up uncertainty the way it was written," Fennessy said.

The Trump administration's emphasis on clarity in its WOTUS proposal is rooted in criticisms the farming, housing and energy industries lobbed at the Obama administration's Clean Water Rule. Industry groups argued that the Obama rule expanded federal jurisdiction and was too complicated for average people to understand. By contrast, American Farm Bureau Federation President Zippy Duvall has praised the Trump administration's proposal for "giving us what we want." "Farmers should be able to sit in their pickup trucks and drive across their land and say, 'Yes, this is a water of the U.S.' and 'No, I know that's not,'" he said as the administration rolled out the rule proposal at EPA headquarters in December. But Notre Dame's Tank argued that the administration's attempt at simplicity is complicated by the "political goal" of restricting Clean Water Act protections. She noted that the Obama administration's Clean Water Rule would have protected any waterway if it had a streambed, banks or ordinary highwater mark. Those "landscape signatures," she said, indicate that a stream had a significant impact on downstream waters, regardless of how often it flowed or where its water originated. Tank acknowledged that most people might not initially know those "signatures," but if they learn, it's easier to figure out whether a stream has those features, which are visible to the naked eye, than whether it is fed by groundwater. "Understanding the water table is complex. Understanding the water cycle is complex. These physical marks, the signatures on the landscape, are a lot easier to understand," she said. "The problem is, you can't use those

physical visual features if you don't want to protect ephemeral streams, because many have them." Robert Brooks, a professor emeritus of geography and ecology at Pennsylvania State University, agreed. The Trump administration, he said, has used a "false premise" in saying the Clean Water Rule was complicated in order to justify rolling back protections. "There's a lot of misunderstanding and ignorance in the sense that people don't bother to inform themselves, and the industry groups that could help educate them fought for rollbacks instead," he said.

Brooks, Rains, Fennessy and Tank all sat on the EPA Science Advisory Board panel that reviewed a 300-page "connectivity report" published by the Obama administration describing how different wetlands and waterways affect larger waters downstream. Obama's EPA and Army Corps of Engineers based their Clean Water Rule on the scientific report, while the Trump administration has argued that the question of Clean Water Act jurisdiction is a legal — not scientific — one. How to draw the line?

In their proposal, President Trump's EPA and Army Corps ask for public comment on whether the final rule should only protect streams where it has been proved they are fed by groundwater. That would make it even more complicated for landowners themselves to know whether a stream on their property is regulated by the federal government, as the proposed WOTUS rule itself acknowledges. It says that identifying whether groundwater is the source of a stream could involve installing monitoring wells or gauges to identify the presence of water or estimate base flow, and that installing such equipment could be difficult, as groundwater tables in many areas rise and fall depending on the season, and some are under rocky substrates that would be difficult to access. "The agencies note that identifying whether the channel bed intersects with the groundwater table may be challenging to accomplish in the field, that gathering the relevant data could be time consuming, and could require new tools and training of field staff and the regulated public," the proposal says.

Tank said she fears that predicating Clean Water Act protections on proving that a stream is fed by groundwater would, in effect, deregulate intermittent streams because landowners wouldn't want to spend the time or money to drill down to the groundwater table. "It would be adding an unnecessary burden of proof when we have easier ways to show it," she said. Drilling to find a groundwater connection also isn't as simple as it sounds. In the Sacramento Valley, for example, water tables are hundreds of feet below the surface, while layers of semipermeable soil near the surface can trap water. "You could find three layers of aquifers in one place," the University of South Florida's Rains said. "Is it groundwater even if it's not part of the water table? I would say it is. But someone else could say something differently." Another complication is the role soil plays in streams that flow only after rain. Soil beneath many headwater ephemeral streams will absorb and capture water. Then, the next time it rains, the soil will release water. What flows downstream is a "cocktail" of the newly released water, which could be a few years old, and the ongoing rain. "I'm a geologist, so I say anything underground is groundwater, and this counts," Rains said. "Someone else might say it's not part of an aquifer, so it doesn't." Twitter: @arielwittenberg Email: awittenberg@eenews.net

Army Corps to slash state permit review times Ariel Wittenberg, E&E News reporter Published: Wednesday, February 6, 2019

The Trump administration has taken the first step to limit states' ability to block permits under the Clean Water Act. In a December memo, Army Corps of Engineers chief R.D. James directed the agency to write new guidance limiting the time states have to review permits for projects that would dredge or fill in wetlands and streams. Section 401 of the Clean Water Act gives states up to a year to review such projects unless the federal permitting agency sets a different timeline. If states don't approve or deny a project within that timeline, they waive their authority. James writes in the memo that while Army Corps regulations already require states to make their decisions within 60 days of receiving an application, "it has been standard practice" for Army Corps districts to give states an entire year to review permits. "Such an approach is inconsistent with our existing Army regulations," James writes in the memo, which was first reported by Politico. Army Corps spokesman Doug Garman confirmed that the Army Corps has already written the guidance in question and that James' office is currently reviewing it. James' memo directs the Army Corps to write guidance solidifying the 60-day timeline and emphasizing that the clock begins when a state receives an application, not when a state decides an application is complete. While the Clean Water Act itself is vague about when the clock starts, states and agencies have both previously interpreted it to mean the countdown begins once a state deems a permit is complete.

Critics, including the pipeline and mining industries, have argued that schedule allows states to run out the clock to get more time for review, telling project developers at the last minute that their applications are incomplete and will be denied if states don't receive more information. That would no longer be the case under the Army Corps guidance James wants written. "District Engineers are reminded that under Section 401, the time period for a state's review begins upon receipt

of the request by the applicant," the memo says. While James said states should be allowed to request an extension, he emphasized it is up to the heads of Army Corps districts to decide if an extension is warranted and that "a certifying agency's request for additional time that is based on workload or resource issues or that they do not have enough information to proceed would not be valid reasons for consideration." The memo is the first concrete example of an expected Trump administration push across agencies to limit state's Clean Water Act authority under Section 401. The administration is considering executive action to boost proliferation of pipelines across the country, which could include reforming states' authority (Greenwire, Jan. 24). The Trump administration has already received strong pushback from state groups. Last week, the Western Governors' Association wrote to Trump himself asking him to tell federal agencies "to reject any changes to agency rules, guidance or policy that may diminish, impair or subordinate states' well-established sovereign and statutory authorities to protect water quality within their boundaries." The Army Corps is the federal permitting agency for projects that dredge or fill in wetlands and streams. States also have the authority to block water pollution permits issued by EPA and pipeline approvals issued by the Federal Energy Regulatory Commission. EPA also has been looking into the issue for some time. Water chief David Ross told the Environmental Council of the States' annual meeting this fall that the agency is considering changing policies for how much time states have to make their certification decisions. Emails released under Freedom of Information Act litigation by the Sierra Club also show the agency was keeping close tabs on Washington state's review of a coal export terminal from Millennium Bulk Terminals. Days after the state's Shoreline Hearings Board upheld a 2017 denial of shoreline permits to the project last April, EPA Office of Water Deputy Assistant Administrator Lee Forsgren sent an email about the project to Ross and then-Deputy EPA Administrator Andrew Wheeler. Most of the email is redacted, but the subject says the email is about "options on the Washington Water Quality Standards."

<https://www.ehn.org/> Oct 22, 2018 Dieldrin dilemma: How dated science and fish-eating advisories may be putting brains at risk - A long-banned pesticide lingers in fish across the US. Its toxic effects on the brain have never been incorporated into fish consumption advisories. Sam Totoni

Six years ago, I worked at the Illinois Natural History Survey testing roadkill otter carcasses for contaminants that build up in the bodies of animals that eat fish. One of the contaminants we found was dieldrin – a banned pesticide formerly used on corn crops. Since otters and people share a habit of eating self-caught fish, I wondered about the science used to protect people from the potential dangers of dieldrin. I collected pieces of information from the Food and Drug Administration, the Environmental Protection Agency, state agencies, and scientific studies. It became apparent that some states, including Illinois, still rely on an antiquated FDA standard for dieldrin that allows for people to be exposed to hundreds of times more dieldrin in fish than the EPA recommends. Other state agencies rely on EPA science that's half a century old – from a time when scientists were still in the dark about all of dieldrin's health effects. In the decades since then, studies uncovered dieldrin's toxicity to the brain, including links between dieldrin and Parkinson's Disease. But just how much dieldrin may be "too much" for the brain remained unknown. That changed this year when a study used cell cultures from newborn rats to determine the amount of dieldrin that permanently changed the developing brain networks. This new information may be the key to finally incorporating dieldrin's effects on the brain into fish consumption advice. But will state agencies be able to use it?

In the 1950s, corn farmers, mostly those in the Midwest, began treating crops with the pesticide aldrin, which morphs into dieldrin in the environment. At the same time, people started using dieldrin to control termites and Japanese Beetles. In 1962, Silent Spring highlighted the use of dieldrin in Illinois. Environmental and potential human health concerns including cancer led the EPA to limit the use of aldrin and dieldrin in 1974; all uses were banned in 1987. Since then, dieldrin concentrations have been steadily decreasing in the bodies of fish in the U.S. But it still remains. During 2008-2009, the EPA analyzed concentrations of contaminants in fish from rivers and streams of the U.S. Dieldrin was detected in 71 percent of samples, each of which consisted of five fish mixed together from the same location. Dieldrin is "water-phobic," attracted to fat. It's bound to soil that's washed into aquatic environments. Small organisms ingest the contaminated sediment. Each time a fish eats a contaminated organism, most of the dieldrin transfers to the fish's fat. The same thing happens when a predator, whether otter or human, eats a dieldrin-contaminated fish. It takes the human body one year to excrete just half the dieldrin absorbed from a meal. Dieldrin has been detected in the blood of people who eat self-caught fish. Studies have also confirmed dieldrin in fat-rich sites such as human brains and breast milk, as well as placentas, umbilical cords, and in the blood of infants. When fish contain dieldrin, it's within a cocktail of contaminants. Ideally, protection from eating too much of one contaminant can protect fish consumers from eating too much of all the other contaminants. "We live in a world where contaminants are everywhere, even in the Arctic. They even fall in the rain," Joanna Burger, professor at Rutgers University who has studied fish consumption around the globe, told EHN. "So fish everywhere have a mixture of contaminants." Whether a certain level of a contaminant will be harmful depends in part on how much fish a person eats. This means exposure to dieldrin in fish is not only relevant to people who eat fish

from sites where dieldrin was intensively applied in the Midwest. It's also relevant in places where contamination may be lower, but fish consumption is high, such as tribal land. According to environmental regulators in both Guam & the U.S., the U.S. Territory of Guam is an example where sites with elevated levels of dieldrin contamination are also sites where people consume self-caught fish.

A lack of health-based standards for dieldrin begins in the soil that carries dieldrin to the fish in the first place. Earlier this year, a study reported that as of 2014, the amount of dieldrin in soil considered to be "too much" in Illinois was about 10 billion times higher than what was considered "too much" in Oregon. This type of standard has influenced decisions about whether to clean up dieldrin-contaminated soil. In Illinois, the limit for dieldrin in soil was not based on science about potential health effects. Similarly, in some states, the use of an FDA standard has left the health effects of dieldrin out of decisions about fish consumption advisories. When agencies use the FDA Action Level as a screening value, 300 parts per billion (ppb) of dieldrin is considered "too much" dieldrin in fish—the trigger for determining whether people should be given advice to prevent exposure.

It has been clear for decades that issuing advice based on the FDA Action Level for dieldrin is not protective of people's health. The origin of the FDA Action Level is unknown, likely pre-dating the EPA itself. In 1993, a guidance document for developing fish consumption advice in the Great Lakes stated, "...now there is general agreement that the current FDA tolerances for market fish are not adequately protective of public health, particularly those who consume sport fish." This statement was echoed in US EPA guidance in 2000. During the EPA's national 2008-2009 fish tissue survey, the five states with highest concentrations of dieldrin were Ohio, Illinois, Indiana, Iowa, and Missouri.

Missouri and Indiana relied on the FDA Action Level for dieldrin until they stopped regularly testing fish for dieldrin. Illinois still uses the FDA Action Level. Last year the Illinois EPA found a fish from Lake Michigan to have 74 parts per billion of dieldrin, according to a Freedom of Information Act request obtained by EHN. Since it was well below the 300 parts per billion screening level, no action was required. Inquiries to all three states about risk assessment for dieldrin garnered mixed responses. In Missouri, risk assessment for dieldrin will be reevaluated next year, Jeff Wenzel, Bureau Chief of Environmental Epidemiology in Missouri's Department of Health and Senior Services Bureau, told EHN.

In Indiana, there is no plan to reassess dieldrin, Ali Meils, environmental manager with the Indiana Department of Environmental Management, told EHN. A statement provided to EHN by the Illinois Department of Public Health indicated that a new, health-based screening value for dieldrin has not been discussed or developed. A spokesperson added, "our challenges lie in developing laboratory capacity and acquiring equipment to test for new contaminants." Among less dieldrin-contaminated states, Pennsylvania and New York still use the FDA Action Level for dieldrin, and Michigan used it until monitoring fish for dieldrin ceased. In all of these states, it's unclear whether advice to protect people from the health effects of mercury or PCBs has prevented exposure to too much dieldrin. Especially since the FDA Action Level allows for 250-1,000 times more dieldrin in fish than the EPA recommends.

The EPA began providing guidance on how to screen fish based on the cancer potency of dieldrin in 1994. As of 2000, the agency recommends a cancer-based screening value of 1.5 ppb dieldrin in fish tissue for people who eat four meals of fish in a month (an even lower screening value is recommended for people who eat more fish). However, since contaminants in fish tissue are not covered under the Clean Water Act, state agencies can decide whether or not to take the EPA's suggestion. "States, territories, or tribes are not required to issue fish advisories and can use toxicity information from sources other than EPA," Karl Markiewicz, Senior Toxicologist with the Centers for Disease Control and Prevention, told EHN. Some agencies have taken the EPA's recommendation. For example, California, Delaware, Guam, Kansas, Florida, New Jersey, and Texas screen for fish based on the effect of cancer. With the exception of Florida, they all have fish consumption advisories for dieldrin in at least one body of water.

Two reviews about dieldrin and cancer that were published in 2014 came to different conclusions. One proposed that the estimated cancer potency of dieldrin be lowered; the suggested changes would result in an approximate doubling of the screening value in fish to about 3.5 ppb. The other review concluded the estimate for dieldrin's cancer potency should remain unchanged, and pointed to a need for more science on dieldrin and breast cancer. Some scientists have pointed out that the benefits of eating fish likely outweigh any corresponding increase in cancer risk, and that cancer risks may be over-estimated. In states where cancer risk is considered an inappropriate basis for fish consumption advice, they instead focus on dieldrin's ability to cause liver damage. This typically results in a screening value between 100 and 200 ppb. In 1988, liver damage was identified by the EPA as the worst non-cancer health effect of dieldrin, based on research conducted with rats in 1969.

In the decades since then, brain-altering effects of dieldrin have become apparent. Studies suggest dieldrin makes the brain more vulnerable to Parkinson's Disease, especially in people with certain types of genes. One study found that people who were exposed to dieldrin both at work and at home were 6 times more likely to develop Parkinson's Disease compared to people who did not have a history of exposure. Elevated concentrations of dieldrin have been identified in the brains and blood of Parkinson's Disease patients.

Exposure to dieldrin in the womb or via breastmilk may also change the brain's vulnerability to Parkinson's Disease. A study found that when female mice were exposed to dieldrin, their pups had lasting brain alterations that rendered them more vulnerable to Parkinson's Disease later in life – even when there was no dieldrin in their bodies as adults.

However, until this year, a specific concentration of dieldrin that may be "too much" for a brain was unknown. In January, a study published in *Toxicology and Applied Pharmacology* identified a "point of no return" when dieldrin was added to developing brain cell cultures from newborn rats. As the neurons developed networks and fired electrical bursts of activity, the researchers applied different concentrations of dieldrin to find the amount of dieldrin it took to permanently alter the way that brain networks developed.

To understand whether there is a standard method for using results from studies on animal cells to extrapolate to risk to human health, I spoke with Ivan Rusyn, professor of toxicology at Texas A&M who develops tools to study the health effects of chemicals. According to Dr. Rusyn, results from studies on cells are currently not used at all to calculate the risk posed by a chemical like dieldrin. When I asked how long it may be until a method for this will be widely used, he said, "probably not in the next 5 to 10 years." However, the same regulatory freedom that allows state agencies to use no science at all in determining how to protect fish consumers also allows them to use the best available science, such as the tools that scientists are actively developing for using cellular data to estimate the risk of chemicals.

One potential obstacle in applying these tools to dieldrin is the dilemma that risk assessors typically face in deciding when new science should change environmental standards. James Fabisiak, associate professor of environmental health at the University of Pittsburgh and director of the Center for Healthy Environments and Communities told EHN, "On one hand, it's impractical to reset regulatory thresholds each time a new paper is published. On the other, the wheels of policy-making move much slower than scientific technological advancement." When asked about this dilemma with regards to dieldrin, Fabisiak continued, "Dieldrin seems like an excellent case-study with which to incorporate this new paradigm. The data seem compelling, point to a serious health effect previously ignored, and would receive little resistance from industry considering the use of dieldrin is already banned." If attempts to use these new techniques are successful, state agencies can assess whether current fish consumption advice is adequately protective of developing brains. This is relevant to parents and women who may become pregnant, including Native Americans, a group identified with a high prevalence of Parkinson's Disease. Even if attempts to use these new techniques fail, the health of people who eat self-caught fish can still benefit from agencies re-evaluating their environmental standards for dieldrin. Zijian Li, author of the recent study on screening values for dieldrin in soil, engineer associate at Parsons Corporation, commented on the implications. "When we fail to develop environmental standards from a human health perspective, we endanger ourselves, we endanger the next generation." Sam Tottoni is a graduate student at the University of Pittsburgh Graduate School of Public Health.

Lake Michigan

U.S. Steel to pay nearly \$900,000 to settle lawsuit over chromium spill into Lake Michigan -Michael Hawthorne Contact Reporter Chicago Tribune

U.S. Steel agreed Monday to pay nearly \$900,000 to settle a complaint filed after one of the company's plants spilled toxic chromium into a Lake Michigan tributary last year. The Pittsburgh-based company also will begin testing daily for the most toxic form of chromium in water near its Midwest Plant in northwest Indiana, embark on a preventive maintenance program and upgrade other types of pollution monitoring in response to legal action taken by the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management. Filed in U.S. District Court in Hammond, the proposed settlement comes almost a year after chromium-contaminated wastewater spilled into a ditch that drains into Lake Michigan next to the steel mill. Operators of the water supply for the nearby town of Ogden Dunes responded by temporarily shutting off its Lake Michigan intake, Chicago conducted emergency testing of its own water supply and the National Park Service closed four beaches at the Indiana Dunes National Lakeshore.

the proposed settlement comes almost a year after chromium-contaminated wastewater spilled into a ditch that drains into Lake Michigan next to the steel mill. The Midwest Plant, part of an industrial complex that divides the national lakeshore

in Portage, coats steel forged at the nearby Gary Works with chromium and other rust-inhibiting materials. U.S. Steel already has overhauled the faulty system that triggered the April spill, according to court documents. Lawyers for the two government agencies began negotiating privately with U.S. Steel after the Surfrider Foundation, a nonprofit group representing Great Lakes surfers, enlisted the Abrams Environmental Law Clinic at the University of Chicago to research pollution violations at U.S. Steel and other factories on the southern shore of Lake Michigan.

A review of state records by law students at the clinic revealed that the Midwest Plant violated chromium limits at least four times since 2013. Two other spills were reported to Indiana officials last year, including one in October that the company asked Indiana regulators to keep secret. Two months later, the state agency posted an inspection report online that showed U.S. Steel had failed to test for hexavalent chromium after the October spill, despite blue liquid “with visible solids” pouring out of a sewer pipe into the Lake Michigan tributary. Mark Templeton, the law clinic’s director, said he was still reviewing the deal brokered by government lawyers and U.S. Steel. “We’re encouraged regulators are finally doing something,” Templeton said in an email. The steelmaker pledged Monday to follow through on plans outlined in the legal settlement. “U.S. Steel continually seeks opportunities for improvement in its environmental compliance program, and will apply lessons learned from this process to future operations company-wide,” a spokeswoman said in statement. “I am pleased that through the coordinated effort of federal and state agencies, and with the cooperation of U.S. Steel, this settlement will help protect Lake Michigan and Indiana waterways,” Susan Bodine, assistant administrator of the EPA’s Office of Enforcement and Compliance Assurance, said in a separate statement. Interested parties will get 30 days to comment on the proposed settlement before a federal judge makes it final. If nothing changes, the company will pay a fine of \$300,621 each to the federal and state governments, another \$253,068 for environmental damages and \$27,512 to reimburse a government team that monitored water quality after the April 2017 spill.

A review of state records by law students at the clinic revealed that the Midwest Plant violated chromium limits at least four times since 2013. Two other spills were reported to Indiana officials last year, including one in October that the company asked Indiana regulators to keep secret. Two months later, the state agency posted an inspection report online that showed U.S. Steel had failed to test for hexavalent chromium after the October spill, despite blue liquid “with visible solids” pouring out of a sewer pipe into the Lake Michigan tributary. mhawthorne@chicagotribune.com

Chicago, surfers group challenge federal settlement on Lake Michigan chromium spills- Michael Hawthorne Contact Reporter Chicago Tribune

Chicago and a band of Great Lakes surfers are challenging a federal legal settlement with U.S. Steel, accusing the Trump administration of failing to punish the steelmaker harshly enough for repeated spills of toxic chromium into Lake Michigan. In a letter sent Friday and made public Monday, the Chicago Law Department and the nonprofit Surfrider Foundation vowed to oppose the proposed deal in federal court unless the U.S. Environmental Protection Agency and the Department of Justice make significant changes. The letter described the nearly \$900,000 in proposed fines and other penalties as woefully insufficient, condemned a lack of environmental improvement projects for surrounding communities and demanded an independent study of potential long-term damage caused by chromium discharges from U.S. Steel’s Midwest Plant in Portage, Ind. U.S. Steel also should be required to create an automated early warning system to alert authorities about future spills, the letter concluded. “State and federal regulators have failed to provide adequate oversight or take necessary enforcement action,” Edward Siskel, the city’s corporation counsel, and Michelle Kremer, Surfrider’s chief executive, wrote in the three-page letter. The EPA and Justice Department began negotiating privately with U.S. Steel last year after Surfrider enlisted the Abrams Environmental Law Clinic at the University of Chicago to research pollution violations at factories on the southern shore of Lake Michigan. Law students at the clinic unearthed records that revealed the Midwest Plant had violated chromium limits in its federal water pollution permit at least four times since 2013, including during an April 2017 spill involving 298 pounds of a highly toxic form of the metal known as hexavalent chromium. Total chromium discharges from the plant are restricted to 30 pounds a day, and the amount of hexavalent chromium allowed is just 0.51 pounds a day. The Midwest Plant, part of an industrial complex that divides the Indiana Dunes National Lakeshore, coats steel forged at the nearby Gary Works with chromium and other rust-inhibiting materials. Pittsburgh-based U.S. Steel already has overhauled the faulty system that triggered the spill last April, according to court documents. As part of its proposed settlement with the government, U.S. Steel also agreed to test daily for hexavalent chromium, embark on a preventive maintenance program and upgrade other types of pollution monitoring. In November, Mayor Rahm Emanuel threatened to sue U.S. Steel over the plant’s chronic pollution problems, citing testing after the April 2017 spill that detected a plume of hexavalent chromium drifting toward the city’s drinking water intake off 68th Street. The EPA later rejected Emanuel’s request for the city to be involved in negotiations that led to the proposed settlement. When the deal was announced in early April, the EPA and U.S. Steel said it would ensure the lake is protected from further harm. mhawthorne@chicagotribune.com

Lake Michigan is warming. A new report says that could mean trouble for game fish. Tony Briscoe Contact Reporter Chicago Tribune

A warmer and wetter climate in the Midwest could lead to the displacement of some cold water fish species in southern Lake Michigan and trigger mass die-offs in smaller inland lakes, according to a report published this week by Purdue University. As the atmosphere warms due to the proliferation of greenhouse gases, so too are the Great Lakes, warns a Purdue University-led report on the impacts of climate change in Indiana. Summer surface water temperature in Lake Michigan has warmed about 3 degrees since 1980, and is projected to accelerate, rising at least 1 degree a decade, experts say. A hotter climate could become a problem for some game fish, like trout and salmon, that depend on cold, oxygen-rich waters. "I think it might be a surprise to a lot of people that Lake Michigan is warming," said Tomas Hook, a professor of fisheries and aquatic sciences at Purdue and director of the Illinois-Indiana Sea Grant. The warming is expected to reduce the amount of time cold water fish spend in the southern basin of Lake Michigan, where the chance of catching these species is already limited because it's shallower and more tepid than the rest of the lake. Now, much of the lake is so deep and cold in open water that most fish can't survive there, but warming will likely open up more habitat for the majority of fish, Hook said. However, whether they will be able to find sufficient food in those new waters is unclear. "With water heating up, species, particularly ones who prefer cold or cool water, their body temperature is dependent on the temperature of the water," said Karen Murchie, a research biologist with Chicago's Shedd Aquarium. "They can behaviorally select where they want to live, but they could potentially be squeezed out of where they want to live and where they want to go. This resonates, not only with Indiana waters, but all of the Great Lakes." "Temperature is a master factor when it comes to fish," Murchie said. "It's so important and that's why it's such a concern." A toll on fishing Milder water temperatures are expected to expand the range of warm water fish like bass, which are confined to southern Lake Michigan. "Bass fishing should be better," said Paul Labovitz, superintendent of the Indiana Dunes National Lakeshore. "But if I'm a salmon fisherman, I'm going to be really disappointed when the lake warms up. Those are real impacts that people see right now. This isn't a 50- or 100-year thing. This is happening right now."

To withstand warmer temperatures, cold water fish, like chinook salmon, will expend more energy and require more food. In Lake Michigan, invasive mussel species have decimated the abundance of plankton, small organisms that serve as base of the food chain and the staple of many small fish diets. In doing so, the mussels cleared up the lake, but they've also contributed to the decline of the chinook salmon's primary prey, a small fish known as the alewife, whose population has crashed in the past several decades. The breakdown in the food chain and the warming temperatures have been on the minds of fishermen, including Chad Kirkman, 32, of Chesterton. While Kirkman said he's not too concerned with the overall makeup of fish in the southern end of the lake, nodding to the healthy numbers of carp, channel catfish and bass, he has noticed the toll that warmer waters can take on steelhead when they return to spawn in Indiana tributaries in June. "If you hook one of them out there, you pretty much have to keep them, because the water is like 60-something degrees and they can't take it," Kirkman said. "It's like a person trying to run a marathon when it's 120 outside — it'll kill you. A lot of times after you take them off the hook, there's no point in putting them back in the water because they'll just flounder around and die." If summer heat continues to spill into fall, anglers like Carl Beutler, of Westfield, Ind., also wonder about the impact of long-term temperature shifts. On a recent weekday, after winds churned up colder waters in parts of Lake Michigan, Beutler and his son Joseph Oakman were among several fishermen who cast their lines along the lakefront pier in Portage, Ind., hoping for king salmon, expected to be in the area for spawning, to bite. But like most of the others, they left empty-handed. "It's something everybody is concerned with," Beutler said about climate change. "Short-term, it will just reposition where the fish are at. Long-term, repercussions could be the destruction of spawning habitat, because they need a lower temperature to spawn. If the water temperatures increase, they are going to deteriorate before they even hatch." More dire inland The situation may be even more dire for cold water species inland, however. In addition to warmer waters, more frequent heavy precipitation could increase agricultural runoff and induce more algal blooms. When that algae dies near the lake bottom, it becomes food for bacteria, which deplete oxygen levels in deep, cold waters. This places cold water fish in a vise between warm surface water they can't tolerate and deeper cool water with little oxygen. Perhaps no other species underscores the severity of the issue than the cisco, a cold water whitefish that was once found in about 50 lakes in Indiana, but now remains in only six, Hook said. Researchers say more algae blooms are likely for both ecosystems, although inland lakes are most at risk. There, cold water fish have to occupy a shrinking area as water warms near the surface and oxygen levels drop near the lake bottom. "They can't really migrate much but up and down in the water column," Hook said. "I would expect to see more die-offs in those types of systems. A lot of aquatic species don't have the flexibility to migrate into new systems like terrestrial organisms do." The lack of oxygen typically persists until fall, when warm water cools and can mix with deeper water. With springlike temperatures arriving earlier and summer temperatures lingering into fall, the Purdue report warns that warming climate could prolong the period when there is less oxygen in the deeper water. Temperatures in Illinois and Indiana have risen more than 1 degree over the past century, but scientists expect the warming to accelerate. Summer temperatures in Illinois could resemble

Texas or Oklahoma by the end of the century, according to the U.S. Environmental Protection Agency’s archives. The statewide average temperature for Illinois this summer was 75 degrees, 1.4 degrees above normal. This summer, Lake Michigan was measured at about 5 degrees above its long-term season average. At a recent meeting in Portage to discuss the report, Labovitz, the national lakeshore superintendent, remarked about the changes he’s noticed. The Indiana Department of Natural Resources has received reports of armadillo sightings. Beach season has unofficially extended into October. And, he is trying his luck growing sweet potatoes, a crop harvested in Southern states and California. Hook, the Sea Grant director, said state resource managers have been accounting for short-term considerations, like invasive species or pollution, but the new study — part of a series of reports detailing the far-reaching impacts of climate change in Indiana — recommends they account for climate change by incorporating strategies such as pumping oxygen into the bottom of some small lakes. Because these are such complex systems, it’s difficult for even experts to predict what the end result will be, said Jeffrey Dukes, director of Purdue’s Climate Change Research Center. “The bottom line is that these sort of changes are already happening,” Dukes said. “We already have things that are stressing aquatic ecosystems, and this is only going to increase the stress for many species. We don’t know how many are going to deal with the changing climate on top of everything else. It’s going to cause problems for cold water species, but it’s going to mix things up for all species.”.

Fish Kills:

REPORT OF POLLUTION-CAUSED FISH KILLS
ILLINOIS DEPT OF NATURAL RESOURCES
DIVISION OF FISHERIES
2018

<u>Month</u>	<u>Day</u>	<u>Water Area</u>	<u>County</u>	<u>Cause</u>	<u>Fish killed</u>	<u>Fish value</u>	<u>Investigation cost</u>	<u>Total cost</u>	<u>miles</u>
May	18-19	Coon Creek	Iroquois	UNK	152,103	\$61,294.87	\$1902.48	\$63,827.35	12.26
July	25	Beaver Creek	Iroquois		19,379	\$37,828.49	\$844.49	\$38,672.98	9.93
Sept	4	Indian Creek	Livingston		19,134	\$7067.29	\$518.46	\$7585.75	3.43
Sept	12	Little Vermilion River	LaSalle	IND	21,298	\$40,713.38	\$1239.57	\$41,952.95	7

NUMBER OF FISH KILL INVESTIGATIONS:	4	INVESTIGATION COST:	\$4,505.00
NUMBER OF FISH KILLED:	211,914	TOTAL VALUE OF FISH:	\$147,534.03
TOTAL MILES AFFECTED:	32.62	TOTAL COST:	\$152,039.03