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Wetlands and Waterways in Wisconsin: Navigating Changes to the Federal Waters of the United States (WOTUS) Rule

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Contributors

Joanne Kline
Tom Bernthal
Michael Cain
Ashley Gries, The Nature Conservancy
Ron Grasshoff
Loretha Jack
Nancy Larson
Nicholas Miller, The Nature Conservancy
Sarah Peterson
John Wagner, The Nature Conservancy

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About this Work:

Opportunities Now is an issue paper series published by Wisconsin's Green Fire that summarizes the science and background of key conservation and environmental issues and makes policy recommendations that support pro-conservation outcomes. Each of the papers in our Opportunities Now series is the product of an analysis of current literature, interviews with agency staff and experts, and the consensus of our subject matter teams. Policy makers, conservation organizations, and concerned citizens are all welcome to use and distribute Opportunities Now papers without restrictions.

Direct enquiries on this paper to WGF Director Fred Clark, at fclark@wigreenfire.org

Cover photo: Jyme Lake, by Joanne Kline

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Summary

Wetlands are critical ecosystems that help reduce flood severity, filter polluted runoff before it reaches open water, and provide waterfowl and wildlife with food and shelter.

In 2020, rollbacks in protection of waterways and wetlands under the federal Clean Water Act left millions of wetland acres in Wisconsin vulnerable to development. Although Wisconsin law protects many waterways and wetlands that are no longer covered by federal protections, continued weakening of state protections could lead to additional wetland loss.

Wisconsin's Green Fire and the Wisconsin Chapter of The Nature Conservancy conducted an assessment in which we conclude that as much as 55% of Wisconsin's remaining wetland acreage has lost federal protection under rule changes implemented in 2020. In northern Wisconsin in particular, a high percentage of wetlands that reduce flooding risks are no longer protected under the Clean Water Act.

This paper explains the history of the Clean Water Act and the frequent changes to the definition of "Waters of the United States", which is critical to interpreting and implementing meaningful protections under the law. We examine the intersection and overlap between federal and state water protection authority. And we explain the increasingly important functions, environmental benefits, and ecosystem services provided by wetlands, especially in light of the impacts being experienced as a result of climate change. We conclude with detailed recommendations for policy and actions at the federal and state level that will help assure consistent and effective protections for wetlands and the many invaluable benefits they provide.

Background

With passage of the Clean Water Act (CWA) of 1972, agencies of the federal government began working in earnest to curtail water pollution. A fire on the Cuyahoga River in 1969 (the last of at least 13 fires recorded on the river between 1868 and 1969) rang a public alarm about the consequences of uncontrolled pollution of our nation's waters and galvanized public and political resolve.

A Fire on the Cuyahoga River

The Clean Water Act is landmark legislation that reversed decades of degradation of the nation's waterways and put them on a trajectory towards improvement. But the question of exactly which waters are covered by the CWA has generated highly conflicting opinions since the law was first passed.

The term Waters of the United States (WOTUS) is used in the Clean Water Act to describe the scope of federal jurisdiction over waters. The CWA itself however does not define precisely which waters are subject to federal regulation. Consequently, the federal agencies that administer the law, the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE), have interpreted its scope via rulemaking from its inception.

The earliest and narrowest interpretation considered the scope of the CWA to be traditionally navigable waters, such as large bodies of water and their tributaries. In fact, the definition of federal navigable waters has its origin in Section 10 of the Rivers and Harbors Act of 1899, a law to facilitate navigation. The navigable waters approach is based on earlier laws that focused on the role of government to protect commerce. Over time, expanding science and growing understanding of watershed concepts resulted in federal regulation extending to more wetlands and smaller streams, in part to help achieve the CWA objective "to restore and maintain the chemical, physical and biological integrity of the Nation's waters."[1]

States and Tribes and the Clean Water Act

Activities that impact shorelines, wetlands, aquatic habitat, or water quality, including dredging, earthwork, placement of fill material, or forms of non-point source pollution, are all regulated under different sections of the law. For some sections of the law, authority is delegated to states and Tribes to manage regulatory programs enabled by state statute and tribal authority. The State of Wisconsin carries out programs to limit point and nonpoint sources of pollution. Several tribal governments in Wisconsin also carry out delegated programs. Federal funding partially supports CWA delegated state and tribal programs.

Section 404 of the CWA includes the permit program for dredging and placement of fill material in waters and wetlands. In Wisconsin, the USACE is the lead agency for implementing the Section 404 program, while the State of Wisconsin must certify that decisions meet water quality standards. Wisconsin also regulates dredging, filling, and alterations of waterways and wetlands under state law.

Changing Definitions of Waters of the United States

Since the passage of the Clean Water Act, the definition of Waters of the United States has been contentious. Litigation has resulted in numerous court decisions, including key decisions by the U.S. Supreme Court defining federal jurisdiction over waters.

In 2015, the Obama Administration published the Clean Water Rule that was based on an extensive scientific report: Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence. The report summarized the "current understanding about the connectivity and mechanisms by which streams and wetlands affect the physical, chemical, and biological integrity of downstream waters."[2] The goal of the report was to finally provide clarity on the definition of WOTUS and standardize the definition of waterbodies left in legal gray areas under the Clean Water Act such as small headwaters, isolated wetlands, ephemeral, and intermittent streams.[3] Additionally, since water bodies do not abide by political boundaries, the report highlighted the importance of transboundary pollution issues.

Thirteen states mounted a legal challenge to block the 2015 Clean Water Rule. In 2017, the Trump Administration announced plans to repeal the Rule. In 2020, the Clean Water Rule was replaced by the Navigable Waters Protection Rule (NWPR) which codified a much narrower definition of WOTUS. Also referred to as the "2020 WOTUS Rule", the 2020 NWPR does not rely on the hydrological science detailed in the 2015 connectivity report and asserts that states are better equipped to regulate local resources than the federal government.[3]

According to information prepared by the USEPA and USACE, the NWPR would leave at least 18 percent of streams and 51 percent of wetlands nationwide without protections under the CWA. Although the new WOTUS definition still includes lakes, streams, some tributaries, and the wetlands adjacent to those waterbodies, **it excludes vital ephemeral streams and isolated wetlands and ignores the important groundwater connectivity that these systems provide**. Ephemeral streams and wetlands benefit people and wildlife by providing habitat, reducing run-off, erosion, and flooding, as well as filtering pollution.

The 2020 NWPR removes federal protections for ephemeral streams, some intermittent streams, isolated wetlands, and floodplain wetlands that are not inundated in a typical year by their associated stream or river. It also removes protections for groundwater fed wetlands that supply flow to other waterbodies. Ephemeral streams do not flow all year—many waterways in the western U.S. are considered ephemeral. Wisconsin also has many miles of ephemeral streams that feed tributaries downstream. Isolated wetlands that are not adjacent to navigable waters are found throughout watersheds—holding and releasing water, improving watershed health and providing important habitat. *The 2020 NWPR rule leaves many wetlands and streams in headwaters areas unprotected under the CWA.*

One of the arguments for defining WOTUS in legislation was to avoid confusion and inefficiencies in the regulatory programs resulting from frequent changes to the definition. New definitions of Waters of the United States were proposed in the Clean Water Restoration Act (CWRA), introduced in Congress in 2006 and 2009. Although they were never voted on, these bills were supported by a majority of the Wisconsin congressional delegation and sponsored by Wisconsin's Senator Russ Feingold.

Federal Implications for Wisconsin Wetlands and Waterways

Despite Wisconsin's state law which provides important protections for federal and non-federal wetlands, the weakening of the WOTUS standard under the 2020 NWPR rule has created regulatory uncertainty. When a person or organization seeks a permit to impact a waterway or wetland, the USACE must use the complex WOTUS criteria to determine whether the impact area falls under federal jurisdiction (a JD or jurisdictional determination). JDs are critical because they set the federal regulatory process in motion.

Federal protection of waters under the Clean Water Act are important for water quality throughout the U.S. and within Wisconsin. Waters and wildlife are not confined by state borders and impacts to waters in other parts of the country are often felt in Wisconsin. Additional losses to wetlands in neighboring states could diminish habitat for game and non-game waterfowl that migrate to Wisconsin and exacerbate severe flooding, potentially putting a strain on the pool of national emergency relief dollars available to Wisconsin. Even with Wisconsin's relatively robust state wetlands law and regulation, federal protections based on watershed science provide an important guarantee for Wisconsin's resources against possible diminished capacities at the state level.

State Wetland Protections

Wisconsin's Public Trust Doctrine is an important foundation for state laws that protect wetlands and regulate wetland-related activities. The Doctrine recognizes the public nature of waters and the public's right to travel, fish, hunt, and recreate on these waters.[5]

In 1991, Wisconsin adopted the nation's first set of water quality standards for wetlands, codified in NR 103, Wisconsin Administrative Code. Modeled after the CWA 404(b)(1) guidelines, NR 103 required a detailed review of prospective wetland projects to determine if a project is wetland dependent, whether practicable alternatives exist for the project, and whether the project will cause "significant adverse impacts" to the functional values of wetlands. The adoption of these rules had a drastic impact on the loss of wetlands in the state from regulated projects, dropping from 1,400 acres to 100 acres per year.[6]

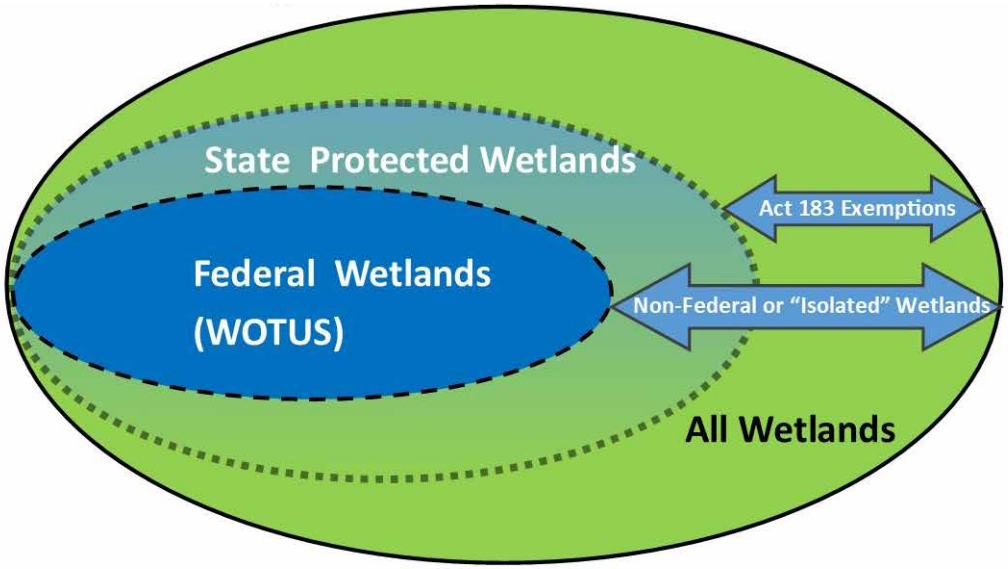
The U.S. Supreme Court decision in the case *Solid Waste Agency of Northern Cook County (SWANCC) v. Army Corps of Engineers* set a critical precedent that triggered additional legislative efforts in Wisconsin to protect isolated wetlands. The SWANCC decision left isolated wetlands, such as depressional wetlands, unprotected by the

CWA. At the time, it was estimated that nearly one million acres of wetlands would be left without protection in Wisconsin as a result of the SWANCC decision. Following SWANCC, both the public and legislators raised enough concern to spur legislative action. In 2001 the Wisconsin legislature unanimously passed bi-partisan legislation (2001 Act 6, 281.36 Wis. Stats.) establishing state regulation over all wetlands and restored state authority to review proposals that impact "non-federal wetlands".

Since the SWANCC decision however, state wetland protections have been weakened with the passage of laws such as 2018 Act 183, which grants permitting exemptions to activities that cause loss of certain types of artificial wetlands and non-federal wetlands.[7]

With weakening of state protections, and the additional weakening of the definition of WOTUS at the national level, Wisconsin risks losing protection for millions of acres of wetlands and ephemeral streams to development, pollution, or infilling.

Proportion of Wetlands Protected Under State and Federal Regulations



The Impact of the 2020 NWPR on Wisconsin's Wetlands

Understanding the impact of the 2020 NWPR in Wisconsin requires examining the extent of wetlands in the state that would no longer be considered *Waters of the United States* and thus have lost protection under the Clean Water Act.

Wisconsin Assessment

Whether a wetland meets the 2020 Waters of the United States definition depends on its position in the landscape, how water flows in the wetland, and how that water

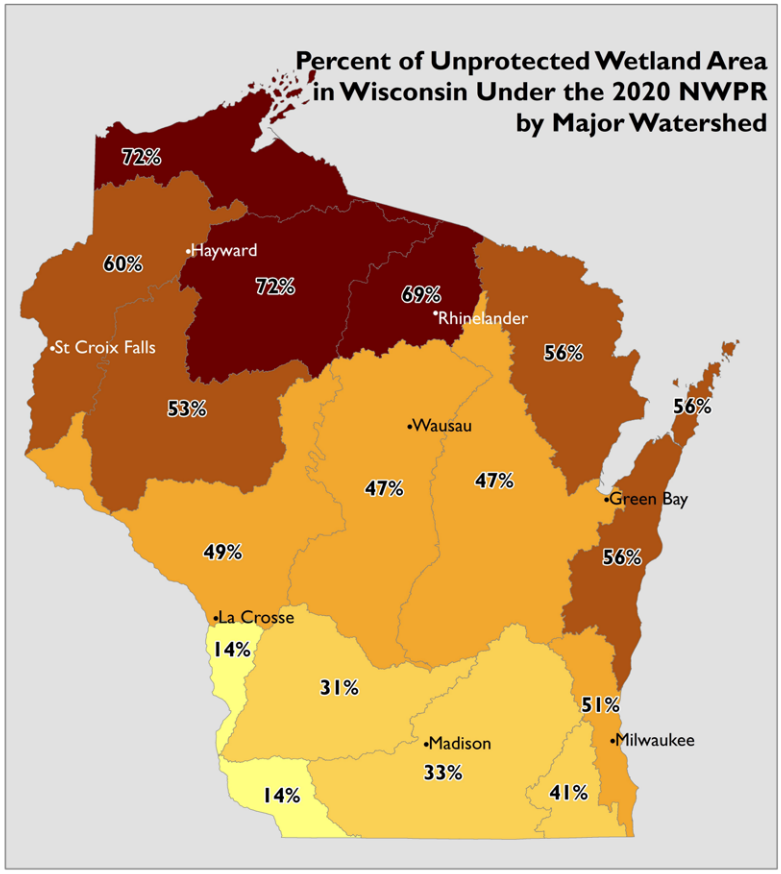
is related to other other statewide water bodies. Wisconsin's statewide wetland classification system enables an estimate of these features based on GIS data. This classification was developed by the National Wetland Inventory and applied to the wetlands mapped by the Wisconsin Wetland Inventory in a joint project of the Wisconsin Department of Natural Resources and The Nature Conservancy called *Wetlands by Design*.[8]

Wisconsin's Green Fire and the Wisconsin chapter of the Nature Conservancy used Wetlands by Design and the Wisconsin Wetlands Inventory to evaluate the impact of the 2020 NWPR on Wisconsin's wetlands. Our analysis was specific to wetlands and did not examine the changes in federal protection of ephemeral and intermittent streams, which are also important to healthy watersheds.

Federal Wetland Protection in Wisconsin Estimated Under the 2020 WOTUS Rule

Our assessment finds that as many as 3.5 million acres, or 55% of Wisconsin's wetlands would not be protected by the Clean Water Act under the 2020 NWPR.

The potential change in federal wetland protection varies across Wisconsin. Our assessment shows a greater proportion of wetlands lose protection in the north where wetlands are more extensive and often "isolated" relative to navigable waters. Since many of the wetlands located in southern watersheds have already been converted to other land uses, fewer remaining southern wetlands face risk of loss compared to wetlands in northern watersheds.



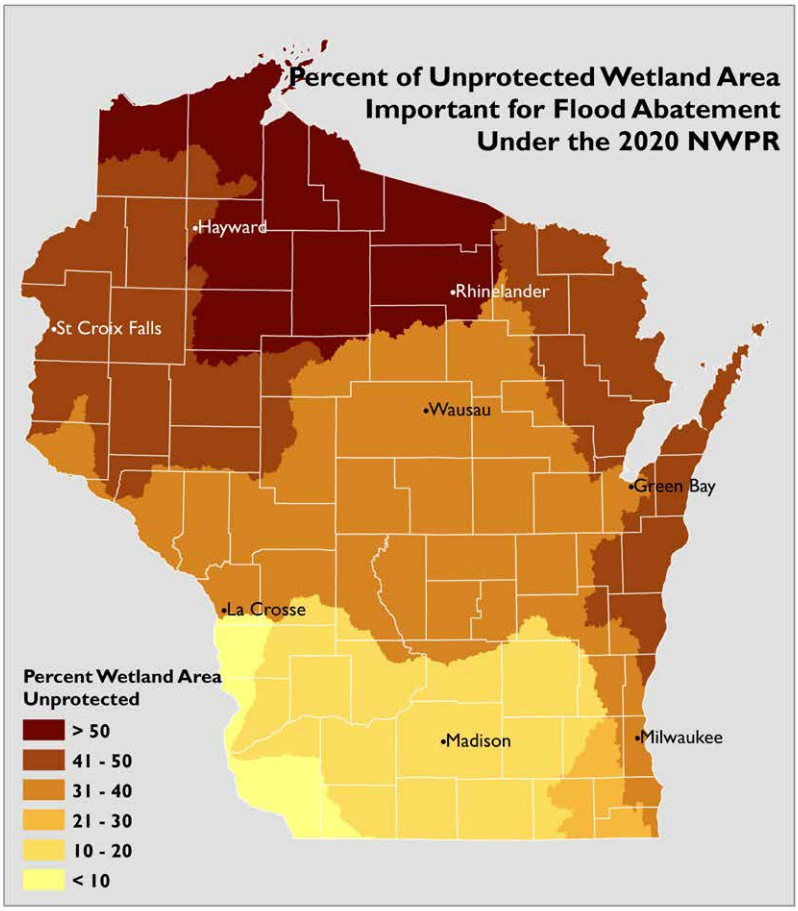
Percent of unprotected wetland area in Wisconsin under the 2020 NWPR, by major watershed. Darker colors correspond to watersheds with a greater loss of federal wetland protection.

Wetland Functions Matter

Wetlands play an important role on the landscape by providing fish and wildlife habitat, as well as valuable ecosystem services with direct benefits to people.

One such service is flood water storage. Wetlands along streams and rivers act like sponges to store floodwaters and slowly release them to reduce flooding peaks. Wetlands with dense vegetation help reduce flow velocity. Ponds and depressional wetlands collect storm water runoff from adjacent lands, which prevents the water from flooding surrounding areas. Our analysis closely examined the ecosystem service of flood abatement and how the 2020 NWPR might translate to increased losses of wetlands critical to flood abatement.

Statewide, our assessment estimates that 2.5 million acres of wetlands that contribute to managing flood waters would not be protected by the Clean Water Act under the 2020 NWPR. The map below shows greater vulnerability for watersheds containing important wetlands for flood abatement in northern Wisconsin.



Percent of wetland area important for flood abatement in Wisconsin unprotected by the 2020 NWPR. Darker colors correspond to watersheds with a higher proportion of federally unprotected wetlands important for flood abatement.

Environmental Justice Implications

Flooding is an environmental justice issue in Wisconsin.

While the 2020 NWPR may impact a lower proportion of wetlands critical for flood abatement in southern Wisconsin, it is important to recognize the vital role these remaining wetlands play in reducing the severity of flood impacts to these more densely populated southern communities.

For example, flooding disproportionately impacts low-income communities of color in urban Milwaukee. Like many other cities across the United States, Milwaukee witnessed historic development practices that pushed low-income communities of color into flood prone areas most at risk from natural disasters.[9] Over time, the historic and repeated loss of surrounding wetlands coupled with warmer and wetter climate exacerbated flooding in these urban spaces.

Flood vulnerability in Milwaukee is linked to aging infrastructure and the inability of low-income residents to afford the cost of improvements to protect properties from flood events. During a flash flood event in July of 2010, Milwaukee County received upwards of 8 inches of rain in just a few hours. The Lincoln Creek area of Milwaukee, home to low-income communities of color, saw some of the worst damage and the only fatality across the city.[10]

In northern Wisconsin, Tribal Nations and other communities have also encountered severe storms that have generated widespread flooding and damage. In a memorable storm in northwest Wisconsin in summer 2016, portions of Ashland, Bayfield and Douglas Counties received 8 to 10 inches of rain in an eight-hour period. The storm severely flooded the Bad River and its tributaries, washing out roads and causing millions of dollars of critical infrastructure damage on the Bad River Reservation, home to the Bad River Band of Lake Superior Tribe of Chippewa.

The Kakagon Sloughs of the Bad River, Photo Credit Ashley Gries

The Bad River, which flows north to Lake Superior, passes through the Kakagon and Bad River Sloughs which are high quality wetlands with high cultural significance to the Bad River Tribe. The Sloughs provide nourishment in the form of fish and *Manoomin*, wild rice, which is highly sensitive to changes in water level and water quality, both of which were impacted by the flood. The 2016 flood event also generated heavy silt and flooded ancestral burial grounds. Loss of additional wetlands as a result of WOTUS rule changes only stand to exacerbate these disasters under a changing climate.

What Wisconsin Risks Losing

The following wetlands may not be protected under the under the 2020 NWPR.

Bogs and Forested Wetlands

Extensive in the northern portion of the state where they provide habitat for many wildlife species, bogs and some forested wetlands are fed by rainwater or snowmelt and are isolated from regulated waterways. Many small streams originate in these wetlands. Forested wetlands include Tamarack, Black Spruce and Cedar Swamps.

Forested Wetland in Waushara County Photo by Joanne Kline (top)

Jyme Lake Bog Photo by Joanne Kline (bottom)

Groundwater-fed Wetlands and Streams

These wetlands are particularly important in southwestern Wisconsin where cool groundwater passing through them feeds coldwater trout streams. Coldwater trout fishing is critical to the recreation economy in the Wisconsin Driftless Area. A study released in 2016 estimates that trout fishing had a $1.6 billion-dollar annual economic impact in the Driftless Area in 2015.[11]

Headwaters of Three Springs Creek near Sister Bay, WI. Photo by Joanne Kline.

Pothole and Kettle Wetlands

Pothole and kettle wetlands occur in glaciated areas throughout Wisconsin and are often surrounded by uplands. Ephemeral ponds in forested landscapes provide essential sites for amphibian reproduction. Seasonally flooded basins within agricultural and grassland areas are also critical to migratory waterfowl reproduction.

Pothole wetland at Ulrich Wildlife Area. Photo by Wisconsin Department of Natural Resources.

Forested Floodplain along Milwaukee River in Washington County. Photo by Joanne Kline. (left)

Riverbend farm flooding along the Milwaukee River in Washington County, 2004. Flood waters slowed and stored by this forested floodplain wetland reduce flooding problems downstream. Photo by Joanne Kline. (right)

Floodplain Wetlands

Floodplain wetlands are supported by river-influenced water tables between floods. How flood data are used will affect the determination of whether these wetlands, and which portions of them, are regulated by the NWPR 2020. Floodplain wetlands are vital for fish and aquatic life and critical to storing floodwaters to reduce downstream flooding which can lead to property damage and loss of life in the case of devastating floods.

Conclusion

The 2020 NWPR removes federal Clean Water Act protection from 55% of Wisconsin's remaining wetlands. Wetland protections under Wisconsin law remain in place for only a portion of these currently non-federal wetlands. A significant loss of state protections occurred under 2018 Act 183 that exempted some isolated wetlands from state protection. Unless the 2020 NWPR is repealed and replaced, Wisconsin risks losing millions of additional acres of a critical public trust resource.

The current impacts of climate change in Wisconsin, especially the increase in frequency and severity of flooding, make it imperative to protect and restore more wetlands and not to accept their continued loss under pressures of development and competing land uses. Wetland loss places financial burdens on society, with direct impacts of flooding disproportionately damaging low income, Indigenous communities, and communities of color.

The regulatory uncertainty caused by changing interpretations of WOTUS, thus changing the scope of the CWA, could be remedied with federal legislation ensuring federal protection for all natural waters and wetlands that contribute to the interconnections critical to healthy watersheds.

Opportunities exist now with federal funding that is likely to become available in 2021 to support investment in green infrastructure projects that address watershed-level impacts and engage public and private landowners in improving the capacity of wetlands to provide vital flood abatement services. New funding will create opportunities to engage local units of government, Wisconsin Tribal Nations, communities of color, and low-income communities in watershed and wetland restoration projects within and between their respective borders.

Recommended Actions

= Executive Action = Budget = Policy

Clarifying the definition of Waters of the United States will save time, prevent confusion, and provide certainty for all stakeholders as to which waters and wetlands are covered under the CWA. Providing that certainty however would require new federal legislation. The Clean Water Restoration Act was an earlier attempt to provide that certainty, however it is likely that successful legislation today will need to take other forms.

Federal Recommendations

1. Repeal and replace the 2020 NWPR with a rule that is based on the science of watersheds and hydrology and that draws from the 2015 Connectivity Report.
2. Evaluate economic and social impacts of flooding, especially impacts to Native Americans, communities of color, and low-income communities, and budget for increased flood mitigation and emergency response, accordingly.
3. Incorporate hydrogeomorphic classification as part of National Wetland Inventory updates. This will enable nationwide assessment of the potential impact of changes to WOTUS and other wetland policies, support wetland conservation planning, and it will facilitate evaluations such as described in Recommendation #2, above.

State Recommendations

4. Preserve and protect current Wisconsin state wetland laws. Wisconsin's WI Act 6, creating s. 281.36, Wis. Stats., passed unanimously in 2001, provides an important backstop to the risk of loss posed by 2020 NWPR.
5. Utilize the new wetland mapping protocol that the Wisconsin Department of Natural Resources (WDNR) has developed in updating the statewide Wisconsin Wetland Inventory. Improved mapping—including the integration of surface water mapping with wetland mapping, as well as the National Wetland Inventory's hydrogeomorphic classification system—will help propel modeling efforts critical to planning and adaptation.
6. WDNR should evaluate the impacts to non-federally regulated wetlands resulting from the permit exemptions provided by Wisconsin 2018 Act 183 and provide necessary transparency into the valuation of these impacts with the public.
7. Support and invest in green infrastructure projects that address watershed-level impacts. These projects should be developed in close collaboration with Native Americans, communities of color, and low-income communities to reduce flooding impacts.

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WISCONSIN'S greenfire
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715.203.0384
wigreenfire.org | info@wigreenfire.org
PO Box 1206 | Rhinelander, WI 54501