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Irrigation Return Flow or Discrete Discharge? Why Water Pollution From Cranberry Bogs Should Fall Within the Clean Water Act's NPDES Program

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IRRIGATION RETURN FLOW OR DISCRETE DISCHARGE? WHY WATER POLLUTION FROM CRANBERRY BOGS SHOULD FALL WITHIN THE CLEAN WATER ACT'S NPDES PROGRAM

BY

ANDREW C. HANSON* & DAVID C. BENDER**

Despite license plates proclaiming it as the "dairy state," Wisconsin is the top cranberry producing state in the nation. Cranberry operations are unique in that they are agricultural operations that require vast quantities of water. Water discharged to lakes, wetlands, and rivers through ditches and canals during the production process can contain the phosphorus fertilizers and residues of pesticides that were applied during the growing season, which can cause serious water quality problems. Although the cranberry industry has not historically been subject to the Clean Water Act, cranberry bog discharges appear to fit squarely within the purview of the National Pollutant Discharge Elimination System (NPDES) program under that statute. In 2004, the Wisconsin attorney general filed a public nuisance lawsuit against a cranberry grower, alleging that the grower discharged bog water laced with phosphorus to the lake. However, provided that cranberry bog discharges do not fall within the "irrigation return flow" exemption from the Clean Water Act, the NPDES permit program may be a more cost-effective approach to addressing the water quality problems that can be caused by cranberry bog discharges.

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I. INTRODUCTION

Imagine a temporary detention pond that stores water laced with phosphorus fertilizers and pesticides. Now, imagine that pond discharging its polluted contents through a series of ditches, dikes, and channels to the nearest lake. Environmental practitioners might quickly assume that the Federal Water Pollution Control Act Amendments of 1972, (Clean Water Act or Act)[1] regulates that discharge. Indeed, in most instances the Clean Water Act would—unless the discharger is a "cranberry bog," part of a small industry that has historically not been subject to the extensive reach of the Act.

Despite license plates proclaiming it as the "dairy state," Wisconsin is not the leading milk producer in the United States. It is, however, the top cranberry producing state in the nation. Wisconsin—the "cranberry state"—more than doubles the cranberry production of the second largest producer, Massachusetts. In 2003, Wisconsin planned to produce more than 3 million barrels, or 300 million pounds, of the fruit,[2] more than one half of the almost 600 million pounds of cranberries consumed each year.[3] The remaining top

[1] Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2000).

[2] AGRIC. STATISTICS BD., U.S. DEP'T OF AGRIC., CRANBERRIES (Aug. 19, 2003), *available at* http://usda.mannlib.cornell.edu/usda/nass/Cran//2000s/2003/Cran-08-19-2003.pdf.

[3] Wis. State Cranberry Growers Ass'n, http://www.wiscran.org (last visited Apr. 15, 2007).

cranberry-producing states like New Jersey, Oregon, and Washington, combined, would not surpass Wisconsin's production.[4] Today, there are 150 cranberry marshes in eighteen counties in Wisconsin covering 110,000 acres.[5]

Cranberry operations are unique in that they are agricultural operations that require vast quantities of water.[6] In fact, water is the single most important resource for growing cranberries.[7] With over 84,000 miles of streams, 1.2 million acres of lakes, and 5 million acres of remaining wetlands,[8] Wisconsin seems ideal for cranberry production.

Given the need for a large water supply, cranberry "bogs" are typically located on or near wetlands that are directly adjacent to lakes and rivers.[9] Production involves pumping water from adjacent wetlands or lakes, irrigating and flooding the below-grade cranberry beds for harvest and frost protection, and then discharging the water back to the lake or river from which it came through a series of ditches, dikes, and dams.[10] The discharged water contains the phosphorus fertilizers and residues of pesticides that were applied during the growing season.[11] The end result is relatively clean water coming into the bog, and relatively polluted water pouring out.[12]

The cranberry industry has not historically been subject to the reach of the Clean Water Act despite the fact that cranberry bog discharges appear to fit squarely within the purview of the National Pollutant Discharge Elimination System (NPDES) program under the Act.[13] Recently, the Wisconsin attorney general has attempted to abate polluted cranberry bog discharges through public nuisance litigation.[14] However, rather than apply the complicated common law of public nuisance, this Article explores how the Clean Water Act can, and should, apply to control pollutant discharges from cranberry bogs.

Part II of this Article describes the nature of cranberry production and the pollutants typically discharged in cranberry bog water to streams, wetlands, and lakes. Part III of this Article summarizes the recent public nuisance litigation in *State v. Zawistowski*,[15] where the Wisconsin attorney general joined with private landowners to abate pollutant discharges to a lake by a cranberry operation. Part IV summarizes the jurisdictional elements of the Clean Water Act's NPDES permit program. Part V of this Article analyzes

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4 *Id.*

5 Wis. State Cranberry Growers Ass'n, A History of Cranberry Growing, http://www.wiscran.org/history.htm (last visited Apr. 15, 2007).

6 *See infra* Part II.

7 CAPE COD CRANBERRY GROWERS' ASS'N, CRANBERRY WATER USE: AN INFORMATION FACT SHEET (2001), *available at* http://www.cranberries.org/pdf/wateruse.pdf.

8 WATER DIV., WIS. DEP'T OF NATURAL RES., WIS. WATER QUALITY ASSESSMENT REPORT TO CONGRESS 2004, at 9 (2004), *available at* http://www.dnr.state.wi.us/org/water/wm/watersummary/305b_2004/download/wqreport_2004_part_I_II.pdf.

9 CAPE COD CRANBERRY GROWERS' ASS'N, *supra* note 7.

10 *See infra* Part II.

11 *Id.*

12 *Id.*

13 33 U.S.C. §§ 1311(a), 1342(a) (2000).

14 *See infra* Part III.

15 State v. Zawistowski, No. 04-CV-75 (Wis. Cir. Ct., Sawyer County, Wis. Apr. 5, 2006).

whether cranberry bog discharges fall within the purview of the Clean Water Act's mandatory NPDES permit program, despite the "irrigation return flow" exemption from that program in the Act. Part VI of this Article suggests that not only should the Clean Water Act regulate pollutant discharges from cranberry bogs, but that doing so is a more efficient allocation of scarce public resources than filing public nuisance cases. The Article concludes that the Clean Water Act's NPDES permit program was designed to address the types of discharges from cranberry bogs, and should be applied by the U.S. Environmental Protection Agency (EPA) and state environmental agencies to ensure that navigable waters are protected from this unique and potent source of water pollution.

II. POLLUTANT DISCHARGES FROM COMMERCIAL CRANBERRY PRODUCTION

A native species to North America, cranberries grow on vines naturally in bogs and marshes.[16] However, commercial cranberry production involves dramatic landscape alterations for the cultivation of artificial bogs or "cranberry beds." The land is cleared of vegetation, scalped, and leveled approximately two feet below the existing grade of the soil.[17] A layer of sand is laid to create an acidic surface optimum for vine growth, and sand is periodically added to maintain the beds.[18] The vines take root in the sand, forming a monoculture that takes three to five years to produce commercial quantities of fruit.[19] Water is added to irrigate, to flood the beds for frost protection, and for harvest.[20]

To the casual observer, cranberry production might seem environmentally benign. In fact, proponents of the cranberry industry frequently claim that cranberry bogs serve as valuable wetlands that provide

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[16] Frank L. Caruso et al., *Cranberries: The Most Intriguing American Fruit*, APSNET, Nov. 2000, *available at* http://www.apsnet.org/online/feature/cranberry/.

[17] N.S. DEP'T OF AGRIC. & FISHERIES, GROWING NOVA SCOTIA 22, *available at* http://www.gov.ns.ca/nsaf/agaware/teacher/06_cranb.pdf; Wis. State Cranberry Growers Ass'n, Cranberry Production in Wisconsin, http://www.wiscran.org/production.htm (last visited Apr. 14, 2007).

[18] Wis. State Cranberry Growers Ass'n, *supra* note 17.

[19] *Id.*; N.S. DEP'T OF AGRIC. & FISHERIES, *supra* note 17.

[20] KEN SCHREIBER, WIS. DEP'T OF NATURAL RES., THE IMPACTS OF COMMERCIAL CRANBERRY PRODUCTION ON WATER RESOURCES 5 (Mar. 1988) (on file with authors); *see also* Wis. State Cranberry Growers Ass'n, *supra* note 17 (explaining that water is used for irrigation, frost protection, and harvest); Oregon Cranberry Network, Growing Cranberries, http://www.oregoncranberry.net/growing_cranberry.htm (last visited Apr. 15, 2007) (explaining that sprinkling is used to protect against frost and that ample water is necessary for irrigation and harvesting); The Cranberry Institute, Frequently Asked Questions, http://www.cranberryinstitute.org/cranfacts/faq.htm (last visited Apr. 15, 2007) (explaining that cranberries do not grow in water, but that water is used to make harvesting easier and to protect from freezing); Decas Cranberry Products Inc., Frequently Asked Questions, http://www.decascranberry.com/faqs.htm (last visited Apr. 15, 2007) (explaining that cranberries are usually grown in bogs surrounded by water to aid in irrigation, flooding, and harvesting); N.S. DEP'T OF AGRIC. & FISHERIES, *supra* note 17 (explaining that water is used for irrigation and flooding).

ecological functions for habitat and wildlife.[21] Cranberry production involves creation of artificial wetlands[22] during a time when wetlands are disappearing rapidly across the United States.[23] But the intensive application of pesticides, herbicides, fungicides, and fertilizers attendant to industrial cranberry production tells a different story.

Fertilizer application plays a critical role in cranberry production.[24] The acidic soils in which cranberry vines take hold are naturally low in phosphorus, so cranberry growers must add phosphorus to increase crop productivity.[25] Cranberries typically require no more than twenty pounds of actual phosphorus per acre,[26] yet one study indicated that Wisconsin cranberry growers may be over applying phosphorus on their cranberry beds.[27] Over application of this plant nutrient can result in more soluble phosphorus being discharged to the nearest surface water during the seasonal discharges from the bogs, associated with either the spring planting or fall harvest, after the phosphorus fertilizer has been applied to the bog.[28]

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[21] *See* Wis. State Cranberry Growers Ass'n, Wetlands & Cranberry Growing: Environmental Partners, http://www.wiscran.org/crangrow.htm (last visited Apr. 15, 2007) (asserting that cranberry wetlands provide important wetlands for plants and wildlife and mentioning a study finding that "there is a high probability that these commercial cranberry wetlands systems can also perform many of the functions commonly attributed to wetlands"); *see also* Wis. State Cranberry Growers Ass'n, Cranberry Wetlands, http://www.wiscran.org/wetlands.htm (last visited Apr. 15, 2007) (asserting that cranberry wetlands provide stable environments that support "almost every species of wildlife in the state [of Wisconsin]" and stating that many cranberry growers recognize the importance of wildlife and encourage wildlife habitation). However, the U.S. Army Corps of Engineers has determined that although cranberry bogs can be similar to wetlands, "[m]ost of the functions/values of natural wetlands are lost or substantially reduced by conversion to cranberry beds." ST. PAUL DISTRICT, U.S. ARMY CORPS OF ENG'RS, ST. PAUL DISTRICT ANALYSIS REGARDING SECTION 404 REVIEW OF COMMERCIAL CRANBERRY OPERATIONS 29 (Sept. 1995) [hereinafter ST. PAUL DISTRICT ANALYSIS] (on file with authors).

[22] Wis. State Cranberry Growers Ass'n, Wetlands and Cranberry Growing: Environmental Partners, http://www.wiscran.org/crangrow.htm (last visited Apr. 15, 2007).

[23] *See* Press Release, Ass'n of State Wetland Managers, Ponds Proliferate, but Wetland Losses Continue (Mar. 30, 2006), *available at* http://www.aswm.org/fwp/pressrelease2006.htm (reporting that, while the rate of wetland loss declined somewhat between 1998 and 2004, the quality and type of the new wetlands created in the United States has been inadequate to provide the needed natural wetland functions for habitat and wildlife). *But see* T.E. DAHL, U.S. FISH & WILDLIFE SERV., STATUS AND TRENDS OF WETLANDS IN THE CONTERMINOUS UNITED STATES 1998 TO 2004, at 15 (2006), *available at* http://wetlandsfws.er.usgs.gov/status_trends/National_Reports /trends_2005_report.pdf (indicating that wetland loss had declined between 1998 and 2004, with an overall net gain of almost 200,000 wetland acres during that time period).

[24] TERYL ROPER ET AL., PHOSPHORUS FOR BEARING CRANBERRIES IN NORTH AMERICA 2 (2004), *available at* http://www.hort.wisc.edu/cran/mgt_articles/articles_nutr_mgt/Phoshorus%20 Publication%20.pdf.

[25] *Id.* at 5.

[26] *Id.* at 8.

[27] *See* TERYL R. ROPER, HOW MUCH PHOSPHORUS IS REALLY NEEDED? (2005), *available at* http://www.hort.wisc.edu/cran/pubs_archive/proceedings/2005/HowMuchP.pdf (suggesting that Wisconsin cranberry growers may be applying more phosphorus than what is needed to maintain crop fertility).

[28] ROPER ET AL., *supra* note 24, at 7; FAITH A. FITZPATRICK ET AL., U.S. GEOLOGICAL SURVEY, REPORT 02-4225, NUTRIENT, TRACE-ELEMENT, AND ECOLOGICAL HISTORY OF MUSKY BAY, LAC COURTE OREILLES, WISCONSIN AS INFERRED FROM SEDIMENT CORES, WATER-RESOURCES

Several studies of northern Wisconsin lakes located downstream from areas of intense cranberry production showed increased levels of nutrients, particularly phosphorus, which contribute to harmful aquatic plant growth such as algae and weeds.[29] One study showed that phosphorus releases from a cranberry bog exceeded that of a nearby residential housing development.[30] Another found that phosphorus loading from cranberry bog water returned to a surface water comprised more than seventy-five percent of the total phosphorus load to the lakes, based on computer modeling.[31]

Pesticide discharges from cranberry bogs—or bog-water laced with pesticides—also pose a well-documented water pollution problem. There are approximately twenty-two pesticides commonly used on cranberries, including napropromide, norflurazon, dichlovenil, 2, 4-D, carbaryl, diazinon, chlorpyrifos, and azinphos-methyl.[32] One study in Wisconsin found that pesticide concentrations in surface water downstream from cranberry marsh discharges were sufficient to cause total mortality of two species of test organisms.[33] Another study in Washington, also a leading cranberry producer, detected three toxic organophosphorus insecticides, one of which includes the dangerous chemical diazinon, at lethal concentrations for aquatic invertebrates, exceeding that state's water quality criteria for aquatic life.[34] Yet another study in northern Wisconsin found elevated concentrations of lead, arsenic, cadmium, selenium, and other toxic metals in cranberry bog discharges.[35]

INVESTIGATIONS 9 (2003) (citing Brian L. Howes & John M. Teal, *Nutrient Balance of a Massachusetts Cranberry Bog and Relationships to Coastal Eutrophication*, 29 ENVTL. SCI. & TECH. 960, 960–74 (1995)) (noting that a Massachusetts cranberry bog's releases of nitrogen and phosphorus coincided with flooding of the bog for harvest and frost protection) (on file with authors); SCHREIBER, *supra* note 20, at 11.

29 MARJORIE WINKLER & PATRICIA SANFORD, FINAL REPORT: ENVIRONMENTAL CHANGES IN THE LAST CENTURY IN LITTLE TROUT LAKE, INKSPOT BAY, GREAT CORN AND LITTLE CORN LAKES, LAC DU FLAMBEAU TRIBAL LANDS, WISCONSIN 10 (2000) (on file with authors); FITZPATRICK ET AL., *supra* note 28, at 9; JIM SENTZ ET AL., U.S. ARMY CORP. OF ENG'RS, GREAT CORN AND LITTLE CORN LAKES, SECTION 22—WATER QUALITY STUDY 1 (2000); ROPER ET AL., *supra* note 24, at 7.

30 FITZPATRICK ET AL., *supra* note 28, at 9.

31 SENTZ ET AL., *supra* note 29, at 1; *see also* ST. PAUL DISTRICT ANALYSIS, *supra* note 21, at 15 (noting a Lac du Flambeau Tribal Natural Resources Department study finding that "[i]n some cases, cranberry marsh discharges were found to contain total phosphorus concentrations ten times higher than that of ambient lake concentrations").

32 FITZPATRICK ET AL., *supra* note 28, at 9.

33 KEN SCHREIBER, WIS. DEP'T OF NATURAL RES, BIOMONITORING BELOW TWO COMMERCIAL CRANBERRY MARSHES IN JACKSON COUNTY, WISCONSIN 7 (Dec. 1993) (on file with authors). *But see* ST. PAUL DISTRICT ANALYSIS, *supra* note 21, at 15 (noting the limited sampling of the 1993 Schreiber study).

34 DALE DAVIS ET AL., WASH. DEP'T OF ECOLOGY, ASSESSMENT OF CRANBERRY BOG DRAINAGE PESTICIDE CONTAMINATION: RESULTS FROM CHEMICAL ANALYSES OF SURFACE WATER, TISSUE, AND SEDIMENT SAMPLES COLLECTED IN 1996, at iii, 1 (July 1997), *available at* http://www.ecy.wa.gov/pubs/97329.pdf; *see also* PAUL ANDERSON & DALE DAVIS, WASH. DEP'T OF ECOLOGY, EVALUATION OF EFFORTS TO REDUCE PESTICIDE CONTAMINATION IN CRANBERRY BOG DRAINAGE (Sept. 2000), *available at* http://www.ecy.wa.gov/pubs/0003041.pdf (finding no reduction in chlorpyrifos, diazinon, or azinphos-methyl in cranberry bog discharges even after application of best management practices).

35 WINKLER & SANFORD, *supra* note 29, at 3–4, 9. The elevated lead and arsenic

In short, the point source discharge of phosphorus and pesticides from cranberry bogs is well-documented, as is the water quality impact of those discharges. Due to their heavy use of water for production and the use of pesticides and fertilizers, the residue of those pesticides and fertilizers can be washed away through the canals and bulkheads by successive flooding and drainage of the cranberry bogs.[36] In this way, pollutant discharges from cranberry bogs are more direct and discrete than typical agricultural runoff.[37]

III. *STATE V. ZAWISTOWSKI* AND THE ATTEMPT TO USE PUBLIC NUISANCE AUTHORITY TO CONTROL POLLUTANT DISCHARGES FROM CRANBERRY BOGS

Concerned with alleged discharges of phosphorus pollution from a cranberry bog in northern Wisconsin, in 2004, the Wisconsin attorney general joined with a group of private property owners on Musky Bay of Lac Courtes Oreilles Lake[38] to file a lawsuit against a cranberry grower named William Zawistowski.[39] Zawistowski owns cranberry marshes that withdraw water and discharge cranberry bog effluent into Musky Bay.[40] The attorney general and the property owners alleged that Mr. Zawistowski created a public and private nuisance by applying phosphorus-containing fertilizers and pesticides to his cranberry beds and then discharging the phosphorus-containing residues back to Musky Bay.[41] They alleged that phosphorus discharges over the decades had "fed the growth of dense, choking aquatic plants and a thick, slimy, smelly green algal mat" on Musky Bay during the summer months, and that the floating mat of algae was a public nuisance under Wisconsin common law that interfered with public rights in navigable waters.[42] The State of Wisconsin and the private property owners on Musky Bay asked that Mr. Zawistowski be required to stop his discharges of phosphorus into Musky Bay, and significantly, be ordered to dredge the phosphorus-laden sediment out of the bay, and pay damages and costs.[43]

Since at least 1939, the Zawistowski cranberry operation has included two bogs, known as the "east" and "west" marshes, located on the southern shore of Musky Bay.[44] These marshes have independent pumping systems and man-made ditches that extract water from Musky Bay to flood the

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concentrations are likely from the application of lead-arsenate as a pesticide on cranberry beds.

36 SCHREIBER, *supra* note 20, at 5, 7; SCHREIBER, *supra* note 33, at 1.

37 SCHREIBER, *supra* note 20, at 5.

38 Lac Courtes Lake is the eighth largest lake in Wisconsin, and the largest lake in Sawyer County, Wisconsin. *See* State v. Zawistowski, No. 04-CV-75, at 3 (Wis. Cir. Ct., Sawyer County, Wis. Apr. 5, 2006).

39 Complaint at 2, State v. Zawistowski, No. 04-CV-75 (Wis. Cir. Ct., Sawyer County, Wis. June 8, 2004).

40 *Zawistowski*, No. 04-CV-75, at 3.

41 Complaint at 4, *Zawistowski*, No. 04-CV-75 (Wis. Cir. Ct., Sawyer County, Wis. June 8, 2004),

42 *Id.*

43 *Id.* at 5.

44 *Zawistowski*, No. 04-CV-75, at 3.

cranberry beds and that drain the marsh and return the water to Musky Bay from each cranberry marsh.[45] Each ditch is connected to Musky Bay to service the water needs of the cranberry operation, making the marshes "open" systems that depend upon Musky Bay for water.[46] Zawistowski applies various fertilizers containing phosphorus to the bog.[47]

The trial court in *State v. Zawistowski* found that "a direct result of the method Zawistowski uses to retrieve and discharge water to and from Musky Bay causes substantial amounts of nutrients, including phosphorus, to be discharged directly into Musky Bay" and this is "the primary source of phosphorus entering Musky Bay."[48] The court further found that the discharge occurs through the man-made canal and ditch system[49] and contributes about 40–50% of the phosphorus entering Musky Bay.[50] Moreover, the court found that Zawistowski knew, or at least he should have known, that he was discharging phosphorus into the bay.[51]

The trial record in *Zawistowski* indicates that Musky Bay has been suffering from the effects of frequent phosphorus-laden bog discharges from Zawistowski's cranberry operation.[52] Musky Bay is becoming more "eutrophic" over time, meaning that nutrients like phosphorus-containing fertilizers are causing Musky Bay to experience severe algae blooms that cover the surface of the bay.[53] By 2005, fish populations in Musky Bay had dropped as a result, in part, of an increase in aquatic weeds and vegetation that are depleting the dissolved oxygen levels near the lake bed where fish spawn, thereby increasing fish mortality.[54]

Significantly, the trial court found that Zawistowski's discharge of phosphorus-containing bog water was contributing to the growth of algal plants and weeds in Musky Bay, and that algal mats on the surface prevented the public from swimming or using water craft like motorboats, canoes, and kayaks in certain areas of Musky Bay during the summer months.[55] However, the court found that Zawistowski's activities were not causing Musky Bay to be entirely unusable, particularly not during the spring, fall, and winter.[56] While Zawistowski's discharge was causing some interference with the public's use and enjoyment of Musky Bay, it could not determine after trial how many days out of the year the public was prevented from using Musky Bay or what portions of Musky Bay were rendered completely

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45 *Id.*

46 *Id.* at 3–4.

47 *Id.* at 4. Some of the fertilizer was periodically applied by airplanes, but that practice has been discontinued. According to the court's findings of fact after trial, Zawistowski uses less phosphorus fertilizers than recommended by experts in cranberry farming. *Id.*

48 *Id.* at 10–11.

49 *Id.*

50 *Id.* at 12–13.

51 *Id.* at 14.

52 *Id.* at 9–11.

53 *Id.*

54 *Id.* at 6.

55 *Id.* at 14–16.

56 *Id.* at 15–16.

unusable to the public.[57] The court concluded that it could not find that Zawistowski's discharges of phosphorus-containing bog water to Musky Bay constituted a public nuisance.[58] The Wisconsin attorney general has appealed the trial court's decision.[59]

The trial court stated that it was not aware of, nor had it been shown "any water quality standard established by the Wisconsin legislature, or any rulemaking body within this state, which regulates the discharge of water" from cranberry operations.[60] Apparently, neither the U.S. EPA, nor Wisconsin Department of Natural Resources, has proposed applying the Clean Water Act's core pollution program for point source discharges—the NPDES program[61]—to the discrete discharges of pollutants from cranberry bogs. However, the NPDES program appears to be perfect for controlling documented pollutant discharges that can occur from cranberry bogs.

IV. OVERVIEW OF THE CLEAN WATER ACT

The Clean Water Act created a comprehensive scheme to restore and maintain the quality of the nation's waters, relying primarily on a system that prohibits the discharge of pollutants to waters of the United States except in compliance with an NPDES permit issued by EPA or a state.[62] Section 301 of the Clean Water Act prohibits any person from discharging any pollutant without a permit issued by the state or EPA under Section 402 of the Act.[63] The Act defines "discharge of a pollutant" to mean "any addition of any pollutant to navigable waters from any point source."[64] The Act further defines "point source" to include "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, [or] discrete fissure . . . from which pollutants are or may be discharged."[65]

Significantly, the Clean Water Act excludes from the definition of point source "agricultural stormwater discharges and return flows from irrigated agriculture."[66] The latter exclusion is known as the "irrigation return flow exemption" and its legislative and regulatory history is both tortured and limited.[67] Perhaps because of its lack of clarity, the irrigation return flow

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57 *Id.*

58 *Id.* at 25–26.

59 Notice of Appeal, State v. Zawistowski, App. No. 2006AP001439 (Wis. Ct. App. June 22, 2006).

60 *Zawistowski*, No. 04-CV-75, at 4.

61 33 U.S.C. § 1342(a) (2000).

62 *Id.* §§ 1251(a), 1342(a); Theodore L. Garrett, *Overview of the Clean Water Act*, *in* THE CLEAN WATER ACT HANDBOOK 1, 1 (Mark A. Ryan ed., 2d ed. 2003).

63 33 U.S.C. §§ 1311(a), 1342(a) (2000).

64 *Id.* § 1362(12).

65 *Id.* § 1362(14).

66 *Id.* § 1342(l) (exempting agricultural stormwater and irrigation return flows from the purview of the NPDES permit program).

67 *Id.* In addition, and somewhat unhelpfully, the Clean Water Act defines "navigable waters" as "waters of the United States" and offers nothing else in the way of statutory guidance. 33 U.S.C. § 1362(7) (2000). However, the U.S. EPA and Army Corps of Engineers have

exemption has stood as a formidable obstacle to controlling point sources of pollution on agricultural lands.

V. CRANBERRY BOGS, THE NPDES PERMIT PROGRAM, AND THE IRRIGATION RETURN FLOW EXEMPTION

Despite the direct discharges from many cranberry beds, neither EPA nor the five largest cranberry producing states has required the bogs to obtain NPDES permits. The Wisconsin Department of Natural Resources (DNR) has raised the possibility of regulating cranberry bogs through discharge permits in Wisconsin, but only for documented water pollutant discharges that are creating a demonstrably negative water quality impact.[68] To date, DNR has never followed through with this proposal, and no cranberry bogs in Wisconsin have been required to obtain a NPDES permit.[69]

The first question when determining whether Clean Water Act jurisdiction over cranberry bog discharges should attach is whether those bogs discharge pollutants from a point source.[70] There are several features of the cranberry production that appear to involve point sources. For example, the ditches and bulkheads surrounding the bogs are identifiable point sources, as are the pesticide and fertilizer application equipment.[71] The next question is whether Congress and EPA excluded cranberry bogs from the NPDES permit program through the "irrigation return flow" exemption.[72] If cranberry bog discharges either 1) do not fit within the broad "point source" definition, or 2) are excluded as irrigation return flow, they are not covered by the Act.[73]

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stepped in to fill the void, defining navigable waters to include "all waters which are currently used . . . in interstate . . . commerce," "tributaries of [covered] waters," and "wetlands adjacent to [covered] waters [including tributaries]," among others. 33 C.F.R. § 328.3(a)(1), (5), (7) (2006). Only those intermittent and ephemeral waters that share a "significant nexus" to interstate waters fall within the definition of "navigable waters" and, therefore, the jurisdiction of the Clean Water Act. Rapanos v. United States, 126 S.Ct. 2208, 2236 (2006) (Kennedy, J., concurring).

[68] SCHREIBER, *supra* note 20, at 21. These permits are known as WPDES permits in Wisconsin. *See* WIS. STAT. ch. 283 (2006).

[69] For a list of the 412 industrial dischargers operating under individual WPDES permits in Wisconsin, see Wis. Dep't of Natural Res., Current WPDES Wastewater Permit Holders, http://dnr.wi.gov/org/water/wm/ww/indus.xls (last visited Apr. 14, 2007).

[70] 33 U.S.C. § 1362(6) (2000).

[71] *See infra* Part V.A.

[72] *See infra* Part V.B.

[73] The Ninth Circuit in League of Wilderness Defenders v. Forsgren, 309 F.3d 1181 (9th Cir. 2002), reaffirmed that although EPA has reasonable discretion to interpret the term "point source," it does not have the discretion to exempt classes of activities where those activities meet the parameters of the statutory definition. *Id.* at 1190; *see also* Natural Resources Defense Council v. Costle, 568 F.2d 1369, 1377 (D.C. Cir. 1977) (same). As a result, it is doubtful that EPA or states have the authority to specifically exclude cranberry operations, categorically, from the definition of point source.

A. Ditches and Bulkheads As Point Sources

There can be little doubt that many features of a typical cranberry bed, including the bulkhead, dams, and ditches through which pollutants are discharged at the end of the harvest season (and seasonally throughout the year), could at least theoretically fall within the definition of "point source." In fact, the plain language definition of "point source" specifically includes "ditches," and "discrete conveyances"[74] that are common at cranberry bogs. And, precedent has established that gullies, rills, check dams, sediment traps, and other natural or manmade conveyances or systems designed to catch runoff can also be point sources under the Clean Water Act.[75] After all, it is well established that Congress intended the "broadest possible definition" of the term point source.[76]

However, relatively few cases, if any, have characterized agricultural operations as point sources subject to the NPDES permit program.[77] Courts have been more inclined to find that discharges of pollutants from agricultural operations fall within the nonpoint source category, specifically, the irrigation return flow exemption from the NPDES permit program.[78]

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[74] 33 U.S.C. § 1362(14) (2000).

[75] *See, e.g.*, N.C. Shellfish Growers' Ass'n v. Holly Ridge Assocs., 278 F. Supp. 2d 654, 679–80 (E.D.N.C. 2003) (check dams, sediment traps, gullies and rills as part of a home development site on a wetland are point sources); Froebel v. Meyer, 217 F.3d 928, 938–39 (7th Cir. 2000) (recognizing that a partially destroyed dam can be a point source); Comm. to Save Mokelumne River v. E. Bay Mun. Util. Dist., 13 F.3d 305, 308 & n.1 (9th Cir. 1993) (dam that discharged mine tailings in pond-water to clean water downstream was a point source); Catskill Mountains Chapter of Trout Unlimited v. City of N.Y., 273 F.3d 481, 493 (2d Cir. 2001) (tunnel was a point source that transferred water from one basin to another); Sierra Club v. Abston Constr. Co., 620 F.2d 41, 45 (5th Cir. 1980) (manmade sediment basin was a point source); United States v. Earth Scis, Inc., 599 F.2d 368, 374 (10th Cir. 1979) (mining operation's sump pit was a point source).

[76] *See, e.g., Earth Sciences*, 599 F.2d at 373 (concluding that the broadest possible definition of point source must be adopted in order to further the congressional intent to regulate pollution emitting sources to the fullest extent possible); United States v. W. Indies Transp. Inc., 127 F.3d 299, 309 (3d Cir. 1993); Dague v. City of Burlington, 935 F.2d 1343, 1354–55 (2d Cir. 1991).

[77] This assertion excludes concentrated animal feeding operations, which are specifically included within the definition of point source. 33 U.S.C. § 1362(14) (2000); *see also* 40 C.F.R. § 122.23 (2006).

[78] Fishermen Against the Destruction of the Env't v. Closter Farms, Inc., 300 F.3d 1294, 1297 (11th Cir. 2002) (sugarcane farm that discharged pollutants through irrigation ditches constituted irrigation return flow); Hiebenthal v. Meduri Farms, 242 F. Supp. 2d 885, 888 (D. Or. 2002) (commercial fruit operator that over-applied wastewater to fields, causing runoff, exempt from the NPDES permit program because runoff fell within irrigation return flow exemption). Courts appear to have used the irrigation return flow exemption and the agricultural stormwater exemption interchangeably, despite their different definitions. In fact, agricultural stormwater is specifically limited to discharges comprised entirely of stormwater, and does not include other pollutants not typically included in the stormwater runoff. 40 C.F.R. § 122.23(e) (2006). Despite this, for purposes of this Article, we treat as relevant to the irrigation return flow exemption all cases that address both of the exemptions, as the rationale and policy of exempting those types of nonpoint sources from the NPDES program are the same.

At least one court has identified a non-concentrated animal feeding operations (CAFOs) agricultural operation as a point source. In *United States v. Oxford Royal Mushroom*, 487 F. Supp. 852 (E.D. Pa. 1980), the defendant mushroom farm discharged wastewater onto fields via

Other than showing a proclivity to find the irrigation return flow exemption applies in a given a case, these decisions fail to offer a discernible rule for defining the extent of the exemption.

B. The "Irrigation Return Flow" Exemption from the Definition of Point Source

The irrigation return flow exemption[79] is a largely undefined area of law, but one for which clarification should be demanded by both water quality advocates and agribusiness. As it stands, operators and regulators have little guidance for defining whether and when the Clean Water Act's NPDES permit program applies to cranberry operations. Although cranberry beds are not specifically defined as point sources, they are not specifically excluded from the Clean Water Act as point sources either, indicating that their coverage under the Clean Water Act is an open question.[80] However, a review of the legislative and regulatory history of, as well as case law on, the irrigation return flow exemption indicates that cranberry bogs fall within the definition of point source, and are not exempt from the NPDES permit program.

1. Legislative and Regulatory History of the Irrigation Return Flow Exemption

The irrigation return flow exemption was first included in the Federal Water Pollution Control Act Amendments of 1977.[81] Before that time, in

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a spray irrigation system that was designed to spray only enough water to be absorbed into the fields as irrigation. *Id.* at 854. The defendant argued that the agricultural runoff was not a point source. *Id.* The court held simply that the discharge of pollutants from the over-application of waste to land application areas could fall within the definition of point source. *Id.* Although not addressing the irrigation return flow exemption, *Oxford Royal Mushroom*'s holding indicates that the irrigation return flow exemption (and later, the agricultural stormwater exemption created in the 1987 Clean Water Act Amendments) does not apply to wastewater applied and discharged from land application areas where the irrigation water greatly exceeds the absorption capacity of the soil.

The same court later indicated that for the agricultural stormwater exemption or the irrigation return flow exemption to apply, the discharger must actually be engaged in agriculture. For example, in *Reynolds v. Rick's Mushroom Serv., Inc.*, 246 F. Supp. 2d 449, 456–57 (E.D. Pa. 2003), the Eastern District of Pennsylvania held that the waste pits, spray irrigation equipment, and landspreading fields as part of mushroom composting operation could all be characterized as a point source. *Id.* However, the court refused to apply the irrigation return flow exemption or the agricultural stormwater exemption to the mushroom composting operation because it was not engaged in the actual growing of mushrooms, only their composting. *Id.* at 257 n.4. The court asserted that this was more akin to a manufacturing process than an agricultural operation. *Id.*

79 33 U.S.C. § 1342 (l)(1) (2000) ("The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly, require any State to require such a permit.").

80. *See Reynolds*, 246 F. Supp. 2d at 457 (discussing other examples of sources that have not specifically been classified as point sources, but which *could* be, namely waste pits, spray irrigation equipment, and landspreading fields).

81 123 CONG. REC. 21, 26,778 (1977).

1975, EPA issued regulations that exempted irrigation return flows from the NPDES permit program. Those regulations were struck down by the District Court for the District of Columbia in *Natural Resources Defense Council, Inc. v. Train*[82] on the basis that EPA lacked the statutory authority to create an exemption from the definition of point source where none existed in the Clean Water Act.[83] After finding the exemption invalid, the court ordered EPA to promulgate regulations applying the NPDES permit program to point source discharges from agriculture by June 10, 1976.[84] Despite its pending appeal of the court's decision, EPA complied with the court's order.[85]

On July 12, 1976, EPA amended the permit exemption for irrigation return flows and required a permit for "agricultural point sources."[86] EPA defined an "agricultural point source" as "any discernible, confined and discrete conveyance from which any irrigation return flow is discharged into navigable waters."[87] "Irrigation return flow" was defined as "surface water, other than navigable waters, containing pollutants which result from the controlled application of water by any person to land used primarily for crops, forage growth, or nursery operations."[88] Most significantly, the definition of "irrigation return flow" included the following note: "Comment: This term includes water used for *cranberry harvesting*, rice crops, and other such controlled application of water to land for purposes of farm management."[89] In short, EPA attempted to apply the NPDES permit requirement to point sources that had irrigation return flows, including heavily water dependent or "wet" crops such as rice and cranberry production.

However, shortly after its promulgation, Congress obliterated EPA's rule promulgation by creating the irrigation return flow exemption in sections 502(14) and 402(l) of the 1977 Clean Water Act Amendments.[90] Significantly, Congress never defined an "irrigation return flow" and the congressional record is devoid of any references to EPA's "cranberry comment" in its 1976 rulemaking. Instead, a Senate Report on the 1977 Clean Water Act Amendments creating the irrigation return flow exemption reflects a tangential affirmation of EPA's definition of irrigation

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82 396 F. Supp. 1393 (D.D.C. 1975), *aff'd sub nom.* Natural Res. Def. Council v. Costle, 568 F.2d 1369 (D.C. Cir. 1977).

83 *Id.* at 1398.

84 *See* Agricultural Activities, National Pollutant Discharge Elimination System, 41 Fed. Reg. 7963, 7963 (Feb. 23, 1976) ("Although EPA is proceeding with the appeal of this decision, the Agency is still required to comply with the court order. Thus under the terms of the order . . . regulations applying the NPDES permit program to point source discharges in the agriculture and silviculture categories are required to be proposed by February 10, 1976 and promulgated by June 10, 1976.").

85 *Id.*

86 40 C.F.R. § 125.4(i)(3) (2006); *see* 41 Fed. Reg. 28,493–28,496 (July 12, 1976).

87 40 C.F.R. § 125.53(a)(1) (2006).

88 *Id.* § 125.53(a)(2).

89 *Id.* (emphasis added).

90 Federal Water Pollution Control Act, Pub. L. No. 95-217, 91 Stat. 1566, 1577 (1977) (codified at 33 U.S.C. §§ 1362(14), 1342(*l*)(1) (2000)).

return flows as "conveyances carrying surface irrigation return as a result of the *controlled* application of water by any person to land used primarily for crops."[91]

The Senate Report's definition is an obvious paraphrasing of EPA's definition of "irrigation return flow" exemption promulgated by EPA in 1976. But, the report noticeably omits the "cranberry comment." Based on this omission alone, one could easily argue that if Congress intended to exempt irrigation return flows, and EPA at one point considered cranberry harvesting to be an example of an irrigation return flow, then Congress's silence could be inferred to exempt cranberry bog discharges from the NPDES permit program.

However, if Congress intended to include cranberry bogs in the definition of irrigation return flow, Congress could have easily said as much in the statute or the legislative history. It did not. Instead, Congress's rationale for exempting irrigation return flows from the definition of point source instead had several other premises. The most significant of those was the need to protect western farmers on arid lands from unfair and burdensome regulation. Specifically, farmers claimed that requiring NPDES permits discriminated against western farmers on arid lands who relied much more heavily on irrigation ditches and drain tiles for storage and return of irrigated water.[92] Irrigation is the only means of sustaining those western farmers.[93] By classifying irrigation return flows as point sources and non-irrigated agricultural runoff as a nonpoint source, the farmers said, the 1972 Clean Water Act unfairly discriminated against western farmers who, by nature of the land and their farming operations, had to irrigate their lands and were predisposed to discharge pollutants when returning irrigated water to drainage ditches and points downstream.[94] Moreover, the water was needed for other downstream farmers.[95] Application of the NPDES permit requirement imposed an incentive for a farmer to prevent the water discharge and consequently withhold the water from those other downstream farmers who needed it.[96] Also, for good measure, western farmers invoked federalism policies and argued that water pollution

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91 S. REP. NO. 95-370, at 35 (1977), *as reprinted in* 1977 U.S.C.C.A.N. 4326, 4360 (emphasis added).

92 123 CONG. REC. S21, 26,702, 26,762 (Aug. 4, 1977).

93 *Federal Water Pollution Control Act Amendments of 1977: Field Hearing Before the Subcomm. on Envtl. Pollution of the Comm. on Env't and Public Works*, 95th Cong. 83 (1977) (statement of Jack D. Palma, III, Asst. Attorney General of Wyoming).

94 *Id.*; *see also* Memorandum from EPA General Counsel Robert E. Fabricant, EPA Assistant Administrator for Water G. Tracy Mehan, III, and EPA Assistant Administrator for Prevention, Pesticides, and Toxic Substances to Regional Administrators, Interpretative Statement and Regional Guidance on the Clean Water Act's Exemption for Return Flows from Irrigated Agriculture 3 n.2 (Mar. 29, 2002), *available at* http://www.epa.gov/npdes/pubs/talentfinal.pdf ("In 1977, Congress thought that 'Farmers in areas of the country which were blessed with adequate rainfall were not subject to permit requirements on their rainwater run-off, which in effect had been used for the same purpose and contained the same pollutants [as water used by western farmers].'" (quoting 3 LEGISLATIVE HISTORY OF THE CLEAN WATER ACT 527 (1978)).

95 *Federal Water Pollution Control Act Amendments of 1977*, *supra* note 93.

96 *Id.*

abatement programs need to be based on local conditions, rather than a national program for point sources.[97]

Based mainly on these concerns, Congress amended the Clean Water Act in 1977 to exempt "irrigated agriculture, [originally] defined under the act as a point source, from the 402 permit program."[98] Recognizing that irrigation return flows nonetheless represented a significant water pollution problem, Congress hoped that the locally-based wastewater treatment management planning program in section 208 of the Clean Water Act would be used to address pollution from irrigation return flows and other agriculturally related nonpoint source pollution.[99] As a result, section 208(f) of the Clean Water Act was specifically written to include consideration of irrigation return flows as a nonpoint source of water pollution.[100]

In summary, the legislative history of the irrigation return exemption reflects that Congress created the exemption to accommodate the geography and uniquely arid climate of the western United States, not heavily water-dependent crops like cranberry bogs.[101] In fact, the legislative

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[97] 123 CONG. REC. S21, 26,702, 26,762, & 26,774 (daily ed. Aug. 4, 1977); *see also* S. REP. NO. 95-370, at 35, *as reprinted in* 1977 U.S.C.C.A.N. 4326, 4360 (indicating that the purpose of the irrigation return flow exemption was to "exempt irrigation return flows from all permit requirements under section 402 of the [Clean Water Act], and assure that areawide waste treatment management plans under section 208 include consideration of irrigated agriculture").

[98] 123 CONG. REC. S21, 26,697 (daily ed. Aug. 4, 1977) (statement of Sen. Muskie (D-Me.)). Amending the Clean Water Act to create the exemption was intended to reverse the effects of the court decisions in *Natural Resources Defense Council v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977), which vacated a similar exemption created by EPA regulations. Natural Res. Def. Council v. Train, 396 F.Supp. 1393, 1396 (D.D.C. 1975), *aff'd sub nom. Costle*, 568 F.2d at 1382; *see also* Memorandum from EPA General Counsel, *supra* note 94, at 2 n.1 (indicating that after the D.C. Circuit upheld the district court's decision requiring EPA to issue NPDES permits for irrigation return flows, Congress simply responded by amending the definition of point source to exclude irrigation return flows).

[99] 123 CONG. REC. S21, 26,697 (daily ed. Aug. 4, 1977) (statement of Sen. Muskie (D-Me.)). Specifically, Senator Muskie stated that the section 402 NPDES permit program was an inefficient means of addressing irrigation return flows:

> Agriculture was demonstrated to be a major source of pollution. The current strategy in the act to divide agriculture into point and non-point sources is effective with regard to feedlots, but ineffective with regard to irrigation return flows. . . . Section 208 offers the potential for abatement programs to control both irrigation return flows and nonpoint source agricultural runoff, and the committee considered several proposals to pursue this proposal.
>
> For these reasons, the committee adopted several amendments which generally concern section 208 and specifically relate to agriculture.

Id.; *see also* Memorandum from EPA General Counsel, *supra* note 94, at 3 (noting that Congress "intended to ensure a level playing field between irrigated and non-irrigated agriculture" (citing 3 LEGISLATIVE HISTORY OF THE CLEAN WATER ACT, 1978, at 527 (1978); 4 LEGISLATIVE HISTORY OF THE CLEAN WATER ACT, 1978, at 882 (1978)).

[100] 33 U.S.C. § 1288(b)(2)(F) (2000).

[101] 123 CONG. REC. S21, 26,702 (daily ed. Aug. 4, 1977) (statement of Sen. Stafford (R-Vt.)). Moreover, Senator Stafford's introductory remarks at the public hearing in Fort Collins, Colorado in 1977 indicate that the irrigation return flow exemption was intended for western farmers on arid land who irrigate crops and then return the irrigation flow to drainage ditches. Specifically, Senator Stafford (R-Vt.) stated:

history on irrigation return flows is devoid of any actual evidence that suggests an intent to exempt other types of agricultural point sources from the NPDES permit program, such as "wet" crops like cranberry production or rice harvesting. As a result, it would be a mistake to simply assume that these wet crops automatically enjoy the benefit of the irrigation flow exemption, particularly in light of Congress's and EPA's silence on the issue.

2. Judicial Application of the Irrigation Return Exemption

The courts, on the other hand, have not been silent on the scope of the irrigation return flow exemption. Granted, relatively few cases have interpreted or addressed the irrigation return flow exemption. Of the few courts that have, some have fumbled with the exemption and others have sought to avoid its application. The widely divergent holdings, and the absence of clear legislative or regulatory guidance, leave the Clean Water Act jurisdictional status of bulkheads and ditches at cranberry bogs in question.

In *Hiebenthal v. Meduri Farms*,[102] the plaintiffs asserted that a commercial fruit dehydrator in the dry, arid climate of eastern Oregon was required to obtain a NPDES permit before discharging excess irrigation water from land application areas into waters of the United States.[103] The plaintiffs claimed that because the defendant applied irrigation wastewater in excess of the fertilizer needs of the crops, the discharge of that excess wastewater could not be classified as irrigation return flow.[104] The U.S. District Court for the District of Oregon rejected this argument, but with relatively little reasoning to support it. The court simply stated that all discharges from agriculture are exempt from the NPDES permit program unless they are from concentrated animal feeding operations (CAFOs).[105] Pointing to the Clean Water Act's regulation of CAFOs as point sources notwithstanding the agriculture stormwater exemption, the court in *Hiebenthal* essentially held that if all CAFOs are point sources despite the

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> Thanks to the combined efforts of Senator Wallop and Senator Hart, who conducted a field hearing in Fort Collins, Colo., on July 13 on agriculture's concerns about the Water Pollution Control Act, the committee adopted an amendment which, in effect, exempts irrigated agriculture from all permit requirements under section 402 of the act, and instead insures that areawide waste treatment management plans under Section 208 [for voluntarily addressing nonpoint sources of pollution] include consideration of irrigated agriculture. This amendment promotes equity of treatment among farmers who depend on rainfall to irrigate their crops and those who depend on surface irrigation which is returned to a stream in discreet conveyances. While this amendment may appear to be a minor matter to those of us from the East, to the farmers in the semiarid and arid West this amendment is a critical feature of the bill.

Id.

102 242 F. Supp. 2d 885 (D. Or. 2002).

103 *Id.* at 886.

104 *Id.* at 886, 888.

105 *Id.* at 887–88 (citing Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy, 305 F.3d 943, 955 (9th Cir. 2002)).

agricultural stormwater exemption, then all non-CAFOs must be nonpoint sources because of the agricultural stormwater exemption.[106]

Recent regulations promulgated by EPA for wastewater and manure discharges from CAFOs suggest the *Hiebenthal* view of the agricultural stormwater exemption is now out of step with EPA's view of the exemption. EPA's regulations provide that if a CAFO applies manure in excess of that called for under a nutrient management plan, any additional runoff of manure or nutrients from a land application area will constitute a "point source" discharge of pollutants.[107] Granted, the primary basis for holding that CAFO manure discharges resulting from over-application of manure on crop fields are point sources is grounded in the fact that CAFOs are regulated as point sources of water pollution under the Clean Water Act.[108] But the logic of regulating (and not exempting) those land application discharges applies just as easily to cranberry bogs and other operations like the commercial fruit dehydrator in *Hiebenthal*. The excess wastewater discharged from the land application area in that case should have been considered a point source discharge of pollutants, not nonpoint source pollution, if the application was, in fact, in excess of the fertilizer needs of the field.

In another application of the irrigation return flow exemption, the court in *Fishermen Against the Destruction of the Environment v. Closter Farms, Inc.*[109] found that excess irrigation and rainwater that accumulated in sugarcane fields and was discharged to a nearby surface water was an exemption as irrigation return flow.[110] In that case, a group of anglers claimed that a sugarcane farm was required to obtain a NPDES permit to regulate its discharges of pollutant-laden irrigation water from cane fields.[111] The sugarcane fields were irrigated by drawing water into irrigation canals until the water overflowed onto the fields.[112] Excess irrigation water was discharged into the lake through a culvert and originated from three sources: rainwater, groundwater drawn into the irrigation canals from areas that required drainage, and seepage from the lake.[113] The court characterized the discharged rain as "agricultural stormwater discharge" and the discharged groundwater and seepage as "return flow from irrigated agriculture."[114] The Eleventh Circuit exempted the discharged groundwater and seepage as irrigation return flow because all of that water had actually been used in the

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106 *See Hiebenthal*, 242 F. Supp. 2d., at 888 (holding that regulation of irrigation return flows is exempted from the Clean Water Act, but acknowledging that CAFOs are not subject to the exemption because they are expressly designated in the Clean Water Act as a point source).

107 40 C.F.R. § 122.23(e) (2006); *see also* Waterkeeper Alliance, Inc. v. Envtl. Prot. Agency, 399 F.3d 486, 509 (2d Cir. 2005) (sustaining EPA's application of the agricultural stormwater exemption to CAFOs).

108 33 U.S.C. § 1362(14) (2000).

109 300 F.3d 1294 (11th Cir. 2002).

110 *Id.* at 1296.

111 *Id.*

112 *Id.* at 1297.

113 *Id.*

114 *Id.*

irrigation process.[115] Therefore, unlike cases of over-application of wastes (and pollutants), the Eleventh Circuit's decision is premised on the fact that all of the water at issue was actually used for irrigation.

The Eleventh Circuit's decision in *Closter Farms* may be of limited use in determining whether cranberry bogs may be included within the irrigation return flow exemption. Although the sugarcane fields in *Closter Farms* and the typical cranberry bog both use irrigation ditches to flood growing areas as a source of water for plant growth, cranberry bogs use water for more than just irrigation. They use it for frost protection and harvest, particularly after the application of pesticides and fertilizers over the course of the growing season.[116] In short, cranberry bogs do not simply collect and discharge rainwater, like the sugarcane fields in *Closter Farms*, and the water in cranberry bogs for frost protection and harvest is not "excess water." In fact, it is typically just the right amount necessary to help the cranberries freeze during winter and float to the surface during harvest. Perhaps most importantly, unlike other agricultural crops, cranberry beds are actually built to hold water one to two feet deep similar to a natural wetland, suggesting that the purpose is to *hold* water for frost protection and harvest, not drain it.[117] In short, the broader role water plays in cranberry production compared to sugarcane production means that *Closter Farms* will be of limited value in determining whether cranberry bogs enjoy the benefit of the irrigation return flow exemption.

In sum, even a broad irrigation return flow exemption does not help with determining when the cranberry bogs should be covered under the Clean Water Act's definition of point source. And, if anything, the exemption has likely been given too much breadth by the courts, EPA, and state regulatory agencies when making that determination. Moreover, the legislative history indicates that Congress did not necessarily intend for the exemption to apply to cranberry bogs. On the contrary, cranberry bog discharges appear to fit neatly within the statutory definition of point source under the Clean Water Act.

VI. HOW *STATE V. ZAWISTOWSKI* COULD HAVE BEEN AVOIDED

Despite the relatively well-documented and discrete pollutant discharges from cranberry bogs, neither EPA nor Wisconsin Department of Natural Resources have proposed to apply the Clean Water Act's core pollution program for point source discharges: the NPDES permit program. In fact, none of the parties or the state circuit court in *Zawistowski* appear to have considered the possibility that the Clean Water Act may apply to limit Zawistowski's discharge of phosphorus to Musky Bay.[118] Instead, legislators

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115 *Id.*

116 SCHREIBER, *supra* note 20; Wis. State Cranberry Growers Ass'n, *supra* note 17.

117 *See supra* notes 16–20 and accompanying text.

118 State v. Zawistowski, No. 04-CV-75, at 4 (Wis. Cir. Ct., Sawyer County, Wis. Apr. 5, 2006) ("This court has not been shown and is unaware of any water quality standard established by the Wisconsin legislature, or any rule-making body within this state, which regulates the

and regulators alike have avoided the question and neglected the problem of polluted cranberry discharges, and the *Zawistowski* case shows the impact of that neglect.[119]

A. The NPDES Permit Program of the Clean Water Act Is a More Efficient Tool for Preventing and Abating Water Pollutant Discharges from Cranberry Bogs

The common law of public nuisance is an essential cause of action to fill the gaps in statutory environmental law,[120] but it does have its limits. Proving a public nuisance requires a showing that the offending conduct, whether intentional or negligent, substantially interferes with a right common to the public and that the conduct be unreasonable.[121] In that sense, how much "interference" is too much, and the reasonableness of the conduct, both become analyses dependent on facts in an isolated case rather than on a widespread environmental problem. In contrast, the NPDES program embodied in the Clean Water Act was intended to address the common law's inadequacies with respect to establishing liability, as well as those of previous statutory schemes, in addressing water pollution on a broad scale.[122] For the reasons below, the NPDES program, unlike the common law, is relatively uniform and, as a result, lends itself to easily resolving liability questions.

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discharge of water from cranberry farms.").

[119] The Wisconsin attorney general's lawsuit became a hot political issue during the campaign for that office in Wisconsin, with opponents attacking the attorney general for using her authority under state law to file the public nuisance against the cranberry grower. *See, e.g.*, Jason Stein, *Ugly Race, Qualified Candidates*, MADISON DAILY J., Sept. 3, 2006, at A1, *available at* http://www.madison.com/archives/read.php?ref=/wsj/2006/09/03/0609020663.php; Press Release, Dairy Bus. Ass'n, Attorney General Threatens Wisconsin's Right to Farm Law (June 23, 2006), *available at* http://www.widba.com/Files_pdf/AttorneyGeneralThreatensWisconsin.pdf. In addition, partly as a result of the Attorney General's lawsuit, legislation was introduced in Wisconsin that would have severely restricted the attorney general's authority to file public nuisance cases. *See* S.B. 425, 2005 Sess. (Wis. 2005).

[120] *See generally* Andrew C. Hanson, *Concentrated Animal Feeding Operations and the Common Law*, *in* COMMON LAW REMEDIES FOR PROTECTING THE ENVIRONMENT: A GUIDE TO HEROIC LITIGATION (Denise Antolini & Cliff Rechtschaffen eds., 2006).

[121] RESTATEMENT (SECOND) OF TORTS §§ 821B, 822 (1979). The defendant's conduct can be intentional and unreasonable, negligent, or based on strict liability. *See* Milwaukee Metro. Sewerage Dist. v. Milwaukee (*MMSD*), 691 N.W.2d 658, 670, 675–76 (Wis. 2005) (noting that public and private nuisance essentially have the same elements, except that a public nuisance arises from interference with a right common to the public).

[122] ROBERT PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE AND POLICY 85 (4th ed. 2003) ("Even in cases of public nuisance, the common law has proved to be a crude mechanism at best for controlling the onslaught of modern-day pollution."); M. Stuart Madden, *The Vital Common Law: Its Role in a Statutory Age*, 18 U. ARK. LITTLE ROCK L. REV. 555, 560–61 (1996).

1. NPDES Protects Water Quality Through Numeric Pollutant Limits and Best Management Practices

First, NPDES permits employ enforceable numeric limits and best management practices as effluent limitations.[123] Compliance with the numeric limits and best management practices means compliance with the NPDES permit, and in turn, the Clean Water Act.[124] Assuming the permit limits and practices were established to protect water quality standards, compliance also means protection of water quality.

In contrast, the trial court in *Zawistowski* found that discharges of phosphorus were having an adverse impact on Musky Bay, but found that the adverse impacts did not amount to a public nuisance, without comparing the water pollution to any applicable narrative or numeric water quality standards.[125] In other words, the nuisance standard, alone, cannot be consistently relied upon to protect water quality because it does not hinge on a legislative determination of how much water pollution is "too much." A promulgation of water quality standards under the Clean Water Act by the state legislature would help solve that problem.

2. NPDES Civil Liability Is "Strict"

Second, NPDES permit liability is strict,[126] which renders irrelevant the reasonableness, intentionality, or negligence of the conduct critical to a nuisance analysis.[127] In terms of defining civil liability, it does not matter how reasonable a grower's actions might have been in violating the conditions of his NPDES permit, whether he intended to discharge the phosphorus-laden bog water into Musky Bay without such a permit, or how much damage to the lake might have occurred as a result.

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123 33 U.S.C. § 1365(f) (2000) (defining "effluent limitation"); Waterkeeper Alliance v. Envtl. Prot. Agency, 399 F.3d 486, 502–03 (2d Cir. 2005) (holding that best management practices fall within the definition of effluent limits under the Clean Water Act).

124 33 U.S.C. § 1342(k) (2000).

125 State v. Zawistowski, No. 04-CV-75, at 13, 25–26 (Wis. Cir. Ct., Sawyer County, Wis. Apr. 5, 2006).

126 33 U.S.C. § 1311(a) (2000) (discharge of a pollutant to navigable waters prohibited except in compliance with a NPDES permit); United States v. Pozsgai, 999 F.2d 719, 725 (3d Cir. 1993); United States v. Amoco Oil Co., 580 F. Supp. 1042, 1050 (W.D. Mo. 1984); Stoddard v. W. Carolina Reg'l Sewer Auth., 784 F.2d 1200, 1208 (4th Cir. 1986).

127 *See* RESTATEMENT (SECOND) OF TORTS § 821D (1979) (defining private nuisance); *id.* § 822 cmt. a (describing the types of conduct that create nuisance liability). As for private nuisance, it is important to distinguish between the first two types of conduct that can give rise to a private nuisance, that is, "intentional and unreasonable" conduct and "negligent" conduct. *MMSD*, 691 N.W.2d at 671 (citing RESTATEMENT (SECOND) OF TORTS § 822). The difference is important because each requires different elements of proof. An interference with a person's use and enjoyment of land is "intentional" if the actor "(a) acts for the purpose of causing it, or (b) knows that it is resulting or is substantially certain to result from his conduct." *MMSD*, 691 N.W.2d at 672 (citing RESTATEMENT (SECOND) OF TORTS § 825). In other words, the defendant may not intend to cause harm to others, but because of the nature of the defendant's lawful business activities, he knows that he is doing harm to others. *MMSD*, 691 N.W.2d at 672 (citations omitted).

For example, in *Zawistowski*, the trial court explained in detail how the evidence at trial showed that Zawistowski intended to discharge the bog water and knew what effect it was having on Musky Bay.[128] On the other hand, the court noted that Zawistowski was not applying more phosphorus than what other growers typically apply, which relates to the "reasonableness" of Zawistowski's actions.[129] Ultimately, the court concluded that the interference with the use and enjoyment of Musky Bay was not so substantial as to amount to a nuisance.[130] All of this discussion becomes superfluous when the NPDES permit program is employed. What matters is whether the NPDES effluent limits have been violated and the best management practices have not been implemented. If that is the case, liability is clear. And, if relevant at all, the damage to the lake relates to appropriate injunctive relief and civil penalties, not liability.[131]

3. NPDES Permits Prevent Pollution, Rather Than Solely Abate it After it Happens

Third, the relative ease of implementation and enforcement of the Clean Water Act's NPDES permit scheme should operate to save the public money spent on cleaning up waterways after they are already degraded. Effluent limits and best management practices for cranberry bogs can be categorically applied through NPDES permits to all cranberry bogs, rather than only to the operations that are causing the most severe water quality impacts. NPDES permits should obviate the need for public nuisance litigation that, where the state prevails, results in only site-specific environmental protection.

For example, in *Zawistowski*, the trial court noted that there was no governing standard for the appropriate amount of phosphorus to be discharged into Musky Bay.[132] And, even if the attorney general obtained the injunctive relief that it sought and Musky Bay were cleaned up, one is left to wonder what should be done on other lakes polluted by surface water discharges from cranberry bogs in cranberry producing states like Wisconsin, Massachusetts, and Washington. The general deterrent effect of nuisance litigation is doubtful where the litigation outcome depends largely on site-specific circumstances that other cranberry growers may not think apply to them. Application of the NPDES permit program would create a standard of care through mandatory implementation of effluent limits and best management practices that would apply throughout the industry, not just at specific facilities. Furthermore, the NPDES permit program would provide cranberry growers with clear standards, taking away the uncertain liability created by the threat of common law nuisance actions.

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128 *Zawistowski*, No. 04-CV-75 at 13.

129 *Id.* at 4.

130 *Id.* at 25–26.

131 33 U.S.C. § 1319(d) (2000) (establishing "seriousness of the violation" as a factor to be considered by courts in imposing civil penalties on persons liable for violating the Clean Water Act).

132 *Zawistowski*, No. 04-CV-75 at 14.

4. Public Nuisance Actions Mimic the Failed Pre-NPDES Statutory Scheme

In fact, using public nuisance law to address water pollution from cranberry bogs is akin to relying on the failed statutory scheme that preceded the 1972 Clean Water Act Amendments.[133] The previous water pollution control scheme in the United States relied exclusively on measuring compliance with water quality standards from point source dischargers in determining whether water pollution existed and whether it needed to be abated.[134] In short, the government had to prove not that any effluent limits in a permit were being violated, because there were none, but instead that water quality standards in the receiving water were being violated.[135] This was costly, time consuming, and generally difficult to do.[136] This failed "water quality based" approach led to enactment of the modern version of the NPDES permit program today. Significantly, the NPDES permit program does not depend exclusively on demonstrated harm to the environment before jurisdiction attaches; if the permit requirement is triggered, then a permit must be obtained that incorporates effluent limits, including those more stringent limits needed to meet water quality standards.[137] Further, the NPDES program was designed to make it unnecessary to trace pollution back from an over-polluted waterbody, and then decide which sources needed to be abated.[138]

However, a common law action similar to *Zawistowski* includes all of the problems with the pre-Clean Water Act scheme. Specifically, the attorney general was required to show "unreasonable" harm to Musky Bay before any abatement measures could be ordered by a court. Relying on the common law as a means of regulating phosphorus and pesticide discharges from cranberry bogs is an inefficient step backwards in controlling pollutant discharges and protecting water quality.

5. NPDES Permit Liability Is Not Necessarily Limited by Right to Farm Laws

Nuisance liability can be precluded by application of state Right to Farm laws. NPDES permit implementation and enforcement obviates the need to address liability questions presented by those laws. Right to Farm laws typically insulate agricultural uses from common liability when the agricultural practices employed are consistent with what is used in the

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133 Cal. *ex rel.* State Water Res. Bd. v. Envtl. Prot. Agency, 426 U.S. 200, 202–05 (1976).

134 *Id.*

135 *See* 118 CONG. REC. 37,056 (1972) (statement of Rep. Robert E. Jones) ("Other than [the Refuse Act], we had the 1965 Water Pollution Control Act, the enforcement provisions of which are so cumbersome they have proven to be ineffective—as even the administration itself has stated."); H.R. REP. NO. 92-911, at 394 (1972) (additional views of Bella S. Abzug & Charles B. Rangel) ("Even the water quality standards program enacted in 1965 has proven to be of little value. More than half of the States unilaterally extended time-tables for achieving the standards.").

136 *State Water Res. Bd.*, 426 U.S. at 204–05.

137 *Id.* at 204.

138 *Id.*

industry, or where the practices do not present a substantial threat to public health and safety.[139] Almost every state in the country has a Right to Farm law,[140] including Wisconsin.[141]

Wisconsin's Right to Farm law was raised as a defense in *Zawistowski*, and both the landowners and the State sought to limit application of that law.[142] However, Right to Farm laws are typically only a defense to common law actions, not statutory actions.[143] And, state Right to Farm liability shields do not negate federal liability under the Clean Water Act. In short, Right to Farm laws become a non-issue with respect to establishing Clean Water Act liability for point source discharges from cranberry bogs.

B. The Clean Water Act Can Resolve Questions of Appropriate Technology and Injunctive Relief

It is worth noting that NPDES permit liability is only as clear as the permit that imposes it. For toxic or nonconventional pollutants, such as phosphorus or pesticides, the NPDES permit must impose effluent limits based on the best available technology economically achievable (BAT) and effluent limitation guidelines achievable by BAT.[144] Even if EPA does not

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139 Alexander A. Reinert, Note, *The Right to Farm: Hog-Tied and Nuisance-Bound*, 73 N.Y.U. L. REV. 1694, 1695 (1998); Andrew C. Hanson, *Brewing Land Use Conflicts: Wisconsin's Right to Farm Law*, 75 WIS. LAW 10, 12 (Dec. 2002), *available at* http://www.wisbar.org/AM/Template.cfm?Section=Search_Archive1&template=/CM/HTMLDisplay.cfm&ContentID=53190.

140 Hanson, *supra* note 139, at 11.

141 WIS. STAT. § 823.08 (2006).

142 For example, the State of Wisconsin argued that the Right to Farm law must be read consistently with Wisconsin's Public Trust Doctrine, requiring that the state hold navigable waters in trust for the public. WIS. CONST. art. IX, § 1. Specifically, Wisconsin's Public Trust Doctrine states:

> The state shall have concurrent jurisdiction on all rivers and lakes bordering on this state so far as such rivers or lakes shall form a common boundary to the state and any other state or territory now or hereafter to be formed, and bounded by the same; and the river Mississippi and the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways and forever free, as well to the inhabitants of the state as to the citizens of the United States, without any tax, impost or duty therefore.

Id.; *see also* Hilton v. Wis. Dep't of Natural Res., 717 N.W.2d 166, 173 (discussing Wisconsin's Public Trust Doctrine and noting that the Wisconsin Department of Natural Resources is charged with administering the public trust for the protection of public rights in navigable waters).

143 *See* Reinert, *supra* note 139, at 1695.

144 33 U.S.C. § 1311(b)(2)(A) (2000). Specifically, EPA must establish BAT for classes or categories of point sources:

> In order to carry out the objective of this Act there shall be achieved . . . for pollutants identified in subparagraphs (C), (D), and (F) of this paragraph, effluent limitations for categories and classes of point sources, other than publicly owned treatment works, which (i) shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants, as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2)

establish BAT and effluent limitation guidelines for cranberry discharges, effluent limits must be set to ensure compliance with water quality standards,[145] including designated uses, numeric and narrative water quality criteria,[146] and an antidegradation policy.[147] The question then becomes what the appropriate technology standard for cranberry bog effluent should be.

The Clean Water Act can resolve questions about appropriate technology to be applied to abate pollutant discharges and also the appropriate injunctive relief where violations of a permit have been documented. Approximately ninety percent of Wisconsin's cranberry operations use a "flow-through" system for water used in irrigation and flooding for frost protection and harvest.[148] A flow-through system is one in which water is pumped from the source, such as a lake, used directly on the cranberry beds, and then discharged back to the lake, sometimes carrying with it toxic pesticide residues and phosphorus fertilizers.[149] However, some cranberry operations in Wisconsin are beginning to use what are called "tailwater recovery" systems.[150] A tailwater recovery system consists of a

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> of this title, which such effluent limitations shall require the elimination of discharges of all pollutants if the Administrator finds, on the basis of information available to him (including information developed pursuant to section 1325 of this title), that such elimination is technologically and economically achievable for a category or class of point sources as determined in accordance with regulations issued by the Administrator pursuant to section 1314(b)(2) of this title, or (ii) in the case of the introduction of a pollutant into a publicly owned treatment works which meets the requirements of subparagraph (B) of this paragraph, shall require compliance with any applicable pretreatment requirements and any other requirement under section 1317 of this title . . . .

Id.; *see also id.* § 1314(b)(2)(B) (identifying the factors to be taken into account by EPA in setting BAT, including "the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate"); *id.* § 1314(b)(3) (requiring EPA to take cost of achieving the reductions into consideration in setting effluent limitation guidelines).

145 40 C.F.R. § 122.44(d) (2006) (requiring that NPDES permits ensure compliance with water quality standards).

146 *Id.* § 131.3(b) (defining water quality criteria to include narrative and numeric water quality criteria); *id.* § 122.44(d)(1)(i) (requiring a state or EPA to determine whether a discharge of pollutants may cause or contribute to a violation of water quality standards, including narrative water quality criteria).

147 33 U.S.C. § 1313(d)(4)(B) (2000); 40 C.F.R. § 131.12 (2006) (setting forth the antidegradation policy under the Clean Water Act); PUD No. 1 v. Wash. Dep't of Ecology, 511 U.S. 700, 718–19 (1994).

148 Transcript of Record at 199–200, State v. Zawistowski, No. 04-CV-75 (Wis. Cir. Ct., Sawyer County, Wis. Apr. 5, 2006).

149 *Id.* at 192–93 (referring to Zawistowski's cranberry operation as a flow-through system, and defining it as one that is not designed to trap or redirect the irrigation, harvest or flood water); *see also* UNIV. OF MASS. CRANBERRY EXPERIMENT STATION, BEST MANAGEMENT PRACTICES GUIDE FOR MASSACHUSETTS CRANBERRY PRODUCTION 2 (2000), *available at* http://www.umass.edu/cranberry/downloads/bmp/introduction.pdf (recommending the isolation of ditch water from external water bodies for flow-through systems and prevention of surface water contamination); *supra* notes 24–37 and accompanying text (discussing pollutant discharges from cranberry bogs).

150 Transcript of Record at 200, *Zawistowski*, No. 04-CV-75.

settling pond at the cranberry operation that is used to collect the water used for irrigation and flood protection.[151] After settling, the water is pumped to a reservoir for later use, fulfilling both water quality and water quantity goals for a cranberry operation.[152]

Tailwater recovery systems are evolving as the "best available technology" used to control pollutant discharges from cranberry operations, and already approximately ten percent of Wisconsin's cranberry growers employ those systems.[153] Moreover, the Wisconsin Cranberry Growers' Association has adopted a policy that cranberry operations should be converted to closed systems to use as little fresh water as possible and to prevent pesticides and nutrients from being discharged into surface waters.[154] Likewise, the Massachusetts Cranberry Experiment Station has included tailwater recovery systems on its list of recommended best management practices.[155]

Once a tailwater recovery system is employed on a cranberry operation, the next goal will be to identify appropriate pollutant levels, through effluent limits, that may ultimately be discharged to the surface water, if at all.[156] And, if a cranberry bog is violating an effluent limit or a condition of a permit, then the most obvious solution is to stop violating the permit. In *Zawistowski*, the State of Wisconsin and private landowners sought to require Zawistowski to dredge the phosphorus-laden sediment from Musky Bay, having resulted from decades of phosphorus discharges to Musky

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151 *Id.* at 199–200.

152 *Id.* at 186, 200; *see also* Natural Res. Conservation Serv., Conservation Practice Standard No. 447, Irrigation System, Tailwater Recovery (2004), *available at* ftp://ftp-fc.sc.egov.usda.gov/NHQ/practice-standards/standards/447.pdf (citing dual purposes of conservation of irrigation water supplies and improvement of offsite water quality).

153 Transcript of Record at 200, *Zawistowski*, No. 04-CV-75.

154 *Id.* at 186–87. The Natural Resources Conservation Service and Wisconsin State Cranberry Growers' Association has established a sample "conservation plan" for cranberry growers that recommends use of tailwater recovery systems to improve the recovery and reuse of surface water. U.S. DEP'T OF AGRIC., NATURAL RES. CONSERVATION SERV., WHOLE FARM CONSERVATION PLAN, XYZ CRANBERRY COMPANY, LLC, LINCOLN TOWNSHIP, CRANBERRY COUNTY 17–18, *available at* http://www.wiscran.org/WFPlanning/SamplePlan.pdf; *see also* U.S. DEP'T OF AGRIC., NATURAL RES. CONSERVATION SERV., ENVIRONMENTAL QUALITY INCENTIVES PROGRAM: LIST OF ELIGIBLE PRACTICES AND PAYMENT SCHEDULE (WISCONSIN) 4–56, *available at* ftp://ftp-fc.sc.egov.usda.gov/WI/eqip/2007/cookbook07.pdf ("[Tailwater recovery systems] may be applied as part of a conservation management system to support the conservation of irrigation water supplies or to improve offsite water quality.").

155 UNIV. OF MASS. CRANBERRY EXPERIMENT STATION, BEST MANAGEMENT PRACTICES GUIDE FOR MASSACHUSETTS CRANBERRY PRODUCTION 1 (2000), *available at* http://www.umass.edu/cranberry/downloads/bmp/water_resource_protection.pdf.

156 For example, the State of Wisconsin imposes a 1 milligram per liter (mg/l) effluent limit on all point source discharges of more than 60 pounds of phosphorus per month. WIS. ADMIN. CODE NR § 217.04(1)(a) (2006). Even in states where there may be no categorical effluent limit on phosphorus discharges, or where 1 mg/l may not be sufficient to meet water quality standards, those states must determine whether the cranberry bog has the reasonable potential to cause or contribute to a violation of water quality standards, including narrative water quality criteria, and then impose water quality based effluent limits to prevent those violations. 40 C.F.R. § 122.44(d)(1) (2006).

Bay.[157] Of course, this would presumably be expensive and onerous. If, however, Zawistowski had a NPDES permit that limited the extent of his phosphorus discharges to the bay, and if Zawistowski had violated that permit, the appropriate injunctive relief would have been to comply with the permit and to undertake measures at the cranberry operation to ensure that compliance, whether through implementation of a tailwater recovery system or, where a system is already implemented, compliance, with effluent limits and practices designed to properly maintain that system.

VII. CONCLUSION

Discharges from cranberry bogs can cause serious water pollution. Unlike other agricultural sources, cranberry bog discharges are not diffuse sources of runoff, nor do the discharges merely consist of "irrigation return flow" as Congress apparently meant when it used that phrase. Water is pumped from surface waters to flood cranberry beds that are below-grade and designed to hold water for extended periods of time. During the growing season, pesticides and fertilizers are applied. When the bogs are flooded and drained, in flow-through systems like Mr. Zawistowski's, those pesticides and fertilizers are discharged through discrete point sources back into the navigable waters, damaging aquatic life and water quality in the process. In short, the lack of clarity of the irrigation return flow exemption poses a serious obstacle to application of the NPDES permit program to cranberry bogs, but not an insurmountable one. Designed primarily for western farmers on arid lands, the exemption has likely been given too much breadth in light of its legislative and regulatory history.

The Clean Water Act's NPDES permit program is ideal for addressing the problems associated with cranberry bog discharges. The pollutant discharges are discrete, identifiable, well-documented, and arguably, not subject to the irrigation return flow exemption. And, the technology and management practices exist to reduce and eliminate those discharges through tailwater recovery systems and nutrient management practices. Further, applying the NPDES permit program reduces the need for expensive public nuisance litigation that may have only isolated environmental benefits that fail to address a more common and widespread problem in cranberry producing states. As a result, those states and EPA should broadly apply the NPDES permit program, and narrowly apply the irrigation return flow exemption, to cranberry growing operations to reduce and eliminate polluted cranberry bog discharges where they occur.

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[157] Complaint at 1–2, State v. Zawistowski, No. 04-CV-75 (Wis. Cir. Ct., Sawyer County, Wis. Jun. 8, 2004).