THE IMPACT OF SWANCC ON FEDERAL CLEAN WATER ACT JURISDICTION

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The U.S. Supreme Court in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*[1] invalidated the ''Migratory Bird Rule'' that had been used for establishing federal jurisdiction over isolated waters and wetlands.

The case originated when the Solid Waste Agency of Northern Cook County began an effort to locate and develop a site for the disposal of baled non-hazardous solid waste.[2] The site selected was an abandoned sand and gravel pit that eventually was transformed by nature to a forest with a series of ponds, some permanent and some seasonal of varying depths. At first the Corps did not assert jurisdiction over the waters because they were not wetlands. However, environmentalists urged the Corps to assert jurisdiction based on the presence of migratory birds. Solid Waste Agency filed a suit contesting both the denial of a Section 404 permit and the Corps' jurisdiction over the waters in question. At issue was the validity of the ''Migratory Bird Rule'' that was used to establish federal jurisdiction over isolated waters or wetlands.

The federal government has long asserted its jurisdiction over traditional navigable waters under its power to regulate interstate commerce.[3] The original regulation of navigable waters was for the purpose of facilitating navigation. Eventually concern about the pollution in our nation's waters became important, leading to the passage of the Clean Water Act (CWA). The Court noted that,

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[1]531 U.S. 159 (2001).

[2]*Id.*

[3]The Daniel Ball, 77 U.S. 577 (1870).

''Congress passed the CWA for the purpose of 'restoring and maintaining the chemical, physical, and biological integrity of our nation's waters.' ''[4] Earlier in *United States v. Riverside Bayview Homes, Inc.*[5] the Supreme Court had upheld federal jurisdiction over wetlands adjacent to navigable waters. The problem in *SWANCC* was that the waters in question were isolated from navigable waters. Jurisdiction was based on 33 C.F.R. § 328.3(a)(3) which provides:

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

This regulation was clarified by the ''Migratory Bird Rule'' which was issued by the Corps in 1986 and is found at 51 Fed. Reg. 41217 and provides as follows:

> a. Which are or would be used as habitat by birds protected by Migratory Bird Treaties; or
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> b. Which are or would be used as habitat by other migratory birds which cross state lines; or
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> c. Which are or would be used as habitat for endangered species; or
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> d. Used to irrigate crops sold in interstate commerce.

SWANCC[6] is a Supreme Court decision which limits federal power and represents another step in reserving it for the states. While the case was decided on statutory grounds, the majority opinion indicates serious constitutional problems exist if the statute is interpreted as giving the federal government power over isolated waters. The majority opinion questions the relationship between interstate commerce and isolated waters and wetlands. The court fails

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[4]Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001).

[5]474 U.S. 121 (1985).

[6]Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001).

to see the environment as an interconnected system, and instead divides it into small parts that are beyond federal regulation under the Commerce Clause of the United States Constitution.[7]

Even though the Court in *SWANCC* invalidated the ''Migratory Bird Rule,'' the validity of 33 C.F.R. § 328.3(a)(3) is still in question. Can this section be used for establishing federal jurisdiction over isolated waters so long as no reliance is placed on whether or not migratory birds use the area in question? An examination of U.S. District Court and Court of Appeals cases is the best way to learn the impact of the decision. Also left in question is the extent to which Congress can change the CWA without creating constitutional problems. The Supreme Court could hold that isolated waters do not have enough connection to interstate commerce to be regulated by the federal government.

Different patterns of interpretation are being established by various lower federal courts.[8] Some courts are giving the decision limited application by relying on a surface connection to navigable waters even if the surface connection is indirect. Other courts refuse to allow jurisdiction based on a surface connection. If the wetland is adjacent to navigable water, jurisdiction is allowed; however, some courts reject jurisdiction over wetlands adjacent to non-navigable tributaries of navigable waters. Wetlands that are isolated in that they are neither adjacent to navigable waters, tributaries, or have a hydrological connection to navigable waters are no longer subject to federal jurisdiction.

I. ISOLATED WATERS WITHOUT A SURFACE CONNECTION

Before examining cases where an actual connection exists between the isolated waters and traditional navigable waters, it is helpful to examine those cases where the water or wetland is considered isolated. In *San Francisco Baykeeper v. Cargill Salt Division*[9] the United States Court of Appeals vacated the judgment of the trial court because jurisdiction was based on the ''Migratory Bird Rule.'' The court remanded the case to the trial court to determine if jurisdiction could be established without relying on the ''Migratory Bird Rule.''

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[7]U.S. Const. art. I, § 8.

[8]FD&P Enterprises v. United States Army Corps of Engineers, 239 F. Supp. 2d 509 (D.N.J. 2003).

[9]263 F.3d 963 (9th Cir. 2001).

Jurisdiction over a vernal pool was lost as a result of *SWANCC* in *Borden Ranch.*[10] Both vernal ponds and swales were at issue in the case. ''Swales are sloped wetlands that allow for the movement of aquatic plant and animal life, and that filter water flows and minimize erosion.''[11] In order to make the land suitable for farming, the restrictive top layer of soil needs to be penetrated by a process called ''deep ripping'' in which four to seven foot long metal prongs are dragged through the soil behind a tractor or bulldozer. Deep ripping in wetlands requires a permit under the Clean Water Act because it ''destroys the hydrological integrity of . . . wetlands.''[12] The jurisdiction over the swale was unchanged by *SWANCC*, because the court relied on the existence of a surface connection between the swale and waters of the United States. The discussion in the case revolved around whether deep ripping constituted a discharge of a pollutant requiring a permit; however, the court noted jurisdiction over ''wetlands adjacent to navigable waters.''[13] The case is important because the court held that the vernal pool without a surface connection to traditional navigable waters was deemed ''isolated'' and thus, fell outside federal jurisdiction for purposes of regulation.

In a court of claims takings case the court ruled that if the wetlands were isolated, the federal government had no power to regulate them.[14] Therefore, the plaintiff would be free to use his land as he intended, and no taking would occur except for the costs of converting some of the land back to wetlands under the original consent decree. Because it was unclear from the factual record, the court remanded the case for a determination of the existence of a nexus between the wetlands in question and an interstate water.

In *Rice v. Harken,*[15] the Fifth Circuit gave *SWANCC* what may be its broadest application. Just how much of the holding is based on the underlying fact situation and how much is based on a broad application of *SWANCC* is unclear. The case involved a private action brought under the Oil Pollution Act (OPA) for discharges of oil that resulted from oil production activities of Harken Exploration

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[10]Borden Ranch Partnership v. U.S. Army Corps of Engineers, 261 F.3d 810 (9th Cir. 2001).

[11]*Id.* at 812.

[12]*Id.* at 813.

[13]*Id.* at 814.

[14]Brace v. United States, 51 Fed. Cl. 649 (2002).

[15]250 F.3d 264 (5th Cir. 2001).

Company. The oil was discharged onto dry land and reached the groundwater. The court noted that the OPA was passed in response to the Exxon Valdez oil spill in Prince William Sound, Alaska. The court also noted that the language designating waters in the OPA was the same as in the CWA. Therefore, the definition of waters was the same in both acts. The court accepted the District Court's reluctance to apply the OPA on dry land in the Texas Panhandle. The court held that groundwater was not protected under the CWA and therefore not protected under the OPA. No strong evidence of a hydrological connection to clearly navigable waters was introduced. If such evidence had been presented, it is possible that the result would have been different. It is also possible that with the facts in this case that it would have been decided the same way under pre *SWANCC* law.

II. JURISDICTION REJECTED IN SPITE OF A SURFACE CONNECTION TO NAVIGABLE WATER

In *Rapanos v. United States*[16] the United States Supreme Court granted certiorari, vacated the judgment, and remanded the case for consideration in light of *SWANCC.* The case involved a criminal conviction for filling in a wetland without a permit. On remand the district court examined jurisdiction after SWANCC, and dismissed the case.[17] The court noted that a hydrological connection to traditional navigable waters was not expressly found in fact.[18] The court also found that a new trial on the issue was not needed because it rejected jurisdiction based on a surface hydrological connection to navigable waters.[19] The United States Court of Appeals for the Sixth Circuit reversed and reinstated Rapanos conviction.[20] The court relied on a surface connection between the wetland and navigable waters. The court of appeals relied on the reasoning in *Deaton* to support its decision.[21] The status of the next two cases in this section is uncertain but they are important because they illustrate how some courts reject jurisdiction based on a surface connection to navigable water.

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[16]533 U.S. 913 (2001).

[17]United States v. Rapanos, 190 F. Supp. 2d 1011 (E.D. Mich. 2002).

[18]*Id.* at 1014.

[19]*Id.*

[20]United States v. Rapanos, 2003 U.S. App. LEXIS 15600 (6th Cir. 2003).

[21]*Id.* at ¶ 13-14.

The court in *FD&P*[22] notes the split in the courts on the interpretation of *SWANCC*. One line of cases treats *SWANCC* as a broad limitation of CWA jurisdiction that removes jurisdiction from all water that is not navigable or directly adjacent to navigable water.[23] The other line of cases ''would permit continued CWA jurisdiction over all waters which have at least a minimal hydrological connection to navigable waters.''[24] After examining the two lines of cases the court refused to allow jurisdiction based on a surface hydrological connection between an ''isolated'' wetland and navigable water. The court however refused to grant a summary judgment based on its rejection of jurisdiction based on a hydrological connection to navigable water, because there was not enough evidence to determine whether or not a substantial nexus existed between the wetland in question and navigable waters. If it could be shown that ''filling of the wetlands will have a substantial injurious impact upon the chemical, physical, and /or biological integrity of the Hackensack River''[25] a substantial nexus would exist between the wetland in question and navigable water.

Another case rejecting jurisdiction based on a surface hydrological connection between a wetland and in fact navigable waters is *United States v. RGM Corporation.*[26] The court notes the considerable scientific evidence that isolated wetlands are important but considers it unimportant for the purpose of jurisdiction.[27] The court notes that Congress has not amended the CWA to incorporate the Corps' regulations; however, the court does not account for the fact that if Congress disagreed with the regulations it could pass legislation indicating the regulations extended jurisdiction beyond its intention.[28]

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[22]FD&P Enterprises v. United States Army Corps of Engineers, 239 F. Supp. 2d 509 (D. N.J. 2003).

[23]*Id.* at 513.

[24]*Id.*

[25]*Id.* at 517.

[26]222 F. Supp. 2d 780 (E.D. V.I. 2002).

[27]*Id.* at 785.

[28]*Id.*

III. JURISDICTION OF ISOLATED WATER ESTABLISHED BY COMMERCIAL ACTIVITY

Even isolated waters can have sufficient commercial activity to subject them to CWA jurisdiction. Bobby Joe Colvin attempted to have his conviction set aside in *Colvin v. United States*.[29] He was convicted of discharging pollutants into the navigable waters of the United States without a permit. His conviction was for dumping 5.4 million pounds of screw press rejects (waste) on the shoreline of the Salton Sea. Colvin was convicted before the Supreme Court decided *SWANCC.* Placing the waste on the shoreline of the Salton Sea was a discharge into the water of the lake because the waste washed into it. In the original trial, jurisdiction was based on both the use of the Salton Sea by interstate or foreign travelers and its use as habitat for migratory birds. Defendant was trying to get his conviction reversed because of the reliance on the ''Migratory Bird Rule.'' Defendant was unsuccessful because sufficient other economic use of the Salton Sea justified federal jurisdiction. Salton Sea was used by interstate and foreign tourists for recreation. Recreational activity included fishing, hunting and boating. The lack of merit in the defendant's argument is obvious when the size and significance of the Salton Sea is taken into consideration. The Salton Sea is actually a lake that occupies a desert basin in California.[30] It has a surface area of 376 square miles, a maximum depth of 51 feet, and ebbs and flows with its own tide.[31] It has a salinity level greater than the Pacific Ocean and supports an abundance of fish and wildlife. This case is important because it illustrates that a body of water can have enough economic significance on its own for federal jurisdiction to exist without showing the existence of a physical surface connection to traditional navigable waters.

IV. JURISDICTION ESTABLISHED BY A SURFACE CONNECTION TO NAVIGABLE WATER

Loss of CWA jurisdiction, based on the migratory bird rule, certainly makes it more difficult for the federal government to protect our waters from pollution; however, other ways of obtaining jurisdiction still exist. If a surface connection can be established between the water in question and traditional navigable waters, Clean

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[29]181 F. Supp. 2d 1050 (C.D. Ca. 2002).

[30]http://www.saltonsea.ca.gov/thesa.htm (Sept. 6, 2002).

[31]*Id.*

Water Act jurisdiction exists. One of the most interesting cases relying on a surface connection is *Headwaters*[32] involving the discharge of an aquatic herbicide in irrigation canals by the Talent Irrigation District to control the growth of weeds in its irrigation canals. The day after the application of the herbicide, a fish kill occurred in Bear Creek downstream from a leaking waste gate. The surface connection into Bear Creek made the canals ''waters of the United States,'' subjecting the irrigation district to liability for discharging a pollutant without a permit. The fact that the pesticide was subject to regulation under Federal Insecticide, Fungicide, and Rodenticide Act did not affect the need for a permit. The surface connection was sufficient to establish jurisdiction under the CWA.

A concentrated animal feeding operation fell under CWA jurisdiction in *Idaho Rural Council v. Bosma*[33] because its discharges reached navigable waters through both surface and groundwater connections. Discharges included wastewater, polluted irrigation water, dead animals, dairy waste, pharmaceutical materials, manure, and other pollutants. This occurred as part of a large dairy operation. The case involved a citizen suit by Idaho Rural Council for violations of Bosma's NPDES permit that was only obtained after Bosma received the 60 day pre-suit notice. The discharges into waters that had a surface connection to navigable waters ensured CWA jurisdiction. The court went on to note the split in the circuits over the issue of CWA jurisdiction for discharges into groundwater that ultimately reach navigable waters. The court went on to hold that groundwater with a hydrological connection to ''waters that are themselves waters of the United States''[34] are subject to CWA jurisdiction. The court also noted that groundwater without a hydrological connection to waters of the United States is not subject to CWA jurisdiction.

A similar case is *Community Association v. Henry Bosma*[35] involving a concentrated animal feeding operation in the State of Washington. In this case discharges of pollutants were into a canal that eventually flowed into the Yakima River. The Yakima River is clearly within the jurisdiction of the federal government as ''waters

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[32]Headwaters, Inc. v. Talent Irrigation Dist., 243 F.2d 526 (9th Cir. 2001).

[33]143 F. Supp. 2d 1169 (D. Idaho 2001).

[34]*Id.* at 1180.

[35]Community Association for Restoration of the Environment v. Henry Bosma Dairy, 305 F.3d 943 (9th Cir. 2002).

of the United States.''[36] A surface connection to traditional navigable waters even if indirect and intermittent will give the federal government jurisdiction over the water in question or in this case a discharge into a canal.[37]

In *United States v. Lamplighter Equestrian Center*[38] an intermittent surface connection to waters of the United States was sufficient to establish CWA jurisdiction. The case involved the discharge of fill ''onto its wetlands to construct a pathway for horses without a permit from the Corps.''[39] The court discussed the issue of how far *SWANCC* limited federal jurisdiction over waters or wetlands. The court concluded that SWANCC only invalidated the ''Migratory Bird Rule'' and did not affect other ways of obtaining federal jurisdiction under the CWA. Unlike *SWANCC* the wetlands in question were not isolated from other navigable waters but were ultimately connected to such waters. The court held that:

> Water need not flow in an unbroken line at all times to constitute a sufficient connection to a navigable water or its tributaries; as recognized by other courts, intermittent flow of the type Lamplighter has acknowledged can be sufficient to establish Corps' jurisdiction.[40]

The court then pointed out quoting from *Headwaters* that '' 'even tributaries that flow intermittently are waters of the United States.' ''[41] If a surface connection can be established between the waters in question and traditional navigable waters then they are subject to CWA jurisdiction.

Wetlands adjacent to a tributary of navigable waters are subject to CWA jurisdiction. In *Buday*[42] defendant pleaded guilty to violating the CWA just hours before *SWANCC* was decided by the Supreme Court. As part of a construction project, Buday dug ponds near Fred Burr Creek and '' 'used the material to create berms' at the Mountain Valley subdivision site.''[43] ''Wetlands lie on either

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[36] *Id.* at 954.

[37] *Id.* at 955.

[38] 2002 U.S. Dist. LEXIS 3694 (N.E.D. Il. 2002).

[39] *Id.* at ¶ 11.

[40] *Id.* at ¶ 22-23.

[41] *Id.* at ¶ 23.

[42] United States v. Buday, 138 F. Supp. 2d 1282 (D. Mont. 2001).

[43] *Id.* at 1284.

side of the creek''[44] in the area subject to controversy. The court was confronted with the issue of whether wetlands adjacent to a tributary of navigable waters are still subject to CWA jurisdiction after *SWANCC.* The court concluded the wetlands were subject to CWA jurisdiction and denied defendant's motion to withdraw his guilty plea. The court distinguished Fred Burr Creek from isolated waters in *SWANCC* that had no surface or hydrological connection to navigable in fact waters. Water that flows down Fred Burr Creek eventually reaches waters that are clearly navigable. Therefore a pollutant discharged into Fred Burr Creek can eventually reach in fact navigable water. It is this ultimate connection to navigable waters that made wetlands adjacent to the creek subject to federal jurisdiction.

In *United States v. Interstate General Co.*[45] the court refused to modify a plea bargain and consent decree with Interstate General Company. In an earlier case, before the Supreme Court decided *SWANCC,* the Fourth Circuit Court of Appeals had invalidated the entire 33 C.F.R. § 328.3(a)(3) code section granting federal jurisdiction over isolated waters.[46] Subsequently the federal government brought a new action, under different sections, that was settled with a plea bargain and a consent decree.[47] It is this settlement that is under attack by Interstate General Company claiming lack of jurisdiction as a result of the *SWANCC* decision. In the new prosecution, the government asserted jurisdiction over wetlands because they were '' 'adjacent to the headwaters' of two non-navigable creeks.''[48] The court took the view that *SWANCC* invalidated the ''Migratory Bird Rule'' and 33 C.F.R. § 328.3(a)(3) rather than just the ''Migratory Bird Rule.'' Even this interpretation of *SWANCC* did not affect jurisdiction based on the fact that the wetlands were adjacent to the headwaters of a stream that eventually flows into navigable waters.

The Fourth Circuit Court of Appeals held in *Deaton*[49] that sidecasting in a wetland adjacent to a roadside ditch was within federal jurisdiction, because pollutants discharged into the wetland could ultimately reach traditional navigable waters. Since the ditch was a

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[44] *Id.*

[45] United States v. Interstate General Co., 152 F. Supp. 843 (D. Md. 2001).

[46] United States v. Wilson, 133 F. 3d. 251 (4th Cir. 1997).

[47] United States v. Interstate General Co., 152 F. Supp.2d 843 (D. Md. 2001).

[48] *Id.*

[49] United States v. Deaton, 2003 U.S. App. LEXIS 11642 (4th Cir. 2003).

tributary of the Wicomico River, a traditional navigable water, the Corps asserted jurisdiction. The Deatons discharged dirt into the wetland when they hired a contractor to dig a ditch to drain the wetland and the contractor deposited the dirt into the wetland next to the ditch (sidecasting). The court examined the constitutional question of whether the corps assertion of jurisdiction exceeded federal power under the Commerce Clause.[50] The court treated traditional navigable waters as channels of interstate commerce and noted that federal power to regulate channels of interstate commerce was much broader than its power to regulate activities that impact interstate commerce. The court continued that the:

> power over navigable waters also carried with it the authority to regulate non-navigable waters when that regulation is necessary to achieve Congressional goals in protecting navigable waters . . . Any pollutant or fill material that degrades water quality in a tributary of navigable waters has the potential to move downstream and degrade the quality of the navigable waters themselves.[51]

The court in *Deaton* is taking the point of view that the discharge of any pollutant into wetlands adjacent to tributaries ultimately impacts traditional navigable waters that are clearly within the power of the federal government to regulate. The court then examined whether a ditch that eventually allowed water to flow to traditional navigable waters was a tributary and concluded that it was. Again the court placed emphasis on the ultimate impact on water quality of traditional navigable waters.

V. BIOLOGICAL OR ECOLOGICAL CONNECTION

In order to gain a better understanding of the problem of the loss of federal jurisdiction over so called isolated waters or wetlands it is useful to examine some of the scientific evidence. This evidence indicates that the term isolated as used in SWANCC is a misnomer, because these waters or wetlands are in fact, if not legally, connected biologically and ecologically.

Conservation biologists have long recognized the importance of spatial integration on seemingly distinct biological populations. Landscape-scale integration (separate areas where certain species migrate between areas) results in larger ''metapopulations''

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[50] *Id.* at ¶ 14.

[51] *Id.* at ¶ 19.

(population made up of individuals from different areas), comprised of source (a sub-population that produces individuals who may migrate to other areas) and sink (a population with an overall negative growth rate; it must receive individuals for other areas in order to persist) compartments which ensure persistence of a given species across regional habitats, despite temporal fluctuations in local population size and occasional local extinctions. Large-scale habitat fragmentation, resulting from destruction or degradation of geographically and hydrologically isolated wetlands, can lead to loss of metapopulations of wetland species.

One particularly widespread type of isolated wetlands are Carolina Bays of the Atlantic U.S. Coastal Plain. Investigations of a subset of Carolina Bays at the Department of Energy's Savannah River Site in Georgia revealed substantial importance of isolated wetlands in maintenance of fish and amphibian populations. Most of these wetlands are small in size (70% are $<$2.0 ha) (1 ha = 2.47 acres) and relatively densely scattered across the landscape (distances of ~600m between the smallest Carolina Bays ($<$2 ha) and the nearest wetland of any size). Amphibian surveys of the bays indicated that the smallest wetlands harbored the highest diversity of species (21 species per wetland $\leq$1.1ha) and documented an average of more than 13,000 juveniles produced per breeding season in one particularly diverse bay.[52] It was further noted that many amphibians using these wetlands migrate distances of 1.5km and frequently return only to their natal sites for breeding. Similarly, it was found that Carolina Bays inhabited by fish were located nearer neighboring wetlands than those ponds lacking fish or with less diverse species assemblages.[53] Additionally, two of the most common fish species were found in closer proximity to other isolated wetlands than to larger, more permanent wetlands or to stream channels. Larger, better connected wetlands tend to harbor a greater diversity of predators, thereby reducing the diversity of smaller fish or amphibians through consumption of larval stages. Thus, isolated wetlands tend to be important for breeding and maturation of prey species, and thereby usually function as sources in metapopulation interactions, particularly for amphibians.

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[52]Semlitsch, R. D. and J. R. Bodie, *Are Small, Isolated Wetlands Expendable*? Conservation Biology 12:1129 to 12:1133. (1998).

[53]Snodgrass, J.W., A.L. Bryan, Jr., R. F. Lide. and G. M. Smith, *Factors Affecting the Occurrence and Structure of Fish Assemblages in Isolated Wetlands of the Upper Coastal Plain, U.S.A.*, Canadian Journal of Fisheries and Aquatic Science 53:443 to 53:454 (1996).

Although the ''Migratory Bird Rule'' was invalidated in *SWANCC,* the fact remains that migratory waterfowl and wading birds can be affected substantially by regional distribution of wetlands, regardless of those areas' degree of connectance to navigable waters. Human-caused loss of wetlands, combined with climatic shifts in some regions, has resulted in marked changes in migratory routes of waterfowl and decreased biological carrying capacity of remaining wetlands.[54] It is estimated that a loss of all wetlands less than 0.5 ha from the prairie pothole region (a highly productive migratory waterfowl breeding ground in the northern plains of North America) could result in a 20% loss in suitable habitat for some species because of the birds' dependence upon a diversity of wetland habitat at the landscape scale.[55] Additionally, migratory water birds are believed to transport resting propagules (seeds and diapausing eggs) of aquatic plants and animals that may function in the persistence of regional metapopulations of numerous aquatic organisms.[56] Thus, wetland loss may lead indirectly to declines in biological diversity through its direct reduction of dispersal mechanisms between source and sink populations.

It has also been found that isolated wetlands, such as those in the prairie pothole region of the United States, may become temporarily connected through surface hydrology (flooding and overflow) at temporal scales (scales of time) and with such variability that connectance may be indiscernible by infrequent surveys, such as might occur in conjunction with environmental impact assessments. The northern prairies are subject to a 29-year wet-dry cycle, with many pothole wetlands connected only during the wettest portions of the cycle. In 1996, for example, it was found that 28% of North Dakota potholes possessed temporary surface linkages to at least one other wetland, and one complex was found with 14 interconnected ponds.[57] Despite knowledge of the climatic cycle of these wetlands, prediction of sites that would be connected periodically is unlikely at present because of continued wetland drainage that has altered

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[54]Amezaga, J.M., L Santamaria, and A.J. Green, *Biotic Wetland Connectivity-Supporting a New Approach for Wetland Policy,* Acta Oecologica 23:213 to 23:222 (2002).

[55]Naugle, D. E., R.R. Johnson, M.E. Estey, and K.F. Higgins., *A Landscape Approach to Conserving Wetland Bird Habitat in the Prairie Pothole Region of Eastern South Dakota,* Wetlands 20:588 to 20:604 (2000).

[56]Amezaga, *supra* note 52.

[57]S. G. Leibowitz and K.C. Vining, *Temporal connectivity in a Prairie Pothole Complex.* Wetlands 23:13 to 23:25 (2003).

large-scale, short-term hydrologic regimes (patterns of water flow over and through the soil as they vary through time) in the region. Thus, conservationists urge a perspective of erring on the side of caution in regulating these wetlands, and some states have begun to enact legislation to further restrict the degradation of wetland systems. One such example is the designation in Maine of ''Significant Vernal Pools:'' temporally isolated wetlands to be included under protective measures of the Maine Natural Resources Protection Act.[58]

Aside from their ecological importance within a region, isolated wetlands can have marked impacts on hydrologic and water quality functions of considerable importance to humans. It has been estimated that a single hectare of wetland can hold 9.5 to 14 million liters (2.5 to 3.7 million gallons) of floodwater, making intact wetlands extremely important in areas prone to frequent flooding.[59] For example, North Dakota prairie pothole depressions were capable of storing more than 40% of storm runoff from storms of 100-year severity.[60] The high water storage capacity of such wetlands is in part the result of their lack of surface inlets or outlets for flowing water, the same feature that results in their classification as ''isolated wetlands.'' The absence of a surface outlet also means that water is held longer within isolated wetlands, a feature that can result in their providing a substantial role in subterranean aquifer recharge. Playa lakes in the southern plains of the U.S. (NM, OK, TX) are a form of isolated wetland caused by wind scouring of surface soils. These wetlands have been estimated to provide more than half the groundwater recharge of the Ogallala aquifer, the major aquifer used for water supplies of the southern high plains, whereas areas between playas contribute negligibly to aquifer recharge.[61]

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[58]A. J. K. Calhoun, T.E. Walls, S.S. Stockwell, and M. McCollough., *Evaluating Vernal Pools as a Basis for Conservation Strategies: A Maine Case Study.* Wetlands 23:70 to 23:81 (2003).

[59]US Environmental Protection Agency. Functions and Values of Wetlands. US EPA Office of Wetlands, Oceans, and Watersheds Factsheet, EPA 843-F-01-002c (2002).

[60]R. W. Tiner, H. C. Bergquist, G. P. DeAlessio, and M. J. Starr. *Geographically Isolated Wetlands: A Preliminary Assessment of their Characteristics and Status in Selected Areas of the United States.* U.S. Department of the Interior, Fish and Wildlife Service, Northeastern Region, Hadley, MA. (2002).

[61]B. R. Scanlon, R. S. Goldsmith, S. D. Hovorka, W. F. Mullican, III, and Jiannan Xiang, *Evidence for Focused Recharge Beneath Playas in the*

The slow seepage of waters from isolated wetlands also increases their utility in water quality improvement. Speed of water flow through wetlands is known to be a critical determinant to the rate of contaminant removal; for example, flow rates are closely monitored in wetlands designed for wastewater treatment to ensure adequate removal of pollutants before effluent discharge.[62] Most efficient removal of potential contaminants results from a combination of low pollutant concentrations and slow movements of waters through the wetland. However, water quality improvement depends not only on rates of water and dissolved contaminant movement into and through wetlands, but on the ecological health of the wetland, as well. The process of freshwater purification depends greatly on the diversity of plants and microbes present in the wetland, which, as indicated above, is dependent upon adequate rates of dispersal of organisms among ecologically interconnected albeit spatially isolated wetland ecosystems.

Characteristics of a healthy wetland that facilitate water quality improvement include: (1) low topographic gradients and slow velocities, which enhance settling of materials out of the water, (2) high microorganismal diversity, which provides for decomposition and conversion of pollutants into less harmful forms, (3) highly productive plant assemblages, which permit rapid rates of uptake of certain contaminants, and (4) accumulation of non-decomposed organic material within the bottom sediments, which facilitates permanent burial of certain pollutants.[63] For instance, the Congaree Bottomland Hardwood Swamp in South Carolina (the largest intact old-growth forested wetland in the United States), annually contributes the equivalent of a $5 million wastewater treatment facility to the Congaree River watershed.[64]

Southern High Plains, Texas. In: L. V. Urban and A. Wyatt, Editors, Proceedings of the Playa Basin Symposium, pp. 87-96 (http://www.lib.ttu.edu/playa/text94/toc.htm). W. W. Wood and W. E. Sanford, *Recharge to the Ogallala: 60 Years after C. V. Theis's Analysis.* In: L. V. Urban and A. W. Wyatt, eds., Proceedings of the Playa Basin Symposium, pp. 23-24 (1994) (http://www.lib.ttu.edu/playa/text94/toc.htm).

[62]W. J. MITSCH AND J. G. GOSSELINK, WETLANDS at 703-710 (3rd ed. John Wiley and Sons, New York 2000).

[63]W. J. MITSCH AND J.G. GOSSELINK, WETLANDS (3rd ed. John Wiley and Sons, New York 2000).

[64]W. S. Sipple, Wetland Functions and Values. US EPA Office of Water, Watershed Academy Web Module, (http://www.epa.gov/watertrain/wetlands/index.htm).

VI. LEGISLATIVE AND ADMINISTRATIVE CHANGES

Legislation entitled the ''Clean Water Authority Restoration Act of 2003''[65] has been introduced in both houses of Congress. The proposed legislation seeks to restore federal jurisdiction over so called isolated waters to what it was before *SWANCC.* The bill contains a lengthy finding of fact stating that so called isolated waters are really not isolated but are connected to an ecological system and should be regulated to accomplish the goals of the CWA. The findings note that regulation of discharges into isolated waters is part of a comprehensive clean water regulatory program. The proposed legislation removes the term navigable from the definition of waters of the United States and makes it clear that the act extends to all waters of the United States to the extent possible under the Constitution. The proposed amendment also makes waters covered by 33 C.F.R. § 328.3(a)(3) part of the statutory definition of waters of the United States. Whether Congress will pass this legislation and whether the President would sign it is uncertain. Should the legislation pass the issue of ''isolated'' waters is no longer a question of legislative interpretation but a constitutional issue. Should this issue reach the current Supreme Court it is possible that it would be held unconstitutional, because the Court may take a narrow view of Congress's power to regulate under the commerce clause.[66]

In January 2003 the U.S. Army Corps of Engineers issue an advanced notice of proposed rulemaking on changing the rules for jurisdiction over ''Waters of the United States.''[67] At this time the final decision on rulemaking is unknown. The best information available at present is a memorandum in Appendix A of the notice.[68] The conclusion of the memorandum provides guidance for field staff on when to assert jurisdiction.[69] Essentially the migratory bird rule and all of 33 C.F.R. § 328.3(a)(3)(i) to (iii) may no longer be used to assert jurisdiction. Generally jurisdiction based on adjacency to

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[65]http://thomas.loc.gov/cgi-bin/query/z?c108:S.473:(5/1/2003), http://thomas.loc.gov/cgi-bin/query/z?c108:H.R.962:(9/1/2003), http://www.aswm.org/index-alt.htm (8/28/02).

[66]U.S. Const. art. I, § 8.

[67]Advanced Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of ''Waters of the United States,'' 68 Fed. Reg. 1991 (January 15, 2003).

[68]*Id.* at 1995.

[69]*Id.* at 1997-1988.

traditional navigable waters or tributaries of traditional navigable waters remains. So called ''isolated waters'' are not protected.

VII. CONCLUSION

SWANCC has definitely affected jurisdiction over isolated waters and wetlands. Whether only the ''Migratory Bird Rule'' or all of 33 C.F.R. § 328.3(a)(3) was invalidated remains unclear with different courts taking different views. What is left is jurisdiction over bodies of water such as the Salton Sea with enough boating and actual interstate commerce activity to support jurisdiction without reliance on the ''Migratory Bird Rule'' or potential interstate commerce. The most common method of establishing jurisdiction over wetlands or waters that are not traditionally navigable waters or adjacent to traditionally navigable waters is to show a surface connection to navigable waters or that the waters or wetlands are adjacent to waters with a surface connection to navigable waters.