



☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

April 15, 2003

The Honorable Christine Todd Whitman
Administrator, U.S. Environmental Protection Agency
Ariel Rios Building, Room 3000; Pennsylvania Avenue, N.W.
Washington, D.C. 20460

The Honorable George Dunlop
Acting Principle Deputy Assistant Secretary of the Army for Civil Works
108 Army Pentagon
Washington, D.C. 20310

The Honorable James L. Connaughton
Chairman, White House Council on Environmental Quality
730 Jackson Place, N.W.
Washington, D.C. 20503

Dear Administrator Whitman, Acting Deputy Assistant Secretary Dunlop, and Chairman Connaughton:

I am writing on behalf of the North Carolina Wildlife Resources Commission (NCWRC). This agency is charged with the protection, enhancement and conservation of the wildlife and fishery resources of North Carolina. This includes both game and non-game species and their habitats, which clearly includes wetlands. NCWRC is offering comments regarding the advanced notice of proposed rulemaking (ANPRM) regarding the scope of waters subject to the Clean Water Act (CWA), in light of the U.S. Supreme Court Decision in the Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001) (SWANCC), Docket ID No. OW-2002-0050.

The CWA was passed in 1972 by congress for the purpose of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. During the 30 years since its inception, court decisions have essentially upheld the authority of the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers to administer the Act as necessary to maintain the intent of Congress. The CWA was not specific in

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defining “waters”. Court challenges regarding the definition of “waters of the U.S.” have shaped Section 404 regulations. Throughout these court challenges the linkage of surface waters such as tributaries both intermittent and perennial and drainage ditches to the quality of navigable waters has usually been upheld. However, court decisions provide less clarity in defining the relationship between wetlands and “waters of the U.S.”. This was highlighted by the Supreme Court case known as the SWANCC decision. In that case, the court ruled that geographically isolated wetlands could no longer be considered jurisdictional solely on the basis of use by migratory birds, a resource with interstate and international commerce ties. This decision had the effect of withdrawing federal jurisdiction and CWA protection from isolated, intra-state and non-navigable wetlands.

Since the Supreme Court did not define “isolated” in the SWANCC decision, the scope of waters and wetlands within federal jurisdiction is unclear. Regulatory application has become inconsistent within the agencies and has caused confusion among the regulated community. Recent court decisions and decisions within the regulatory agencies themselves have excluded jurisdiction from many wetlands that were protected prior to the SWANCC decision.

It is our position that wetlands play a critical role in supporting the quality and quantity of the Nation’s waters. The biological communities supported by wetlands play an important role in that process. Policy that threatens the status of wetlands will work counter to the goals of the CWA.

Wetlands are a focus of interest for ecologists, hydrologists, soil scientists, and resource managers because they represent a dynamic interface between the land and water systems. However, many people have little understanding of the characteristics that make an area a wetland. Many regard wetlands as wasted land that could be best used by filling or draining. In North Carolina, there is a wide diversity of wetland types, particularly freshwater wetlands.

The U.S Fish and Wildlife Service report on the status of the Nation’s wetlands indicates that of the estimated 221 million acres of wetlands in the U.S. at the time of European settlement, 53% (115.5 million acres) had been lost by 1997 (Dahl 2000). Also many millions of additional acres have been impacted or converted to other wetland types. Because of functional linkages between wetlands and waters, wetland science does not separate out “isolated wetlands”. In Dahl (2000), there is no data that allows for an assessment of the status of “isolated” wetlands. However, it is very likely that these types of wetlands experience the highest rate of loss of all wetland types, simply due to the ease of conversion and a regulatory bias that seems to place lesser value on these systems.

In North Carolina, based on the presence of soils which develop in wet conditions, it is estimated that there were nearly 7.5 million acres of wetlands prior to European settlement (DEM 1994). According to estimates by the N.C. Division of Environmental Management, about 34% of North Carolina’s original wetland acreage has been impacted. Of this acreage about 2.5% has been converted to urban land use, 18% has been converted to agriculture and about 13% has been converted to forestry (DEM 1996). Typically, the

wetlands that have been converted for these uses have been what could be termed “geographically isolated”. Most of the wetlands that have been converted were marginally wet areas rather than extremely wet areas (DEM 1996). For example, 83% of Carteret County is believed to have been wetlands prior to European settlement (DEM 1991). By the 1950’s, about 73% of the county was still covered by largely natural wetlands (wetlands with little disturbance and intact systems of hydrology, hydric soils, and wetland plants). However, by the 1980’s, only 52% of the county was covered by largely natural wetlands. Only 2% of the wetlands that were modified were salt or brackish marshes; most were freshwater wetlands (DEM 1996).

Many wetland types found in North Carolina could be termed “geographically” isolated. Wetland types that fall into this category are freshwater systems and include Carolina bays, mafic depressions, mountain bogs, pine savannahs, and vernal pools. Although many of these wetlands may give the appearance of being “geographically” isolated they are not, in fact, functionally or hydrologically isolated.

The terms functions and values are often used interchangeable with regards to wetlands, but they do have different meanings. *Functions* are “ecological, hydrological, or other phenomena which contribute to the self-maintenance of the wetland ecosystem”. Functions are processes taking place within the wetland ecosystem irrespective of their effect on human society. Net primary productivity, production of organic material above what plants need to survive and grow, is an example of a wetland function (DEM 1996).

Values, on the other hand, denote “something worthy, desirable or useful to humans” (Mistch and Gosselink 1993). Values are derived from ecosystem functions that are perceived to have a positive impact on people. They are centered on the needs and perspective of human society. The law has often afforded protection to wetland functions that demonstrate value to humans. For example, plant production in salt marshes is critical for fish and shellfish harvests so salt marshes are given stringent protection in law. Because the perceptions of human society changes over time, values may also change (DEM 1996).

The value of the Nation’s wetlands, even though they only occupy 5% of the United States’ land surface, is recognized and well documented. Although the large-scale benefits of (wetland) functions can be valued, determining the value of individual wetlands is difficult because they differ widely and do not all perform the same functions or the same functions equally well. Decision makers must understand that impacts on wetland functions can diminish or eliminate the values of wetlands.

Some examples of wetland *values* are cited on the EPA website (www.epa.gov/owow/wetlands 2003). Some of these include:

Wetlands Improve Water Quality – Wetlands help stop pollutants from entering receiving waters. For example, the wetlands in the Congaree Bottomland Hardwood Swamp in South Carolina remove sediment and toxic substances and remove or filter excess nutrients. The least cost substitute for these wetland benefits would be a waste

treatment plant costing \$5 million (in 1991 dollars) to construct, and additional money would be needed to maintain and operate the plant.

Wetlands Help Control Floods – The Minnesota Department of Natural Resources has computed a cost of \$300 to replace, on average, each acre-foot of flood water storage. In other words, if development eliminates a one acre wetland that naturally holds 12 inches of water during a storm, the replacement cost would be \$300. The cost to replace the 5,000 acres of wetlands lost annually in Minnesota would be \$1.5 million (in 1991 dollars).

Wetlands Provide Important Wildlife Habitat – Up to one half of all North American bird species nest or feed in wetlands (>700 species in the U.S. alone). Also more than one-third of the United States' threatened and endangered species are wetland-dependant and nearly half are wetland-associated.

Wetlands Provide Recreational Opportunities – More than half of all U.S. adults (98 million people) hunt, fish, birdwatch, or photograph wildlife. These activities which rely on healthy wetlands, added an estimated \$59.5 million to the national economy in 1991. Individual states likewise gain economic benefits from recreational opportunities in wetlands that attract visitors from other states.

The hydrologic values derived from wetlands can be divided into two categories, water storage and pollutant removal. The first category, water storage, refers to the value wetlands have in temporarily storing heavy rain, surface runoff, and floodwaters (DEM 1996). Wetlands in any watershed, including geographically isolated wetlands serve a critical function in storing and holding water and associated pollutants including sediment, which could otherwise flow into navigable waters. Wetlands play a significant role in regional water flow regimes by intercepting storm runoff and storing and releasing those waters in a delayed fashion, either through surface or groundwater discharges (Mitsch and Gosselink 1986). The presence of many isolated wetlands decreases runoff velocity and volume by releasing water over an extended period (Carter 1996). The effect of this important wetland function is to abate flooding by lowering and moderating the peaks of flood stages, thereby reducing flood damages (Mitsch and Gosselink 1986). Some isolated wetlands perform important groundwater recharge functions related to water storage. Isolated wetlands can lose their water through evapotranspiration, into the soil profile and to ground water or often through ephemeral channels as surface water flow. “Isolated” wetlands can and often do contribute to groundwater recharge (and discharge). This groundwater then continues movement downslope toward intermittent or flowing streams ultimately entering navigable waters (Winter et al. 1998). Therefore, many wetlands, which are seemingly “isolated”, are actually functionally connected and adjacent to navigable waters that are clearly regulated by the CWA. In other words, water contained in an “isolated” wetland is water that could otherwise flow (either surface or subsurface) into navigable water or a tributary if that wetland was drained or filled. Any sediment or pollutants contained therein would also be carried into those waters with out the connected wetlands.

Isolated wetlands also play a key role in pollutant removal. It is well established that wetlands of all types have the capability to improve water quality by trapping, precipitating, transforming, recycling, and/or exporting many of its chemical and waterborne constituents (Mitsch and Gosselink 1986; DEM 1991; DEM 1996). Wetlands serve as important buffers between upland areas and flowing water. They improve water quality by removing heavy metals and pesticides from the water column, and by allowing the precipitation of sediment particles to which many pollutants are attached. Wetland vegetation removes excess nutrients, e.g. phosphorous and nitrogen, and incorporates them into plant tissue or the soil structure by providing an environment in which microbial and other biological activity pulls these compounds out of the water, enhancing its quality.

Nitrogen is one of the most difficult pollutants to remove from our waterways. Often introduced through agricultural or residential fertilizer use or through treated wastewater, it affects plant growth in wetlands and streams and can lead to detrimental algal blooms that can lead to fish kills. Wetland plants temporarily remove nitrogen when they absorb them to build plant tissue. When the plants die the microbes in the soil again release these nutrients. However, alternating periods of inundation and dry down can create conditions by which nitrogen is permanently removed. When wetlands are inundated, animals in the soil and water begin to consume dissolved oxygen leading to anaerobic conditions. Under these conditions, organic nitrogen in plant tissues is converted to ammonium by bacteria. Some ammonium escapes to the atmosphere. As the wetland dries and aerobic conditions return, aerobic bacteria convert the ammonium to nitrate in a process called nitrification. When anaerobic conditions return, another set of anaerobic microbes converts the nitrate to gaseous nitrogen in a process called denitrification (DEM 1996).

Water quality contributions are made by wetlands regardless of their landscape position. Isolated wetlands serve as important chemical and nutrient sinks, trapping and holding these compounds (Mitsch and Gosselink 1986). Because some of this water enters the groundwater, which makes its way into stream and springs, (Weeks and Gutentag 1984), functionally there is an important connection between the status and water quality of “isolated” wetlands and the status and water quality of groundwater aquifers, and navigable waters or tributaries. Increased flood flow associated with the loss of geographically “isolated” wetlands is an important factor in streambank erosion. This type of erosion is a significant water quality problem in many areas downstream of “isolated” wetlands in the United States, contributing greatly to sediment pollution loads in navigable waters.

We feel that there is sufficient evidence in the literature to suggest that there is functional adjacency between most categories of wetlands and navigable water to warrant jurisdiction under the CWA. The functional relationship of wetland to groundwater, groundwater to tributary and navigable stream flows appears to be strong enough to be the foundation for a presumption of jurisdiction. Without this type of presumptive foundation for jurisdiction, a wetland-by-wetland demonstration of hydrologic relationships would make enforcement of the CWA impossible.

Isolated wetlands, ephemeral streams and tributaries are an important part of North Carolina’s watersheds. These systems affect the biological and chemical integrity of our

waterways. Since these non-navigable tributaries and their adjacent wetlands drain to larger bodies of water and groundwater, their degradation will negatively affect traditional navigable waters. Unregulated destruction of these non-navigable waters would also jeopardize many important and unique wetlands that provide significant fish and wildlife habitat that supports an enormous diversity of species including federally listed threatened and endangered species.

Waterfowl are especially tied to wetlands; more specifically associated and dependent on wetlands that are not directly associated with navigable waters or their tributaries. Hence, many species of waterfowl are dependant on “isolated” wetlands, which will no longer be regulated by the CWA. The prairie pothole region is the most important breeding area for the most economically important species of ducks (e.g., mallards, blue-winged teal, northern pintails) in North America (Ducks Unlimited 2001). An estimated 50% of the average total annual production of ducks comes from the potholes (Dahl 1990), and in wet years 70% or more of the continent’s duck production can originate in this region (Ducks Unlimited 2001).

Waterfowl watching and hunting is a valuable interstate and international economic resource. Nearly 3 million migratory bird hunters, including 1.6 duck hunters, spent approximately \$1.4 billion in 2001 for hunting related goods and services (U.S. Fish & Wildlife Service 2002). The 2001 study documented that 14% of the migratory bird hunting took place in a state other than the one in which the participant resided. Waterfowl hunting and watching is an important recreational activity in North Carolina. Currituck Sound is one of the more important wintering habitats for waterfowl in the Atlantic Flyway. In some years, as much as 5% of the waterfowl in the flyway winter there. This area was identified as a “Focus Area” in the Atlantic Coast Joint Venture of the North American Waterfowl Plan. This plan is an international strategy developed by the United States, Canada, and Mexico to facilitate the recovery of North American Waterfowl populations. A reduction of waterfowl production due to loss of nesting habitat such as prairie potholes could result in economic losses from a reduction in hunting license and duck stamp sales, reduction in the use of local guides, and a reduction in patronage to motels and restaurants that cater to hunters and bird watchers. The patronage of these local businesses by waterfowl hunters can be very important because it occurs in the “off-season”. Many local businesses and individuals depend on the money generated by waterfowl hunters and other waterfowl related tourists to supplement their income or to remain open during the winter months (D. Luszcz, NCWRC Waterfowl Biologist, pers. comm.).

In addition to the importance of waterfowl hunting to commerce, bird watching contributes substantially to the national economy. In 2001, 14.4 million people participated in watching waterfowl, with associated expenditures and values also measured in the billions of dollars (U.S. Fish & Wildlife Service 2002). Approximately 30% of that waterfowl watching was conducted in states other than the participant’s state of residence.

In a time of budget shortages in many states, the removal of federal oversight for such a large percentage of our Nation’s wetlands would only serve to further strap state agencies that would be forced to assume these regulatory responsibilities. In the past, states have

relied on Section 404 of the CWA, and have only developed limited regulations of their own to protect these types of wetlands. We fear that if the CWA protection is removed through this rulemaking process, there will be little or no state regulations in place to prevent the further loss and degradation of non-navigable wetlands and the associated pollution of the Nation's waterways.

We believe limiting the jurisdictional reach of the CWA simply to navigable waters and their adjoining wetlands is imprudent. We have seen the improvements to water quality and the associated benefits to wildlife and fishery resources and ultimately to the citizens of our state and nation from the implementation of the CWA. Only through a strong environmental policy and stringent enforcement can we provide for the wise use and enjoyment of our natural resources. We urge the EPA and federal government to continue to place a high value on these non-navigable resources; clarify the definition of navigable waters to include the systems that are important in maintaining the chemical and biological integrity of our Nation's waterways.

We appreciate the opportunity to provide input on this critically important issue. If you have questions or need further information regarding our comments please contact me at (919) 528-9886.

Thank you,

David R. Cox
Technical Guidance Supervisor, NCWRC

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