North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

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Secretary

February 3, 2015

MEMORANDUM

TO: THE ENVIRONMENTAL REVIEW COMMISSION
The Honorable Mike Hager, Co-Chair
The Honorable Brent Jackson, Co-Chair

FROM: Brad Knott, Deputy Director of Legislative Affairs

SUBJECT: Status Report to the General Assembly; Study for the S734 Regulatory Reform Act of 2014: Bill Section 54(d)

DATE: February 3, 2015

Pursuant to S.L. 2014-120 section 54.(d), The Department of Environment and Natural Resources shall study (i) how the term "isolated wetland" has been previously defined in State law and whether the term should be clarified in order to provide greater certainty in identifying isolated wetlands; (ii) the surface area thresholds for the regulation of mountain bog isolated wetlands, including whether mountain bog isolated wetlands should have surface area regulatory thresholds different from other types of isolated wetlands; and (iii) whether impacts to isolated wetlands should be combined with the project impacts to jurisdictional wetlands or streams for the purpose of determining when impact thresholds that trigger a mitigation requirement are met. Please consider the attached as the formal submission this report.

If you have any questions or need additional information, please contact me by phone at (919) 707-9335 or via e-mail at brad.knott@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for Environment, NCDENR
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Report to the General Assembly

Section 54 (d) of the Regulatory Reform Act of 2014 (S.L. 2014-120)

Division of Water Resources
Department of Environment and Natural Resources

February 2015

EXECUTIVE SUMMARY

Rulings by the U.S. Supreme Court since 2001 prompted the Environmental Management Commission to require permits for activities in "isolated wetlands" that were no longer considered to be "waters of the United States" within Clean Water Act jurisdiction. Federal court decisions require some degree of linkage, or nexus, to "navigable waters" for a waterbody or wetland to fall within the jurisdiction of the Clean Water Act. An isolated wetland is one which lacks a surface connection to waters ultimately connected to navigable waters.

"Waters of the United States" explicitly includes "wetlands." "Waters of the State" is defined at N.C. Gen. Stat. §143-212(6). It is a term broader in scope than "waters of the United States." "Waters of the State" include, for example, groundwater, and inclusion within the definition does not rely on a connection to navigable waters. However, Environmental Management Commission ("EMC") rules do not define "isolated wetlands" separate from "wetlands." "Wetlands" are defined such that wetlands which are not waters of the United States are excluded from state regulation. This sets up a conundrum in that the Commission which established a permit program for activities in "isolated wetlands," also excluded those same "isolated wetlands" from its regulatory jurisdiction.

The U.S. Environmental Protection Agency ("EPA") and the U.S. Army Corps of Engineers (the "Corps"), on March 25, 2014, proposed a new definition for "waters of the United States" that so significantly broadens the scope of the term that "isolated wetlands" would brought within Clean Water Act jurisdiction. This proposed rule is still being considered by the federal agencies.

The pending proposed definition for "waters of the United States," if adopted by EPA and the Corps, would effectively render irrelevant the question of whether isolated wetlands were included in State or federal jurisdiction, because the concept of "isolated wetlands" would virtually disappear. For that reason, the inquiries posed by S.L. 2014-120 are premature, pending adoption, revision or rejection of the proposed new federal definition of "waters of the United States."

REPORT

Two decisions by the U.S. Supreme Court in the last 15 years have significantly influenced the way wetlands and isolated wetlands are defined and identified. *Solid Waste Authority of Northern Cook County v. U.S. Army Corps of Engineers* (2001), commonly referred to as the SWANCC decision, held that Clean Water Act jurisdiction did not extend to waters, including wetlands, which were "nonnavigable, isolated and intrastate waters." That is, such isolated wetlands were not considered to fall within the definition of "waters of the United States." Then, in 2006, the Supreme Court decision in *Rapanos v. U.S.* complicated the issue of delineating "waters of the United States" because it was a plurality decision that provided no definitive ruling. In *Rapanos*, the plurality concluded that waters of the United States were limited to relatively permanent standing or continuously flowing bodies of water connected to traditional navigable-in-fact waters, and wetlands with a continuous surface connection to such relatively permanent waters. Justice Kennedy's opinion, concurring in the result, held that waters of the United States were those for which a significant nexus to navigable-in-fact waters could be shown. Most appellate courts have interpreted *Rapanos* to mean that if a water body was deemed navigable under either the plurality test or the Kennedy test, it would be considered to be a water of the United States within Clean Water Act jurisdiction. EPA has proposed a rule to define “waters of the United States,” essentially in response to *Rapanos*, relying principally on the “significant nexus” test stated in Justice Kennedy’s concurring opinion.

Waters of the State of North Carolina are defined more broadly than "waters of the United States," as the term includes, for example, groundwater. N.C. Gen. Stat. 143-212(6). The NC Court of Appeals has interpreted the definition even more expansively. *NC Home Builders Ass’n. v. NCDENR* (1996).

NC DENR regulates activities in wetlands in several different ways. There are narrative water quality standards applicable to wetlands. NC DENR issues certifications that activities permitted by the Corps of Engineers under Section 404 of the Clean Water Act will protect those standards. See 15A NCAC 2H .0501, *et seq*. And the Environmental Management Commission in 2001, ostensibly in response to SWANCC, adopted rules, which became effective on April 1, 2003, requiring permits authorized under NC Gen. Stat. 143-215.1, for activities in "isolated wetlands." *See* 15A NCAC 2H .1301, *et seq*.

Inquiry at Section 54.(d)(i)

Isolated wetlands are not defined separate from wetlands, which are defined at 15A NCAC 2B .0202(71). The definition of "wetlands" expressly limits wetlands which are waters of the State to those which are also "waters of the United States," as defined in EPA and Corps rules. Curiously, if, under SWANCC, isolated wetlands are not waters of the United States, neither are they waters of the State. This regulatory conundrum has continued since the adoption of 15A NCAC 2H .1301-.1305. Ostensibly, because the term "isolated wetlands" has not been distinguished in State law from the term "wetlands" and, indeed, appears to be a category of "wetlands" as that term is defined at 15A NCAC 2B .0202(72), the permit program for activities in isolated wetlands was established without authority.

It must be noted, however, that EPA and the Corps, on March 25, 2014, published a proposed rule defining "waters of the United States" that would dramatically broaden the definition, incorporating within the definition waters on the basis of "hydrologic connectivity." The federal agencies' rationale is that "hydrologic connectivity" satisfies the Kennedy "significant nexus" test. If this rule is adopted (and

withstands certain judicial challenges), isolated wetlands would become an almost theoretical term, as wetlands which were not in some sense hydrologically connected to other waters which were, in turn, ultimately hydrologically connected to navigable-in-fact waters would ostensibly be extremely rare. Any such wetlands would be so insignificant in terms of their effect, cumulatively or individually, on the biological, chemical and physical integrity of navigable waters, that such “isolated wetlands” would fall outside federal regulatory concern. Although the definition of "waters of the State" may be broad enough to still include such genuinely isolated wetlands, they may be practically nonexistent in North Carolina.

For this reason, NC DENR believes that the report required under Section 54.(d) of Session Law 2014-120 may be premature pending the outcome of the federal rulemaking process. NC DENR recommends that the General Assembly reconsider postponing the date for submittal of the study report, at least with respect to the question about the appropriate definition of "isolated wetlands," until after federal agencies have taken final agency action on the proposed definition of "waters of the United States."

Inquiry at Section 54.(d)(ii)

Section 54.(d)(ii) of Session Law 2014-120 inquired into whether the surface area regulatory threshold for "mountain bog isolated wetlands" should be reconsidered and distinguished from the surface area regulatory threshold for other types of isolated wetlands. After studying this issue, NC DENR staff found that no mountain bog which the Corps has delineated has been found to be nonjurisdictional (under Section 404 of the Clean Water Act) on the basis of isolation from other waters of the United States. That is, no mountain bog has ever been identified as an "isolated wetland." For this reason, the term "mountain bog isolated wetland" may be simply a theoretical construct for which an example has not been identified in North Carolina. As such, it is unclear (and undeterminable) whether surface area regulatory thresholds for mountain bog isolated wetlands should differ from other types of isolated wetlands.

Inquiry at Section 54.(d)(iii)

Finally, in accordance with EMC rules, impacts to isolated wetlands have been combined with project impacts to Clean Water Act jurisdictional wetlands for the purpose of calculating and determining thresholds triggering mitigation requirements. The mitigation ratio for such cumulative impacts is provided at 15A NCAC 2H .1305(g)(6). This is another example of a regulatory distinction which could be rendered meaningless depending on the federal definition of "waters of the United States" currently proposed by EPA and the Corps. On those sites where both isolated wetlands and wetlands within current federal jurisdiction will be impacted by a project, NC DENR believes that the cumulative impact of the project on downstream water quality standards will be influenced by the loss or degradation of both isolated and federal jurisdictional wetlands, and recommends that the current practice of cumulating impacts be continued.

Attached to this report and recommendation is background documentation provided by NC DENR staff on which the recommendations have been based.

SUPPLEMENTAL MATERIAL

Senate Bill 734: Regulatory Reform Act of 2014 Section 54(d) (S.L. 2014-120) states,

SECTION 54.(d) The Department of Environment and Natural Resources shall study (i) how the term "isolated wetland" has been previously defined in State law and whether the term should be clarified in order to provide greater certainty in identifying isolated wetlands; (ii) the surface area thresholds for the regulation of mountain bog isolated wetlands, including whether mountain bog isolated wetlands should have surface area regulatory thresholds different from other types of isolated wetlands; and (iii) whether impacts to isolated wetlands should be combined with the project impacts to jurisdictional wetlands or streams for the purpose of determining when impact thresholds that trigger a mitigation requirement are met. The Department shall report its findings and recommendations to the Environmental Review Commission on or before November 1, 2014.

The North Carolina Department of Environment and Natural Resources (NC DENR) compiled the following information in response to the call to conduct an informational study concerning isolated wetlands.

BACKGROUND INFORMATION:

Supreme Court Rulings

Solid Waste Authority of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) was decided on January 9, 2001. As a result of the ruling, “nonnavigable, isolated and intrastate” waters or wetlands are exempt from the Clean Water Act unless the impact to the isolated waters affect “waters of the United States” or interstate or foreign commerce. EPA and the Corps may assert jurisdiction over non-navigable tributaries of traditional navigable waters that are “relatively permanent” and may assert jurisdiction over those “adjacent wetlands that have a continuous surface connection to such tributaries.”

If the Corps makes a Jurisdictional Determination (JD) for a wetland and determines that a wetland is non-jurisdictional under the Clean Water Act, the practice of the North Carolina Division of Water Resources (DWR) was to delineate non-jurisdictional wetlands proposed to be impacted by a project. Like the Corps, DWR has utilized the 1987 Corps of Engineers Wetlands Delineation Manual (Wetlands Research Program Technical Report Y-87-1) to determine the wetland boundaries.

Wetland Functions

Wetland systems can perform many chemical, physical, and biological functions. The health of the wetland and the surrounding ecosystems are influenced by how well the wetland performs

each function. The North Carolina Wetland Assessment Method (NC WAM) (N.C. Wetland Functional Assessment Team, 2010) rates a wetland's ability to perform three primary functions (hydrology, water quality, and habitat) by inferring wetland functions from the assessment of wetland condition and opportunity. The primary functions are rated based on the assessment of the wetland's ability to perform a suite of sub-functions.

1. Hydrology
    - Surface storage and retention
    - Sub-surface storage and retention
2. Water Quality
    - Particulate Change
    - Soluble Change
    - Pathogen Change
    - Physical Change
    - Pollution Change
3. Habitat
    - Physical Structure
    - Landscape patch structure
    - Vegetation composition

The functions and sub-functions that each wetland is able to perform vary based on the wetland type, size, location, and surrounding land use. Performance of these functions translates into the wetland's ability to provide filtration or storage of sediments, nutrients, pollutants, etc., storm and flood water storage and retention, groundwater discharge or recharge, protection against erosion, and habitat for wetland-dependent species and their breeding, nesting, cover, travel corridors and food. Each individual, group, or agency, places its own value on the wetland's ability to perform its various functions.

Isolated wetlands can be areas of scenic beauty and are able to perform several wetland functions, including habitat for waterfowl feeding and nesting, habitat for upland and wetland species, floodwater retention, and sediment and nutrient retention. Novitzki, *et al*. (1996). A study was conducted on isolated wetlands in the coastal plain of North and South Carolina. RTI International, *et al*. (2011) concluding, "data suggested that the study area isolated soils tend to be acidic and have higher organic matter, higher nutrients, and a higher capacity for nutrient and metal adsorption than corresponding upland soils." These isolated wetlands have the potential to immobilize phosphorus introduced to the wetland and can serve as sinks for other nutrients. The study also showed that the isolated wetlands typically have a shallow groundwater connection and the water levels in the wetland respond quickly to significant precipitation events. Whigham and Jordan (2003) also found that isolated wetlands can serve as nutrient sinks and that the loss of isolated wetlands can negatively impact water quality downstream due to their hydrologic connectivity to other waters and wetlands. Blann, *et al*. (2009) stated that along with habitat loss,

drainage impacts can include, “significant alteration of biogeochemical and hydrologic cycles, loss of flood storage and water quality functions of wetlands, and elimination of nutrient and sediment sinks and other buffering capacities of wetlands in relation to adjacent upland and riparian ecosystems.”

North Carolina’s Wetlands

Permitted Impacts for Isolated Wetlands

In a 2012 National Wetlands Newsletter report, Dorney, *et al*. (2012), it was predicted that 1.3 percent to 6.6 percent of the wetlands in the Southeastern States are isolated. For information on permitted wetland impacts from 2001 to 2011 in Virginia and North Carolina, 8.6 percent of Virginia’s wetland permits were for impacts to isolated wetlands, and 4.4 percent of North Carolina’s wetland permits were for impacts to isolated wetlands.

North Carolina’s Basinwide Information Management System (BIMS) was queried using Business Objects, in order to obtain information on permitted impacts and required mitigation for permits issued between October 22, 2001 and October 8, 2014. A total of 184 Isolated Wetland Permits were issued with a total of 176 acres of approved impact. Statewide, for all wetland impacts, isolated and non-isolated, there were 5353 permits issued with a total of 12,067 acres of impact. Of these totals, 3.4 percent of the permits issued addressed impacts to isolated wetlands, and 1.4 percent of the acres of wetlands impacted were isolated wetlands. There were a total of 996 permits that required 15,784 acres of compensatory mitigation, of these, 42 projects (4.2 percent) obtained Isolated Wetland Permits that required 197 acres (1.2 percent) of compensatory mitigation.

Table 1: Wetland Permits for October 22, 2001 to October 8, 2014

Type of Permit	Number of Permits	Acres	Percentage of All
Isolated Permits for Impacts	184	176	1.4%
All Permits for Impacts	5353	12,067	NA
Isolated Permits with Mitigation	42	197	1.2%
All Permits with Mitigation	996	15,784	NA

Coastal Isolated Wetlands

The assessment of geographically isolated wetlands in North and South Carolina, RTI, *et al*. (2011), looked at isolated wetlands in four South Carolina and four North Carolina coastal counties. The study estimated that the eight counties have approximately 50,000 isolated wetlands (~30,000 in North Carolina) that cover approximately 30,000 acres of land, or 2 percent of the total wetland area. In the four North Carolina counties studied, it is estimated that the isolated wetlands hold more than 4,000 acre-feet of water and sequester ~5 metric tons of carbon in wetland soils. The North Carolina study sites had a mean size of 0.68 acres with a median size of 0.40 acres. Of the 47 wetlands that were sampled in the study area, 50 percent were forest flats, 33 percent were forested ponds, and 16 percent were small pocosins.

Bogs

According to NC WAM (Wetland Functional Assessment Team, 2010):

> "*Bogs are typically found in the Blue Ridge and Northern Inner Piedmont ecoregions. This wetland type occurs in geomorphic floodplains or natural topographic crenulations and is typically located on flat or gently sloping ground. Bogs are formed by a poorly understood combination of groundwater seepage and/or blocked overland runoff. This wetland type is at least semi-permanently saturated, but typically not inundated. Bogs occur on organic or mucky mineral soils, and this is a key feature in distinguishing Bogs from other wetland types. This wetland type is generally transitional in nature and may therefore be found in many forms, from forested to lacking canopy trees, and with sparse ground cover to dense mats of moss and herbs. Bogs are frequently impacted by beaver, and if beaver activity causes long-term inundation, areas formerly supporting Bog may transition to Non-Tidal Freshwater Marsh."*

There are a few North Carolina Natural Heritage Program (NC NHP) wetland types that are considered part of the N.C. WAM Bog classification. The Southern Appalachian Bog, sometimes referred to as a Mountain Bog, is one type. Personal communications (2012) with staff from the Nature Conservancy (TNC), NHP, and the U.S. Fish and Wildlife Service (USFWS) provide varying ranges of bog sizes depending on the included study sites (Table 2). The Mountain Bogs

were reported to consistently be as small as one-fourth acre, and occasionally smaller, and one site was as large as 467.65 acres (note: this study searched data for seeps, bogs, and fens). For one NHP study, bog size was estimated for 78 bogs and the average size was estimated at 5.7 acres. The two researchers consulted feel that is an overestimate of the bog sizes in this study area. Some estimates suggest that 90 to 98 percent of the bog acreage has been lost (North Carolina Wildlife Resources Commission, 2005; Personal communication, 2014).

Table 2: Estimates of Bog Sizes

Agency Contacted	Range	Other Values	Notes
NC NHP	Most from ¼ to 3 acres	One study: 78 bogs with estimated mean of 5.7 acres.*	Southern Appalachian Bogs
TNC	½ to 10 acres	Do not believe they have seen any larger than 10 acres.	Southern Appalachian Bogs
US FWS	0.03 to 467.65 acres**	Mean 11.65	Seeps, Bogs, and Fens

*The two scientists consulted felt that the mean estimate of 5.7 acres was too high.
** This data set included seeps, bogs, and fens, not just Southern Appalachian Bogs.

Many Mountain Bogs are small in size due to their landscape position, which often causes the bogs to be hydrologically connected, as opposed to being isolated. All of the bogs that Corps' staff have experienced while making jurisdictional determination (JD) calls for 404 permits were determined to be jurisdictional (Personal Communications, 2014). Most of the bogs in North Carolina are hydrologically fed by groundwater seeps often situated at the toe of a slope and are associated with a stream and/or ditch. Some bogs sit on the floodplain of the stream (active or relict), have streams running through them, or have streams serving as outflows to the site. The data surveyed by the USFWS (N.C. Natural Heritage Program Natural Heritage Element Occurrences dataset and the National Hydrography Dataset high resolution stream dataset) showed that 157 of 206 sites were within 50 meters of a stream and 132 of those same sites were within 10 meters of a stream. While the stream water may not be necessary for the majority of the bog sites, alterations to the bog or the associated stream would impact the other system. (Personal Communications, 2014). The fact that bogs are defined as riparian wetlands precludes them from being isolated unless there is a significant disturbance in the vicinity of the bog.

Bogs also provide unique habitat as well as habitat for several rare and endangered species. Bogs are beneficial as migratory bird breeding grounds and flight paths. There are 17 priority migratory bird species that are associated with mountain bogs and adjacent habitats. Several endemic and rare and endangered species utilize bog habitats as well. There are 13 federally listed endangered or threatened species, one candidate species, and 12 federal species of concern that live in North Carolina bogs (six of these species are bog obligate). There are also 34 species that are listed on North Carolina's and/or Tennessee's species lists. The bog turtle, mole salamander, and four-toed salamander are all either threatened, endangered or of special concern. Species facing significant threat, thought to be declining, or those with limited information are

golden-winged warbler, willow flycatcher, American woodchuck, rails, meadow jumping mouse, spotted salamander, marbled salamander, three-lined salamander, and common ribbonsnake (North Carolina Wildlife Resources Commission, 2005). “Several federally threatened or endangered species are found in mountain bogs, including the mountain sweet pitcher plant, green pitcher plant, bunched arrowhead, swamp pink, and North America’s tiniest turtle, the bog turtle.” (The Nature Conservancy, 2013)

Current Exemptions from permitting regulations

Certain activities are deemed to be in compliance with North Carolina’s wetland standards established in 15A NCAC 2B .0231. These activities can be found in 15A NCAC 2B .0230 (a) which states, “The following activities for which Section 404 permits are not required pursuant to Section 404(f)(1) of the Clean Water Act and which are not recaptured into the permitting process pursuant to Section 404(f)(2) are deemed to be in compliance with wetland standards in 15A NCAC 2B .0231 provided that they comply with the most current versions of the federal regulations to implement Section 404 (f) (U.S. Environmental Protection Agency and US Army Corps of Engineers, including 40 C.F.R. 232.3) and the Sedimentation Pollution Control Act, G.S. 113A, Article 4.”

In summary, items deemed to be in compliance include:

- normal, on-going silviculture, farming, and ranching activities (also known as the “agriculture exemption”);
- maintenance of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures;
- construction and maintenance of farm or stock ponds or irrigation ditches
- maintenance of drainage ditches;
- construction of temporary sediment control measures; and
- construction or maintenance of farm roads, forest roads, and temporary roads for moving mining equipment

Additional exemptions as they are related to isolated wetlands and waters are listed in 15A NCAC 2H .1301(e). According to this portion of the rule, the exemptions include:

(1) Activities that are described in 15A NCAC 02B .0230;
(2) Discharges to isolated, man-made ponds or isolated ditches except for those wetlands or waters constructed for compensatory mitigation or for on-site stormwater management;
(3) Discharges of treated effluent into isolated wetlands and isolated classified surface waters resulting from activities which receive NPDES Permits or State Non-Discharge Permits;

(4) Discharges for water dependent structures as defined in 15A NCAC 02B .0202(67);
(5) A discharge resulting from an activity if:
(A) The discharge resulting from the activity requires a 401 Certification and 404 Permit and these were issued prior to the effective date of this Rule;
(B) The project requires a state permit, such as landfills, NPDES discharges of treated effluent, Non-Discharge Permits, land application of residuals and road construction activities, that has begun construction or are under contract to begin construction and have received all required state permits prior to the effective date of this Rule;
(C) The project is being conducted by the N.C. Department of Transportation and they have completed 30% of the hydraulic design for the project prior to the effective date of this Rule; or
(D) The applicant has been authorized for a discharge into isolated wetlands or isolated waters for a project which has established a Vested Right under North Carolina law prior to the effective date of this Rule.

POINTS IN RESPONSE TO LEGISLATIVE INQUIRIES

I. How the term "Isolated wetland" has been previously defined in State law and whether the term should be clarified in order to provide greater certainty in identifying isolated wetlands.

The current rule,15A NCAC 2H .1301, does not define "isolated wetlands." It states, "This Section outlines the application and review procedures for permitting of discharges into isolated wetlands and isolated classified surface waters which have been listed in 15A NCAC 02B .0300. If the U.S. Army Corps of Engineers or its designee determines that a particular water or wetland is isolated and not regulated under Section 404 of the Clean Water Act, then discharges to that water or wetland shall be covered by this Section (15A NCAC 02H .1301 - .1305)."

S.L. 2014-120, Section 54(b)(3) states, "For purposes of Section 54(b) of this section, 'isolated wetlands' means a Basin Wetland or Bog as described in the North Carolina Wetland Assessment User Manual prepared by the North Carolina Wetland Functional Assessment Team, version 4.1 October, 2010, that are not jurisdictional wetlands under the federal Clean Water Act. An 'isolated wetland does not include an isolated man-made ditch or pond constructed for stormwater management purposes or any other man-made isolated pond."

If the intent of the session law definition is to establish new thresholds for written concurrence and new mitigation ratios for all isolated wetland types, then the proposed categorization of "isolated wetlands" as meaning a Basin Wetland or Bog as described in N.C. WAM could exclude isolated wetlands that may be classified as a different N.C. WAM wetland type [see Wetland Functional Assessment Team (WFAT) member comments in b. below].

If the intent is for the rule to apply only to Basin Wetlands or Bogs as described in N.C. WAM, it is important to determine and specify what course of action must be taken for proposed impacts to wetlands that are not 404 wetlands, Basin Wetlands, or Bogs (e.g. pocosins). This raises the question of whether the General Assembly intended to require a permit for non-federally regulated wetlands that are not Basin Wetlands or Bogs.

If the intent of defining the isolated wetlands as Basin Wetlands and Bogs was to define high quality isolated wetlands to be protected by the state, and limit regulatory oversight of low quality isolated wetlands, it is important to realize that wetlands of the same wetland type may vary in their quality and function. Use of a functional assessment rating like N.C. WAM may be necessary to capture these functional differences.

The N.C. WAM WFAT members and Corps' staff have not encountered isolated bogs. They have found all of the bogs to have connectivity or a significant nexus. In the N.C. WAM, bogs (along with non-tidal freshwater marsh, floodplain pool, headwater forest, riverine swamp forest, bottomland hardwood forest, estuarine/woody wetland, and tidal freshwater marsh) are classified as riparian wetlands. Salt/Brackish marshes and riparian wetlands would only be considered isolated as a result of a significant disturbance. The N.C. WAM keys out Basin Wetlands and Pocosins (sometimes) as being the wetland types that may be in isolated situations. The remaining N.C. WAM types (seep, hardwood flat, non-riverine swamp forest, pine savanna, and pine flat) are not associated with landscape positions considered to be riparian; therefore, they could conceivably be found in isolated situations (Personal Communication, 2014).

15A NCAC 2B .0202(71): "Wetlands are "waters" as defined by G.S. 143-212(6) and are areas that are inundated or saturated by an accumulation of surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands classified as waters of the state are restricted to waters of the United States as defined by 33 CFR 328.3 and 40 CFR 230.3" [excerpts of the text of 33 CFR 328.3 and 40 CFR 230.3 are provided in B. below]

N.C. Gen. Stat. §143-212(6): "'Waters' means any stream, river, brook, swamp, lake, sound, tidal estuary, bay, creek, reservoir, waterway, or other body or accumulation of water, whether surface or underground, public or private, or natural or artificial, that is contained in, flows through, or borders upon any portion of this State, including any portion of the Atlantic Ocean over which the state has jurisdiction."

U.S. Army Corps of Engineers Charleston Office Power Point presentation on Isolated Wetlands, September 21, 2011 (Darden, 2011): "Wetlands that are not contiguous, bordering or neighboring with respect to other Waters of the US are jurisdictionally 'isolated.'" "Isolated wetlands have NO chemical, physical, or biological connection (nexus) to Waters of the U.S. and have no connection to interstate or foreign commerce."

33 CFR 328.3/40 CFR 230.3: The term “waters of the United States” means

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

> (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
> (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
> (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

The current definition of wetlands as stated in S.L. 2014-120 is the only state or federal definition that uses a wetland classification or taxonomic key to define isolated wetlands. This current definition may lead to confusion as to whether a permit is available for non-qualifying wetlands, or to increased impact violations due to individuals impacting wetlands they feel do not need written concurrence. One of the difficulties in working with wetlands is the diversity within and among individual wetlands and wetland types. The lack of uniformity with wetlands makes it difficult to find situations that occur without exception. DWR recommends that instead of the definition of isolated wetlands being based on wetland taxonomy it could be based on the definable scientific parameters used to determine the presence of a wetland, especially

hydrology. In order to maintain consistency in definitions, three possible definitions are proposed below:

a. "'Isolated wetlands' means a wetland determined by the U.S. Army Corps of Engineers to have no chemical, physical, or biological connection (nexus) to Waters of the United States and have no connection to interstate or foreign commerce. An 'isolated wetland' does not include an isolated man-made ditch or pond constructed for stormwater management purposes or any other man-made isolated pond."

b. "Isolated wetlands are those waters which are inundated or saturated by an accumulation of surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions and under normal circumstances have no visible surface water connection to downstream waters of the state." Along with "Visible surface water connection may include but is not limited to a connection to other surface water via: continuous wetlands, intermittent or perennial streams; and ditches with intermittent or perennial flow."

c. It is suggested that the definition not use wetland classification as part of the definition since it is irrelevant to the Corps' narrative definition; however if it appears necessary than the definition should be broadened to state, "… 'isolated wetlands' means a Seep, Hardwood Flat, Non-Riverine Swamp Forest, Pocosin, Pine Savanna, Pine Flat, or Basin Wetland as described in the North Carolina Wetland Assessment User Manual prepared by the North Carolina Wetland Functional Assessment Team, version 4.1 October, 2010, that are not jurisdictional wetlands under the federal Clean Water Act. An "isolated wetland" does not include an isolated man-made ditch or pond constructed for stormwater management purposes or any other man-made isolated pond." in hopes of including all possible scenarios.

Definitions of Isolated Wetlands from Other Sources:

1. Dundee, Florida Code of Ordinance: An isolated wetland is "Any wetland that has no hydrological or vegetative connections with any water of the state as defined in F.S. § 327.02(28).
2. Indiana Department of Environmental Management: "Isolated wetlands (those wetlands not regulated under the federal Clean Water Act)"
3. Ralph Tiner 2003: "wetlands that are completely surrounded by upland"
4. Ohio EPA: "Isolated Wetlands are not connected to other surface waters." And Chapter 6111: Water Pollution Control definitions: "'Isolated wetland' means a

wetland that is not subject to regulation under the Federal Water Pollution Control Act."

5. Virginia Administrative Code §925-210-10 Definitions (2009) defines "isolated wetlands of minimal ecological value" as isolated wetlands less than one-tenth of an acre in size, not in a Federal Emergency Management Act floodplain, not identified by the Virginia Natural Heritage Program as a rare community, and not having state or federal threatened or endangered species. These wetlands may be filled (up to one-tenth of an acre) without permit application or regulatory review.

II. The surface area thresholds for the regulation of mountain bog isolated wetlands, including whether mountain bog isolated wetlands should have surface area regulatory thresholds different from other types of isolated wetlands.

Under the Isolated Wetland regulations (as amended by S.L. 2014-120), a permit is required if it is determined that sufficient existing uses are not removed or degraded for wetlands, west of I-95, that are less than or equal to one-third of an acre. Some of the mountain bogs will fall below this threshold level.

A. Under the 401 regulations, North Carolina Bogs do not currently have separate threshold levels for impacts triggering mitigation requirements.
B. The Corps does not have any specific regulations pertaining to Mountain Bogs. To date, the Corps has found all Mountain Bogs being considered for a 404 permit to be jurisdictional.
C. Mountain Bogs serve as habitat and breeding grounds for several threatened, endangered, or special concern species. These rules do not alter the thresholds for mountain bogs, but the two rules address the protection of threatened or endangered species that may inhabit the bogs.

1. 15A NCAC 2B .0110 addresses considerations for federally-listed threatened and endangered aquatic species and states,

> *"Certain waters provide habitat for federally-listed aquatic animal species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service under the provisions of the Endangered Species Act, 16 U.S.C. 1531-1544 and subsequent modifications. Maintenance and recovery of the water quality conditions required to sustain and recover federally-listed threatened and endangered aquatic animal species contributes to the support and maintenance of a balanced and indigenous community of aquatic organisms and thereby protects the biological integrity of the waters. The Division shall develop site-specific management strategies under the provisions of 15A*

NCAC 2B .0225 or 15A NCAC 2B .0227 for those waters. These plans shall be developed within the basinwide planning schedule with all plans completed at the end of each watershed's first complete five year cycle following adoption of this Rule. Nothing in this Rule shall prevent the Division from taking other actions within its authority to maintain and restore the quality of these waters."

2. 15A NCAC 2H .0506 (e) provides that wetlands may be protected for the purpose of protecting species that are listed as threatened or endangered, and states that,

> *"The Director shall issue a certification upon determining that significant existing uses are not removed or degraded by a discharge to wetlands of exceptional state or national ecological significance including but not limited to Class UWL wetlands, and wetlands that have been documented to the satisfaction of the Director as habitat essential for the conservation of state or federally listed threatened or endangered species, provided that the wetlands have been so classified or designated prior to the date of application for certification or a draft environmental impact statement has been submitted to the Director, for an activity which satisfies Subparagraphs (c)(2)-(5) and (d)(1)-(2) and:*
>
> *(1) the wetland impacts are necessary for the proposed project to meet a demonstrated public need; and*
>
> *(2) provides for replacement of existing uses through wetland mitigation under U.S. Army Corps of Engineers requirements, or as described in Subparagraphs (h)(1)-(7) and (10) of this Rule.*

The science suggests that Mountain Bogs are not isolated wetlands, and that 90 to 98 percent of them are estimated as having been eliminated. Therefore, while it is not necessary to seek additional protection for Mountain Bogs by establishing different impact threshold levels in the Isolated Wetland Rules, additional protection could be provided under the auspices of the existing Outstanding Resource Waters (ORW) in 15A NCAC 2B .0225, if this is desired.

III. Whether impacts to isolated wetlands should be combined with the project impacts to jurisdictional wetlands or streams for the purpose of determining when impact thresholds that trigger a mitigation requirement are met.

After the ruling in the SWANCC case, the isolated wetland rules were developed to provide a permitting process for applicants to seek approval to impact isolated wetlands that were previously permitted as part of the 401 process but are no longer under federal jurisdiction. In order to make the process as simple as possible, the same method for application was proposed for isolated wetlands as existed for all other wetlands. The Pre-Construction Notification (PCN) and compensatory mitigation requirements were established to be the same as they were previously.

Under the isolated wetland rules 15A NCAC 2H .1302 (a)(4) “The application shall specify: the nature of the discharge including cumulative impacts to isolated and non-isolated wetlands…”

Under the isolated wetland rules 15A NCAC 2H .1305 (g)(6), mitigation shall be reviewed such that, “For all discharges resulting from activities which impact, in total, more than one acre of isolated and other wetlands, the mitigation ratio shall be…”

The Isolated Wetlands General Permit (IWGP100000) (10) Compensatory Mitigation states, *“In accordance with 15A NCAC 2H .1305 (c) and (d), compensatory mitigation may be required for losses of equal to or greater than 150 linear feet of streams (intermittent and perennial) and/or equal to or greater than one (1) acre of total wetland impacts, including all impacts to 404 and non-404 wetlands (see examples in “Attachment B” at the end of this Permit). If collective wetland impacts, including 404 and non-404 wetlands, are equal to or greater than one (1) acre, compensatory mitigation is required.*

As demonstrated in one of the examples, provided within the General Permit, IWGP100000 requires mitigation if the cumulative impact to 404 (0.95 acres) and isolated/non-404 wetlands (0.08 acres, which is below the threshold for needing written concurrence) is greater than one acre, even if written concurrence is not needed for impacts to the isolated/non-404 wetlands.

Under the Water Quality Certification Rules 15A NCAC 2H .0506 (c)(4): certification shall be issued if sufficient existing uses are not removed or degraded and the activity “does not result in cumulative impacts, based upon past or reasonably anticipated future impacts, that cause or will cause a violation of downstream water quality standards;”

Removal of waters of the State, whether regulated by an isolated waters permit or 401 certification, results in removal of the functional value or designated uses of those waters. The goal of compensatory mitigation is to replace the functions lost when a system is impacted. When impacts are made to a site it is important to assess the cumulative effect of those impacts.

1. Removal of 0.98 acres of functioning isolated wetlands and 0.98 acres of functioning 404 wetlands is removing 1.96 acres of functioning wetlands whose functions (water quality, flood retention, soil retention, etc.) need to be mitigated for or replaced. Assessing the impacts of the components independently, does not accurately depict the water quality or other functional benefits that are being lost with removal of the wetlands.

The goal of compensatory mitigation is to replace the functions lost due to the impacts to wetlands in order to protect the surface and groundwater resources for the community. The most likely measure for protecting and managing the water resources is to combine all of the approved impacts, isolated and 404 jurisdictional, to determine the amount of mitigation required if the one acre mitigation threshold is met.

REFERENCES

Rules and Regulations

33 CFR 328.3

40 CFR 230.3

Florida F.S. § 327.02(28)

North Carolina G.S. 143-212(6)

North Carolina Senate Bill 734

15A NCAC 2B

15A NCAC 2H

Website Links

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https://www.dnr.sc.gov/marine/NERR/present/isolatedwetlands/USACOEIsolatedWetlandsJurisdiction.pdf

Indiana Department of Environmental Management
http://www.in.gov/idem/wetlands/2343.htm

Ohio EPA
http://www.epa.ohio.gov/dsw/401/permitting.aspx

RAPANOS v. UNITED STATES (Nos. 04-1034 and 04-1384) No. 04–1034, 376 F. 3d 629, and No. 04–1384, 391 F. 3d 704, vacated and remanded.
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LIST OF ABBREVIATIONS

Abbreviation	Description
BIMS	Basinwide Information Management System
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
EPA	Environmental Protection Agency
IWGP100000	State General Permit for Impacts to Isolated and Other Non-404 Wetlands and Waters
J.D.	US Army Corps of Engineers Jurisdictional Determination
N.C. DENR	North Carolina Department of Environment and Natural Resources
N.C. DWR	North Carolina Division of Water Resources
N.C. WAM	North Carolina Wetland Assessment Method
N.C. NHP	North Carolina Natural Heritage Program
NPDES	National Pollutant Discharge Elimination System
ORW	Outstanding Resource Waters
PCN	Pre-Construction Notification
Rapanos	Case of Rapanos et. al. v. United States
SEIWA	Southeast Isolated Wetlands Assessment
SWANCC	Case of Solid Waste Agency of Cook County v. US Army Corps of Engineers
TNC	The Nature Conservancy
UNC	University of North Carolina
US FWS	United States Fish and Wildlife Service
UWL	Unique Wetlands
WFAT	Wetland Functional Assessment Team