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Poisoned Waters: An Examination of Agricultural Water Pollution

by

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COMMENTS

Poisoned Waters: An Examination of Agricultural Water Pollution

Agriculture applies over eighty percent of all water used in the United States. Not surprisingly, agricultural wastewater is the primary source of many pollutants contaminating the nation's rivers, lakes, estuaries, and aquifers. Many of these pollutants are harmful to humans, and some are toxic to plants and wildlife. This comment explores the national scope of agricultural water pollution and two California "case studies." It then examines liability for agricultural water pollution arising under federal and state laws, and common law causes of action. Finally, the author makes three proposals to address the problem of agricultural water pollution: 1) amending the Federal Water Pollution Control Act to provide for federal regulation of particular agricultural practices; 2) amending the Migratory Bird Treaty Act to allow equitable remedies and citizens suits; and 3) extending the public trust doctrine to protect water quality.

I. INTRODUCTION

The past twenty years has seen an explosion of federal and state regulation of water pollution and hazardous waste created by urban and industrial sources. In contrast, federal statutes have exempted agricultural water pollution from regulation, leaving such regulation to the states. State regulation and enforcement have been lax. As urban and industrial pollution is brought under control, farmers¹ will find long-established practices challenged as the public and government turn

¹ In this comment, the term "farmer" will refer to any entity that creates or handles agricultural wastewater. "Farmer" means any farm owner, operator and manager, as well as any individual, association, partnership, corporation or trust that owns, manages or operates a farm. "Farmer" also includes owners, operators, and managers—both public and private—of structural systems that handle, convey, or otherwise dispose of agricultural wastewater.

their attention to water pollution and hazardous waste created by agriculture.

The problem posed by agricultural pollution can be simply stated. Agriculture applies more than eighty percent of all water used in the United States. A substantial portion of the resulting agricultural wastewater then affects the nation's lakes, rivers, streams, estuaries, and groundwater. Some of this wastewater is harmful to humans, and toxic to plants and wildlife.

This comment focuses on water pollution caused by routine application of pesticides or fertilizers and by leaching of salts or trace elements from the soil. It does not examine pollution caused by improper storage, application, or disposal of pesticides or fertilizers.

This comment analyzes liability based upon whether agricultural wastewater contaminates: 1) navigable waters;² 2) groundwater; or 3) nonnavigable surface waters³ which reach neither navigable water nor groundwater.

Liability also varies depending upon whether water is "actively" contaminated with pesticides, herbicides, or fertilizers, or "passively" contaminated with dissolved salts or trace elements leached from the soil.

The national scope of problems presented by agricultural water pollution is examined first. Kesterson National Wildlife Refuge and the San Joaquin River in California's San Joaquin Valley are examined as case studies.

This comment then analyzes liability under federal statutes for agricultural water pollution. As state regulatory approaches vary, this comment examines California statutes as examples of how one state regulates agricultural water pollution. Finally, this comment discusses liability under the traditional common law theories of trespass, nuisance, and the public trust doctrine.

The author believes that we have paid a steep price for our failure to control agricultural water pollution. Hardly a river, lake, estuary, or groundwater basin is unaffected by agricultural water pollution, and biological resources associated with these waters have been greatly impaired. Three approaches to the problem are proposed and examined. First, the Federal Water Pollution Control Act⁴ should be amended to provide for federal regulation of certain kinds of agricultural practices.

² See *infra* note 118 and accompanying text.

³ In this comment, the term "evaporation ponds" refers to nonnavigable surface waters generally.

⁴ 33 U.S.C.A. §§ 1251-1387 (West 1990).

Second, the Migratory Bird Treaty Act⁵ should be amended to allow the government to seek equitable remedies, and to provide for citizens' suits. Finally, the public trust doctrine should be used to protect water quality.

II. THE SCOPE OF AGRICULTURAL WATER POLLUTION

A. *The National Perspective*

In the United States, agricultural water pollution derives from millions of management decisions made every day by individual farmers and agricultural entities⁶ on over two million farms comprising more than 990 million acres.⁷

Irrigated agriculture is the largest water user in the United States.⁸ Agriculture accounts for over eighty-five percent of groundwater and surface water used in many of the western states.⁹

In 1974, the Soil Conservation Service estimated that farmers artificially drained 130 million acres of cropland.¹⁰ Excess water is a major problem on an estimated nineteen percent of the nation's total cropland.¹¹

Pesticides used nationwide on major crops increased from 225 million pounds of active ingredient¹² in 1964 to 558 million pounds in 1982.¹³ In 1990, California farmers applied about 182 million pounds of pesticides composed of active and inert ingredients.¹⁴

⁵ 16 U.S.C.S. §§ 701-718j (Law. Co-op. 1978 & Supp. 1992).

⁶ U.S. Environmental Protection Agency, Pollution Prevention Strategy, 56 Fed. Reg. 7849, 7854 (1991).

⁷ BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, 1991 STATISTICAL ABSTRACT OF THE UNITED STATES 644 (1991).

⁸ WILLIAM GOLDFARB, *WATER LAW* 156 (2nd ed. 1988).

⁹ *Id.*; MARC REISNER, *CADILLAC DESERT* 9 (1986); MARC REISNER & SARAH BATES, *OVERTAPPED OASIS: REFORM OR REVOLUTION FOR WESTERN WATER* 26-35 (1990); JOHN A. FOLK-WILLIAMS ET AL., *WATER IN THE WEST: WESTERN WATER FLOWS TO THE CITIES* 17, 47, 78, 116, 127, 156, and 175 (1985). Arizona: 90%; California: 85%; Colorado: 85%; New Mexico: 90%; Nevada: 90%; Texas: 83%; Utah: 80%; Washington: 81%.

¹⁰ SOIL CONSERVATION SERVICE, U.S. DEP'T OF AGRICULTURE, *DRAINAGE OF AGRICULTURAL LAND* 1 (1974).

¹¹ GLENN O. SCHWAB & RICHARD K. FREVERT, *ELEMENTARY SOIL AND WATER ENGINEERING* 5 (3rd ed. 1985).

¹² The material in a pesticide product that controls pests.

¹³ CRAIG D. OSTEN & PHILIP I. SZMEDRA, UNITED STATES DEPARTMENT OF AGRICULTURE, ECONOMIC RESEARCH SERVICE, *AGRICULTURAL PESTICIDE USE TRENDS AND POLICY ISSUES* 52 (1989).

¹⁴ Pamela J. Podger, *Fresno Tops Counties in Pesticide Use*, *FRESNO BEE*, May 30,

In 1992, the Environmental Protection Agency ("EPA") reported on water quality of thirty-six percent of the river miles, forty-seven percent of the lake acres, and seventy-five percent of the estuary square miles in the states and territories.¹⁵ Only sixty-three percent of river miles, forty-four percent of lake acres, and fifty-six percent of estuary square miles fully supported beneficial uses¹⁶ designated by the states.¹⁷ In 1990, the EPA had reported seventy percent of river miles, forty-seven percent of the lake acres, and seventy-five percent of the estuary square miles fully supported beneficial uses.¹⁸

The 1992 EPA Report found siltation,¹⁹ nutrients,²⁰ pathogens,²¹ and pesticides²² were the major water pollutants, and agriculture was the primary source of those pollutants. The EPA estimated that agriculture contributed to the failure of sixty percent of the river miles, fifty-seven percent of the lake acres, and eighteen percent of the estuary square miles to meet water quality standards.²³

1992, at A1 (citing a 1992 report by the California Environmental Protection Agency, Department of Pesticide Regulation).

¹⁵ OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL WATER QUALITY INVENTORY: 1990 REPORT TO CONGRESS 3, 17, and 47 (1992) [hereinafter NATIONAL WATER QUALITY INVENTORY].

¹⁶ *Id.* at 3. "The standard measure of water quality reported by the states is the degree to which waters support the uses for which they have been designated by the states, such as high-quality cold water fishery, contact recreation, or drinking water supply." *See id.*, at xxiii (explanation of "designated uses" and assessment methodologies utilized by the states). *See also* 33 U.S.C.A § 1313(c)(2)(A) (West 1990); *infra* note 241 and accompanying text.

¹⁷ NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 3, 17, and 47.

¹⁸ OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, NATIONAL WATER QUALITY INVENTORY: 1988 REPORT TO CONGRESS 1, 17, and 50 (1990).

¹⁹ NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 5. Siltation is the smothering of stream beds by sediments, usually from accelerated soil erosion. Forty percent of sediment discharged to surface waters comes from cropland. FRITS VAN DER LEEDEN ET AL., THE WATER ENCYCLOPEDIA 581 (1990).

²⁰ NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 5. Nutrients most often consist of phosphorus and nitrogen compounds such as those used in agricultural fertilizers. The EPA estimated that agricultural runoff contained 10,000 tons of nitrogen, phosphorus, and potassium in 1975. The EPA projects that such discharges will increase to between 15,000 and 17,000 tons by 2000. VAN DER LEEDEN, *supra* note 19, at 583.

²¹ Pathogen contamination—typically fecal coliform bacteria—may impair drinking water supply and contact recreation uses, and may come from inadequately treated sewage or runoff from pastures, feedlots, and urban areas. NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 5-6.

²² *Id.* at 6.

²³ *Id.* at 9, 23, and 53.

Although any pollutant may have toxic effects in sufficient amounts, some pollutants have adverse and long-term effects at extremely low concentrations. The latter type of pollutants are commonly called toxic pollutants. Toxic pollutants may be synthetic or naturally occurring, may persist in the environment for long periods or dissipate quickly, and may have different effects on public health and aquatic life. Many of the pesticides and trace elements found in agricultural wastewater are designated toxic substances by the EPA.²⁴

In 1992, forty-one states reported that toxic substances affected about fifteen percent of the river miles monitored for their presence.²⁵ Thirty-three states reported that roughly one-third of the lake acres tested were affected by toxic substances.²⁶ Seventeen states reported that about nineteen percent of the estuary square miles tested were affected by toxic substances.²⁷ Pesticides were a major form of the toxic substances found, and agriculture was a significant source of toxic pollution.²⁸

Fifty-six percent of the U.S. population relies on groundwater for drinking water.²⁹ In most rural areas, groundwater provides the vast majority of household water supply.³⁰ In 1992, nineteen states reported groundwater contamination caused by agricultural activities was a problem.³¹

An example of the scope, intractability, and expense of groundwater pollution is provided by Fresno, California. Fresno, which is almost entirely surrounded by irrigated farmland, pumps groundwater for all its drinking water. In 1991, sixty of the metropolitan area's 268 drinking water wells were shut down due to contamination:³² twenty-one were closed due to contamination by a pesticide, dibromochloropropane ("DBCP"),³³ and twelve were contaminated with a soil fumigant, ethylene dibromide ("EDB").³⁴ Although DBCP was canceled for most

²⁴ *Id.* at 85.

²⁵ *Id.* at 86.

²⁶ *Id.*

²⁷ *Id.* at 87.

²⁸ *Id.* at 91.

²⁹ VAN DER LEEDEN, *supra* note 19, at 303.

³⁰ NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 114.

³¹ Thirty-eight states found nitrates contaminating groundwater; 33 states found pesticides. *Id.* at 115, 116.

³² 2 CH2M HILL, FRESNO/CLOVIS METROPOLITAN WATER RESOURCES MANAGEMENT PLAN PHASE I REPORT: EXISTING WATER SUPPLY SYSTEM ASSESSMENT 3 app. B (1992).

³³ *Id.* at 36.

³⁴ *Id.* at 37.

uses in 1981,³⁵ and EDB was canceled for use as a soil fumigant in 1984,³⁶ experts believe that eventually both pesticides will contaminate all of the metropolitan area's pumping wells.³⁷ In 1992, Fresno officials estimated costs at \$1.4 million per well to install granular activated carbon treatment systems.³⁸

B. Case Study: The Kesterson National Wildlife Refuge

Kesterson National Wildlife Refuge ("Kesterson") is a clear example of the deadly potential of water pollution caused by agriculture and the failure of federal regulatory programs to address it. Although agricultural water pollution at Kesterson reached levels toxic to wildlife, no federal statute regulating water pollution or hazardous waste applied to the site.

1. Agricultural Drainage Water in the Western San Joaquin Valley

Water pollution at Kesterson presents a classic example of passive contamination, that is, water polluted with elements leached³⁹ from the soil. Salts and trace elements leach from the soil as water percolates through it. In dry climates, where natural leaching is slight, pesticides, fertilizers, salts, and trace elements remain near the surface of the soil. If these substances are not flushed by irrigation below the root zone, plants may bioaccumulate⁴⁰ them or soil conditions may become inimical or toxic to plants. Drainage is a critical variable, adequate only if there are no barriers to the downward movement of water.

³⁵ OSTEEN & SZMEDRA, *supra* note 13, at 45. See also U.S. Environmental Protection Agency, 42 Fed.Reg. 48026, 48029 (1977) (On August 12, 1977, California Department of Food and Agriculture announced a suspension of all sale and use of DBCP, urging that the public and dealers return all stocks to distributors).

³⁶ OSTEEN & SZMEDRA, *supra* note 13, at 46 (canceled for all uses except exported citrus and papaya, termites, vault fumigation, and Japanese beetle control program).

³⁷ 1 CH2M HILL, *supra* note 32, at 3-12. Groundwater flows below Fresno range from hundreds to thousands of feet per year. *Id.*

³⁸ *Id.* at 8-3.

³⁹ Leaching is the removal from the soil in solution of the more soluble materials by percolating waters. SOIL CONSERVATION SOCIETY OF AMERICA, RESOURCE CONSERVATION GLOSSARY 90 (3rd ed. 1982) [hereinafter SCSA GLOSSARY].

⁴⁰ *Id.* at 15. Bioaccumulation is a build up of specific organic or inorganic compounds within tissues of given organisms, usually applied to certain heavy metals, pesticides, or metabolites. Metabolites are substances produced by metabolism, such as urea or carbon dioxide. WEBSTER'S NEW UNIVERSAL UNABRIDGED DICTIONARY 1131 (2d ed. 1983).

In the western San Joaquin Valley, problems of leaching and drainage are intertwined. Soils are composed primarily of marine sediments containing salts and potentially toxic trace elements, including arsenic, boron, cadmium, chromium, copper, manganese, mercury, molybdenum, nickel, selenium, and zinc.⁴¹ Hot and dry growing seasons result in high evapotranspiration⁴² rates, which means plants must be heavily-irrigated. Finally, impermeable clay layers lie close to the surface. High subsurface water levels now affect 855,000 of 2,544,000 irrigable acres.⁴³ By the year 2000, high groundwater levels may adversely affect 1,000,000 acres.⁴⁴

This combination of leaching and drainage presents farmers with a dilemma. If farmers apply only as much water as plants need for evapotranspiration, salt and other substances toxic to plants will accumulate in surface soils. If farmers apply excess water to flush salts and other substances below the root zone, polluted water stops at the shallow clay layer, eventually rising back to the surface after successive irrigations.⁴⁵

In the western San Joaquin Valley, if you irrigate the land, you must drain it.⁴⁶ The attempt to dispose of this agricultural wastewater led to Kesterson.

⁴¹ U.S. DEPARTMENT OF THE INTERIOR, A MANAGEMENT PLAN FOR AGRICULTURAL SUBSURFACE DRAINAGE AND RELATED PROBLEMS ON THE WESTSIDE SAN JOAQUIN VALLEY 39-40 (1990).

⁴² Evapotranspiration is the combined loss of water from a given area and during a specific period of time by evaporation from the soil surface and by transpiration (the photosynthetic and physiological process by which plants release water into the air in the form of water vapor) from plants. SCSA GLOSSARY, *supra* note 39, at 56 and 178.

⁴³ U.S. DEP'T OF INTERIOR, *supra* note 41, at 20.

⁴⁴ *Id.* at 20-21.

⁴⁵ State of California, State Water Resources Control Board, Order WQ 85-1 12-13 (Feb. 5, 1985), (LEXIS, States Library, CaEnv File, 1985 Cal. ENV LEXIS 16) [hereinafter SWRCB Order].

⁴⁶ See *id.* at 12. "Many flourishing and early civilizations fell principally because of an inability to understand and cope with salt balance and drainage problems. The Tigris and Euphrates river valleys in ancient Mesopotamia became mostly desert because of the accumulation of salts in the surface soil layers. Relics of abandoned irrigation systems, alkaline areas, and salt accumulation extending from the Sahara desert through ancient Persia show that a lack of proper drainage eventually resulted in the physical and economic ruin of vast agriculturally productive areas" (quoting State of California, Department of Water Resources Bulletin 127-74 2 (1974)); see also MARC REISNER, CADILLAC DESERT 473-88 (1986).

2. Kesterson National Wildlife Refuge

In late 1982 and early 1983, U.S. Fish and Wildlife Service ("FWS") biologists discovered high rates of severely deformed and dead waterfowl at Kesterson, a national wildlife refuge. Kesterson consisted of twelve interconnected ponds covering approximately 1,280 acres.⁴⁷ Kesterson was developed by the U.S. Bureau of Reclamation ("the Bureau") as a reservoir to contain agricultural wastewater from its San Luis Drain, even though the FWS designated and managed it as a wildlife refuge.⁴⁸ The San Luis Drain was to drain lands served by the Central Valley Project, an irrigation project constructed and managed by the Bureau to provide water to San Joaquin Valley desert lands.⁴⁹

In 1978, subsurface tile drainage water⁵⁰ collected from 8,000 acres in the Westlands Water District began flowing into the San Luis Drain for storage at Kesterson. Before 1981, Kesterson had supported largemouth and striped bass, catfish, carp, and mosquito fish. By 1981, only mosquito fish remained. Laboratory tests of mosquito fish tissue revealed concentrations of selenium as high as 66,000 parts per billion ("ppb"). Tests also revealed that San Luis Drain water was deadly to insects at a concentration of only twenty-five percent and toxic to fish at full strength.⁵¹

⁴⁷ SWRCB Order, *supra* note 45, at 15. FWS biologists found: more than 40% of the nests contained at least one dead embryo; some 20% of the nests yielded at least one embryo or chick with multiple deformities; and coots and eared grebes had a 64% rate of embryo death or deformity. TOM HARRIS, *DEATH IN THE MARSH* 4, 12 (1991).

⁴⁸ SWRCB Order, *supra* note 45, at 13-16. The Central Valley of California, comprised of the San Joaquin and Sacramento Valleys, supports 60% of the waterfowl that use the Pacific Flyway, one of the nation's three major migratory bird corridors. TOM HARRIS, *DEATH IN THE MARSH* 4 (1991).

⁴⁹ SWRCB Order, *supra* note 45, at 16. The San Luis Drain was originally planned to run 207 miles from Kettleman City in the Tulare Lake Basin to the Suisun Bay in the Sacramento-San Joaquin Delta. By 1975, only 85 miles had been built, terminating at Kesterson. *Id.* at 13-16.

⁵⁰ AMERICAN FARMLAND TRUST, *ERODING CHOICES—EMERGING ISSUES: THE CONDITION OF CALIFORNIA'S AGRICULTURAL LAND RESOURCES* 52 (1986). Tile drain systems are composed of pipes laid into the ground at a specified depth and grade. The pipes are typically clay or plastic, and perforated to collect excess water. When soil water level rises to the level of the drains, it flows into larger collector pipes which convey it to sumps for pumping to the surface.

⁵¹ SWRCB Order, *supra* note 45, at 17. Recent modeling suggests that waterborne selenium at 1 ppb may pose an unacceptable risk to semi-aquatic and terrestrial vertebrates that use aquatic habitats, e.g., fish-eating birds and mammals. Jeffrey A. Peterson & Alan V. Nebeker, *Estimation of Waterborne Selenium Concentrations That Are Toxicity Thresholds for Wildlife*, 23 *ARCHIVES OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY* 159 (1992).

Laboratory tests of Kesterson water revealed that: 1) selenium concentrations exceeded the EPA primary drinking water standard; 2) selenium, mercury, and nickel concentrations in parts of Kesterson exceeded EPA ambient water criteria for protection of human health; and 3) concentrations of hexavalent chromium, zinc, copper, and cadmium, in some instances, exceeded EPA water quality criteria for the protection of freshwater aquatic life.⁵² Because selenium accumulates and biomagnifies⁵³ in the food chain, some organisms had tissue concentrations of selenium at levels 50 to 100 times normal.⁵⁴

The San Luis Drain was concrete-lined. However, Kesterson ponds were unlined. Kesterson was situated near several drinking water wells. Tests showed sixty percent of the drainwater flowing into Kesterson water was seeping into groundwater.⁵⁵ Groundwater concentrations of boron, chromium and nickel were unchanged to a depth of forty feet from surface concentrations.⁵⁶ Subsurface seepage of contaminated Kesterson water threatened to reach nearby tributaries of the San Joaquin River.⁵⁷ The river flows less than three miles from Kesterson.

On April 27, 1984, Robert James Claus, an adjacent landowner, petitioned the local Regional Water Quality Control Board to have Kesterson declared a public nuisance and the Bureau ordered to clean up the site. The Regional Board denied the petition, choosing instead to continue an ongoing monitoring program to aid in developing regulations for agricultural drainage water.⁵⁸ Claus appealed to the State Water Resources Control Board. The Board ordered the Bureau to

⁵² SWRCB Order, *supra* note 45, at 36-37.

⁵³ The uptake and accumulation of a chemical by plants and animals through their diet, resulting in whole-body concentrations that increase at successively higher trophic levels of the food chain. U.S. DEP'T OF INTERIOR, *supra* note 41, at 179. "Trophic level" refers to the level in a nutritive series of an ecosystem in which a group of organisms in a certain stage in the food chain secures food in the same general manner. The first of lowest trophic level consists of producers (green plants); the second level of herbivores; the third level of secondary carnivores; and the last level of reducers (organisms, usually bacteria or fungi, that break down complex material into simpler compounds). SCSA GLOSSARY, *supra* note 39, at 133, 179.

⁵⁴ SWRCB Order, *supra* note 45, at 41.

⁵⁵ *Id.* at 48, 54 n.75, and 56.

⁵⁶ *Id.* at 51-52.

⁵⁷ *Id.* at 54.

⁵⁸ As of 1984, fifteen years after California enacted its own water quality legislation and twelve years after Congress amended the Clean Water Act, California had yet to regulate these discharges of agricultural wastewater. *Id.* at 24. See *infra* note 245 and accompanying text for explanation of California's waste discharge requirement program.

abate and clean up Kesterson on February 5, 1985, after finding that Kesterson wastewater was hazardous waste,⁶⁹ that the Bureau's operation of Kesterson was a public nuisance,⁶⁰ and that storage of hazardous waste at Kesterson violated state regulations⁶¹ governing the disposal of hazardous waste onto land and California's Toxic Pits Cleanup Act.⁶²

The Bureau of Reclamation initially contested California's authority, claiming federal law exempted agricultural wastewater from regulation as hazardous waste. However, on March 15, 1985, the Bureau agreed to cease accepting drainwater and to clean up Kesterson, stating that it feared potential criminal liability for its employees under the Migratory Bird Treaty Act.⁶³

The Bureau successfully argued against removal and storage of the contaminated soil in a landfill because of an estimated cost of \$150 million.⁶⁴ Instead, the Bureau spent \$26.6 million to place over one million cubic yards of fill material on 713 acres of Kesterson, and anticipates spending \$2.8 million annually for monitoring.⁶⁵

Nevertheless, Kesterson continues to present a toxic risk to wildlife. Some birds and mammals inhabiting filled uplands have concentrations of selenium in their tissue at levels associated with reproductive failure and chronic poisoning, probably bioaccumulated from plants and animals in the food chain.⁶⁶

In December 1991, the Bureau—despite its experience at Kesterson—proposed to construct 120 acres of new ponds to receive selenium-laden water from tile-drained western San Joaquin Valley farms. Under this proposal, ponds will be used to temporarily store drainage wastewater that will be discharged into the San Joaquin River during floods.⁶⁷

Kesterson was not an isolated phenomenon in the San Joaquin Val-

⁶⁹ *Id.* at 67-73, and 133.

⁶⁰ *Id.* at 130-31.

⁶¹ See *infra* note 290 and accompanying text.

⁶² SWRCB Order, *supra* note 45, at 131-33. See *infra* note 261 and accompanying text.

⁶³ HARRIS, *supra* note 47, at 35-39.

⁶⁴ State of California, State Water Resources Control Board, Order No. WQ 89-16 (Sept. 21, 1989), (LEXIS, States Library, CaEnv File, 1985 Cal. ENV LEXIS 18, at *24).

⁶⁵ Russell Clemings, *Drainage Plan May Create Problems*, FRESNO BEE, Dec. 29, 1991, at A1, A18.

⁶⁶ State of California, State Water Resources Control Board, *supra* note 64, at 13-19.

⁶⁷ Clemings, *supra* note 65.

ley,⁶⁸ nor is the problem of selenium-poisoned agricultural drainage water isolated to California.⁶⁹ After Kesterson, the Bureau investigated selenium contamination for its irrigation projects in the seventeen western contiguous states.⁷⁰ In twenty-four of the twenty-six sites studied, selenium levels in drainage water were sufficiently high to be toxic to wildlife now or to become toxic in the future.⁷¹

C. Case Study: The San Joaquin River

In July 1991, the Central Valley Regional Water Quality Control Board published a report on the toxicity of water taken from the San Joaquin River and its tributaries at seventeen sites.⁷²

The water was bioassayed⁷³ for chronic and acute toxicity on three

⁶⁸ Tulare Lake Basin lies less than 100 miles south of Kesterson. Historically, the basin featured four lakes totalling 377,000 acres. Today, dams and diversions largely dry up the flow of fresh water into the lakes. The lakebeds themselves are intensively farmed.

Scattered throughout the basin, twenty-five evaporation ponds comprising 7,100 acres store agricultural subsurface drainage collected from 59,000 acres. The Tulare Lake evaporation ponds represent almost six times the acreage of Kesterson. The ponds, which are owned by private farming operations, one federal agency, and one state agency, receive wastewater from several farms. An additional 1,990 acres of evaporation ponds are currently proposed for development. Tulare Lake Basin evaporation ponds are particularly attractive to wildlife because so little natural wetland or riparian habitat remains in the basin.

Selenium is the primary source of contamination in Tulare Lake Basin evaporation ponds. Individual ponds have selenium concentrations ranging from one to 1,000 ppb. Dissolved selenium levels from two to eight ppb have been associated with bird reproductive failures. Boron has been measured in the aquatic food chain in and around the evaporation ponds at concentrations up to 1,500 parts per million ("ppm"). Boron affects bird egg "hatchability" at 1,000 ppm.

In addition, the evaporation ponds contain elevated concentrations of arsenic, molybdenum, uranium, and vanadium. The effect of the latter elements on aquatic flora and fauna is unknown. CH2M HILL ET AL., DEPARTMENT OF WATER RESOURCES, DRAFT CUMULATIVE IMPACTS OF AGRICULTURAL EVAPORATION BASINS ON WILDLIFE 1-3, 2-1, 3-7 to 3-10, 3-19, 4-8, and 4-12 (1991).

⁶⁹ HARRIS, *supra* note 47, at 198-201.

⁷⁰ *Id.* at 49-50. Bureau of Reclamation irrigation projects are strewn throughout the seventeen contiguous states west of the 100th meridian. These states receive an annual average precipitation of only 13 inches. *Id.* at 214-15. For an excellent history of federal reclamation projects see MARG REISNER, CADILLAC DESERT (1986).

⁷¹ HARRIS, *supra* note 47, at 214-15.

⁷² CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, SAN JOAQUIN WATERSHED BIOASSAY RESULTS: 1988-90 7, 26 (1991).

⁷³ Bioassay is the employment of living organisms to determine the biological effects of some substance, factor, or condition. SCSA GLOSSARY, *supra* note 39, at 15.

species: one species of fish, one microscopic invertebrate (insect), and a form of alga.⁷⁴

From 1988 to 1990, forty-five percent of the river's flow across sixty miles was comprised of discharges from seventy-six agricultural drains.⁷⁵ These drains discharge a combination of irrigation operational spill water,⁷⁶ agricultural tailwater,⁷⁷ and tile drainage water.⁷⁸ In addition, several major tributaries contained flows made up primarily of tailwater, irrigation operational spill water, and tile drain water.⁷⁹ Two tributaries, Salt and Mud Sloughs, carry selenium-contaminated tile drain water to the river from the western San Joaquin Valley.⁸⁰

Sixteen percent of water samples collected from creeks, sloughs, and agricultural drains were toxic to minnows.⁸¹ The primary cause of mortality appeared to be ammonia from wastewater treatment plants and dairy runoff.⁸² Twenty-four percent of all samples collected were toxic to the microscopic invertebrate.⁸³ Analysis of drain and river water samples found four pesticides in concentrations that exceeded EPA-recommended freshwater standards to protect aquatic life.⁸⁴

The Central Valley Regional Water Quality Control Board has never developed water quality objectives for any of the pesticides de-

⁷⁴ CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, *supra* note 72, at 5. The three species tested were: 1) a small fish, the fat head minnow (*Pimephales promelas*); 2) a microscopic invertebrate, (*Ceriodaphnia dubia*); and 3) a green alga (*Selenastrum capricornutum*).

⁷⁵ *Id.* at 4.

⁷⁶ Irrigation supply water discharged as a result of canal operations, i.e., excess canal water not used for irrigation that is subsequently "spilled" or returned to the river, usually at the end of a canal. *Id.* at 3.

⁷⁷ Water from irrigated orchard and row crops. *See also* SCSA GLOSSARY, *supra* note 39, at 173. Tailwater is surface water that reaches the lower end of a field. *Id.*

⁷⁸ CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, *supra* note 72, at 4. *See also* note 50.

⁷⁹ *Id.* at 3-4.

⁸⁰ *Id.* at 3.

⁸¹ *Id.* at 10.

⁸² *Id.* at 11-13.

⁸³ *Id.* at 15.

⁸⁴ The four pesticides were: 1) carbofuran, an insecticide used on alfalfa (in the river the concentration exceeded the EPA standard by a factor of two); 2) carbaryl, an insecticide (in one tributary the concentration exceeded the EPA standard by a factor of 19); 3) diazinon, an insecticide (in one tributary the concentration exceeded the EPA standard by a factor of 141); 4) parathion, an insecticide (in one tributary the concentration exceeded EPA standards by a factor of 177). A herbicide, diuron, was also found in high concentrations. *Id.* at 17-20.

tected during the study.⁸⁵ The basin water quality plan provides that no chlorinated hydrocarbon pesticides shall be present in detectable quantities in the San Joaquin River. Yet, the report reveals a large number of these pesticides are present at various locations in the basin.⁸⁶

In fact, the San Joaquin River is of such poor quality that beneficial uses cannot be protected and water quality objectives cannot be met.⁸⁷ The major cause of this pollution is agricultural drainwater:⁸⁸ 50,000 to 75,000 acre-feet⁸⁹ of the river's flow consist of tile drainage water from the western San Joaquin Valley.⁹⁰ Nevertheless, the state has waived adoption of waste discharge requirements⁹¹ for entities that discharge agricultural wastewater into the San Joaquin River.⁹²

III. LIABILITY UNDER FEDERAL STATUTES FOR AGRICULTURAL WATER POLLUTION

A. *The Clean Water Act*

1. Federal Regulation Under the CWA

In 1948, Congress enacted the Federal Water Pollution Control Act⁹³ to provide for federal regulation of interstate navigable waters. The federal government based enforcement on ambient water quality standards developed by the states. States based water quality standards on "beneficial uses" assigned to individual waters, ranging from Class A (swimming) to Class D (agricultural and industrial use).⁹⁴ The 1948 Act proved toothless even for the limited number of waters it regulated. As one writer commented:

[w]ater pollution control law prior to 1972 gave a right to discharge until waters were polluted, meaning until state-set water quality standards were violated. The public had a right to water only as clean as the state dictated in its water quality standards. Pollution was defined as an excessive dis-

⁸⁵ *Id.* at 18.

⁸⁶ SWRCB Order, *supra* note 45, at 107-8.

⁸⁷ *Id.* at 108.

⁸⁸ *Id.*

⁸⁹ SCSA GLOSSARY, *supra* note 39, at 2. The volume of water necessary to cover one acre to a depth of one foot (43,560 cubic feet).

⁹⁰ SWRCB Order, *supra* note 45, at 109.

⁹¹ *See infra* note 246 and accompanying text.

⁹² SWRCB Order, *supra* note 45, at 112-13.

⁹³ Act of June 30, 1948, Pub. L. No. 80-845, ch. 750, 62 Stat. 1155 (codified as amended at 33 U.S.C.A. §§ 1251 to 1387 (West 1990)).

⁹⁴ GOLDFARB, *supra* note 8, at 171.

charge—excessive in the sense that it disqualified the water-body for its intended purpose.⁹⁵

Only one suit was brought by the federal government under authority of the Act between 1948 and 1971.⁹⁶ Probably the most infamous example of the failure of this system was the Cuyahoga River, designated by Ohio for waste disposal use. No action was undertaken to clean the Cuyahoga until it became so polluted with industrial waste that it caught fire.⁹⁷

In 1972 and 1977, Congress amended the Federal Water Pollution Control Act ("CWA") to embody a new approach to regulation of water pollution. The CWA's objective is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."⁹⁸ Three main goals were: 1) to eliminate discharge of pollutants⁹⁹ into navigable waters by 1985;¹⁰⁰ 2) to attain, as an interim goal, fishable and swimmable water quality by 1983;¹⁰¹ and, 3) to prohibit the discharge of toxic pollutants in toxic amounts.¹⁰²

While the amended CWA retained vestiges of the old regulatory scheme for some sources of water pollution, it established a new system of standards,¹⁰³ permits,¹⁰⁴ and enforcement mechanisms¹⁰⁵ to regulate water pollution. Effluent limitations¹⁰⁶ were developed and applied to all point source¹⁰⁷ discharges regardless of the receiving water's ambient quality. In short, the federal control strategy shifted from abatement actions, triggered when pollution levels exceeded ambient water quality standards, to direct regulation of pollution sources through permits containing effluent limitations.

⁹⁵ *Id.* at 172.

⁹⁶ JOHN E. BONINE & THOMAS O. MCGARITY, *THE LAW OF ENVIRONMENTAL PROTECTION* 255 (1984).

⁹⁷ GOLDFARB, *supra* note 8, at 171.

⁹⁸ 33 U.S.C.A. § 1251(a) (West 1991).

⁹⁹ Man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water. *Id.* § 1362(19).

¹⁰⁰ *Id.* § 1251(a)(1).

¹⁰¹ *Id.* § 1251(a)(2).

¹⁰² *Id.* § 1251(a)(3).

¹⁰³ *Id.* §§ 1311-30.

¹⁰⁴ *Id.* §§ 1341-45.

¹⁰⁵ *Id.* § 1319.

¹⁰⁶ An effluent limitation is any restriction (including any schedule of compliance) established by the EPA or a state on quantities, rates, concentrations of chemical, physical, biological, and other constituents which may be discharged from point sources into water. *Id.* § 1362(11).

¹⁰⁷ See *infra* note 115 and accompanying text.

Under the CWA, federal regulation focuses primarily on control of discharges from publicly-owned wastewater treatment plants and industrial sources.¹⁰⁸ No person may discharge any pollutant from a point source into navigable waters without a National Pollution Discharge Elimination System ("NPDES") permit.¹⁰⁹ A NPDES permit does not convey an absolute right to discharge; it conveys a temporary license to discharge pollutants within the effluent limitations set forth in the permit.¹¹⁰ The EPA has primary and ongoing¹¹¹ authority to administer the NPDES permit system, although it may delegate management of the program to the states.¹¹²

2. The Agricultural Wastewater Exemption

Two facts are important to understanding farmer liability under the Clean Water Act. First, the CWA only regulates discharges of pollutants into navigable waters.¹¹³ Second, the NPDES permit system only regulates discharges from point sources.¹¹⁴ A "point source" is:

[a]ny discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container . . . concentrated animal feeding operation . . . from which pollutants are or may be discharged. This term does not include agricul-

¹⁰⁸ GOLDFARB, *supra* note 8, at 177-78. Since 1972, the federal government has invested almost \$56 billion in municipal wastewater treatment. NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 134. One study estimates the federal government, businesses and individuals have collectively invested more than \$300 billion in water pollution control between 1972 and 1987. Lyse D. Helsing, *Water Treatment: Solving the Second Generation of Environmental Problems*, CHEMICAL WEEK, May 18, 1988, at 18, (LEXIS, Nexis Library, Mags File). Cost estimates to complete modernization of the nation's aging and obsolete municipal water and sewer systems range from \$100 to \$500 billion. Rudy Abramson, *Billions Said Needed for Water Systems*, THE FRESNO BEE, Dec. 8, 1992, at C14.

¹⁰⁹ 33 U.S.C.A. §§ 1311(a) and 1342 (West 1990).

¹¹⁰ *Id.* § 1342(a), (b).

¹¹¹ *Id.* § 1342(a), (d).

¹¹² In order to receive EPA approval to administer the NPDES permit system, a state must: 1) have in place a program consistent with EPA regulations, and 2) possess the resources and statutory authority to implement it. *Id.* §§ 1342(b), (c), and 1370.

¹¹³ *United States v. GAF Corp.*, 389 F. Supp. 1379, 1383 (S.D. Tex. 1975). *See also* *Quivira Mining Company v. United States Environmental Protection Agency*, 765 F.2d 126, 130 (10th Cir. 1985), *cert. denied*, 474 U.S. 1055 (1986) (polluted subsurface flow that reaches navigable waters which can be traced back to a point source may be regulated under the CWA).

¹¹⁴ 33 U.S.C.A. § 1311(b)(1)(A) (West 1990); *see also* *Appalachian Power Co. v. Train*, 545 F.2d 1351, 1373-74 (4th Cir. 1976).

tural stormwater discharges and return flows from irrigated agriculture.¹¹⁶

The CWA regulates point source discharges of pollutants¹¹⁶ to inland navigable waters, waters contiguous to both land and sea, or the ocean.¹¹⁷ NPDES permits are only required for discharges to "navigable waters,"¹¹⁸ including: rivers, streams, and tributaries;¹¹⁹ lakes and ponds;¹²⁰ and wetlands.¹²¹ Generally, discharges to groundwater or nonnavigable waters are not regulated.

The EPA cannot require a NPDES permit for discharges composed entirely of return flows from irrigated agriculture.¹²² The EPA cannot

¹¹⁶ 33 U.S.C.A. § 1362(14) (West 1990) (emphasis added).

¹¹⁶ Pollutants regulated include ". . . rock, sand . . . and agricultural waste discharged into water." *Id.* at § 1362(6).

¹¹⁷ *Id.* § 1362(12).

¹¹⁸ *Id.* § 1362(7) (waters of the United States, including the territorial seas); *see also* 40 C.F.R. § 122.2; *see generally* United States v. Riverside Bayview Homes, Inc., 474 U.S. 121 (1985).

¹¹⁹ United States v. Earth Sciences, Inc., 599 F.2d 368, 375 (10th Cir. 1979) ("It seems clear Congress intended to regulate discharges into every creek, stream, river or body of water that in any way may affect interstate commerce."); People of St. of Cal., etc. v. Environmental Pro. Agcy., 511 F.2d 963, 964-65 n.1 (9th Cir. 1975), *rev'd on other grounds*, 426 U.S. 200 (1976) (Congress intended to extend the Act's jurisdiction to include all tributaries of rivers without regard to whether the individual waters affect interstate commerce.); United States v. Oxford Royal Mushroom Products, Inc., 487 F. Supp. 852, 854-55 (E.D. Penn. 1980) (for a stream to be navigable under the CWA does not require navigability in fact); Com. of Puerto Rico v. Alexander, 438 F. Supp. 90, 95 (D.D.C. 1977) (under CWA, navigable waters are not defined by traditional test of navigability but include all waters that are part of the hydrological cycle).

¹²⁰ Minnehaha Creek Watershed Dist. v. Hoffman, 597 F.2d 617, 624 (8th Cir. 1979); United States v. D'Annolfo, 474 F. Supp. 220, 222-23 (D. Mass. 1979).

¹²¹ United States v. Riverside Bayview Homes, Inc., 474 U.S. 121, 135 (1985).

¹²² The term "irrigation return flow" is not defined in the CWA. Prior to 1977, the EPA regulated discharges of return flows from irrigated agriculture. *See supra* note 125. EPA defined these 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." S. REP. NO. 370, 95th Cong., 1st Sess. 4 (1977), *reprinted in* 1977 U.S.C.C.A.N. 4360.

40 C.F.R. § 125.53, subsequently repealed, read: "The term 'irrigation return flow' means 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." (*quoted in* United States v. Frezzo Bros., Inc., 491 F. Supp. 1339, 1341 (1980 E.D. Penn.) *rev'd on other grounds* 642 F.2d 59.)

"Return flow" is defined in the SCSA GLOSSARY, *supra* note 39, at 136, as "[t]hat portion of the water diverted from a stream that finds its way back to the stream channel either as surface or underground flow."

In *City of Boulder v. Boulder & Left Hand Ditch Co.*, 557 P.2d 1182, 1185 (Colo. 1977), the Colorado Supreme Court held return flow not to be wastewater (i.e., irriga-

directly or indirectly require any state to require such a permit.¹²³ States, however, may regulate such discharges under their own programs.¹²⁴

Congress clearly exempted return flows from irrigated agriculture and agricultural stormwater discharges from federal regulation, leaving such regulation to the states.¹²⁵ The national scope of agricultural water pollution indicates the states have failed to adequately address the problem. If the history of federal regulation of water pollution is any guide, Congress may yet amend the Act to directly regulate agricultural water pollution.

In summary, farmers are exempt from regulation under the federal NPDES permit system for discharges of agricultural wastewater to navigable waters.

B. The Resource Conservation and Recovery Act

In 1976, Congress enacted the Resource Conservation and Recovery Act¹²⁶ ("RCRA") to address problems¹²⁷ associated with the disposal of the three to four billion tons of waste generated each year.¹²⁸ The EPA has determined that forty million tons of this material constitutes "haz-

tion water not absorbed into the ground which is collected in a waste ditch); rather, return flow is irrigation water seeping back to a stream after it has gone underground to perform its nutritional function.

Finally, William Goldfarb equates irrigation return flows with tailwater; i.e., water that reaches the lower end of a field. GOLDFARB, *supra* note 8, at 20.

¹²³ 33 U.S.C.A. § 1342(l)(1) (West 1990).

¹²⁴ *Id.* §§ 1342(b), (c), and 1370.

¹²⁵ From 1972 to 1977, the federal government could regulate through the NPDES permit system irrigation return flow discharged into navigable waters through discrete conveyances. In 1977, Congress amended the CWA to exempt irrigation return flow from regulation as a "point source." Clean Water Act of 1977, Pub. L. No. 95-217, § 33(b), 91 Stat. 1577 (1977). In 1987, Congress again amended the CWA to exempt agricultural stormwater discharges. Water Quality Act of 1987, Pub. L. No. 100-4, § 503, 101 Stat. 75 (1987).

¹²⁶ 42 U.S.C.A. §§ 6901-6992(k) (West 1990).

¹²⁷ *Id.* § 6901(b). Congress found, in part, that: disposal of hazardous waste in or on the land without careful planning and management can present a danger to human health and the environment; open dumping contaminates drinking water from underground and surface supplies; inadequate control of hazardous waste will result in substantial risks to human health and the environment; cleanup of hazardous waste improperly managed in the first instance is likely to be expensive, complex, and time consuming; and land disposal, particularly landfill and surface impoundment, should be the least favored method for managing hazardous wastes. *Id.*

¹²⁸ BONINE & MCGARITY, *supra* note 96, at 801.

ardous wastes."¹²⁹ Under the RCRA, the EPA must issue regulations for managing hazardous wastes from "the cradle to the grave," including:

- 1) identification and listing of hazardous wastes;¹³⁰
- 2) standards applicable to generators,¹³¹ transporters,¹³² owners and operators of facilities handling hazardous wastes;¹³³
- 3) permits for treatment, storage, or disposal of hazardous waste;¹³⁴
- 4) guidelines for authorization of state programs to implement and enforce state hazardous waste management programs in lieu of federal management.¹³⁵

Under RCRA, a "hazardous waste" is defined as solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may: 1) cause, or significantly contribute to an increase in serious, irreversible, or incapacitating reversible, illnesses; or 2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.¹³⁶ "Solid waste" includes solid or liquid material resulting from agricultural operations, but does not include solid or dissolved materials in irrigation return flows.¹³⁷

Under RCRA, Congress expressly exempted irrigation return flows from regulation as hazardous wastes. Although the EPA has not sought to regulate irrigation return flows as hazardous waste,¹³⁸ it has set maximum concentration levels for many of the elements typically found in agricultural wastewater, including arsenic, cadmium, chromium, mercury, nickel, and selenium.¹³⁹

In summary, farmers are exempt from regulation under RCRA for hazardous substances contained in agricultural wastewater.

¹²⁹ *Id.* at 798.

¹³⁰ 42 U.S.C.A. § 6921 (West 1990).

¹³¹ *Id.* §§ 6921(d), 6922.

¹³² *Id.* § 6923.

¹³³ *Id.* § 6924.

¹³⁴ *Id.* § 6925.

¹³⁵ *Id.* §§ 6926-6939b.

¹³⁶ *Id.* § 6903(5) (emphasis added).

¹³⁷ *Id.* § 6903(27).

¹³⁸ Environmental Protection Agency Identification and Listing of Hazardous Waste, 40 C.F.R. § 261.4(a)(3) (1991).

¹³⁹ *Id.* § 261.24 (1991).

C. *The Comprehensive Environmental Response, Compensation, and Liability Act*

1. Provisions of the CERCLA

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act¹⁴⁰ ("CERCLA") to address cleanup of abandoned and inactive hazardous waste disposal facilities.¹⁴¹ CERCLA is not a regulatory statute per se. Rather, it creates mechanisms to clean up facilities¹⁴² whenever there is a release or threatened release into the environment¹⁴³ of hazardous substances and to establish liability for past improper disposal of hazardous wastes.¹⁴⁴

CERCLA has four basic elements. First, CERCLA created the Hazardous Substances Trust Fund ("Superfund") to finance government cleanup operations.¹⁴⁵ Second, the federal government may clean up sites containing hazardous substances,¹⁴⁶ then seek to recover cleanup costs from responsible parties.¹⁴⁷ Only those sites on the National Priorities List are eligible for Superfund money.¹⁴⁸ Third, the federal government may seek equitable relief in the event of an "imminent and substantial endangerment to public health or welfare or the environment" caused by releases or threatened releases of hazardous sub-

¹⁴⁰ 42 U.S.C.A. §§ 9601-9675 (West 1990).

¹⁴¹ *McClellan Ecological Seepage Situation v. Cheney*, 763 F. Supp. 431, 433 (E.D. Cal. 1989) ("a RCRA permit is not required with respect to treatment, storage, or disposal of hazardous wastes that occurred prior to November 19, 1980); *see also* 45 Fed. Reg. 12,747 (Feb. 26, 1980) ("RCRA Subtitle C Regulations do not cover . . . abandoned sites"); 45 Fed. Reg. 33,068 (May 19, 1980) ("[t]he agency's intent is not to regulate under Subtitle C portions of facilities closed before the effective date of the regulations").

¹⁴² A facility is any well, pit, lagoon, impoundment, ditch, or any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise comes to be located. 42 U.S.C.A. § 9601(9) (West 1990).

¹⁴³ "Environment" includes "any surface water, ground water, drinking water supply, land surface or subsurface strata within the United States or under the jurisdiction of the United States." *Id.* § 9601(8).

¹⁴⁴ *BONINE & MCGARITY*, *supra* note 96, at 1038.

¹⁴⁵ 42 U.S.C.A. § 9632(b)(1)(A) (West 1982). This section was repealed and replaced as 42 U.S.C.A. § 9611 by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1615, 1652, 1692, 1774 (1986), codified at 42 U.S.C.A. §§ 6907-75 (West 1990).

¹⁴⁶ 42 U.S.C.A. § 9604 (West 1990).

¹⁴⁷ *Id.* § 9607.

¹⁴⁸ *Id.* § 9605.

stances.¹⁴⁹ Fourth, CERCLA imposes strict liability¹⁵⁰ on current and past facility owners or operators, on those who transported the hazardous substances to an unsafe facility, and on those who generated the hazardous substances.¹⁵¹ Courts have extended liability to lenders under certain conditions.¹⁵²

Responsible parties are jointly and severally liable¹⁵³ for: 1) all costs of removal or remedial action incurred by the federal or state government; 2) response costs incurred by private parties; 3) natural resources damages; and 4) costs of health assessment studies.¹⁵⁴ Only innocent purchasers who have made reasonable investigations are insulated from liability.¹⁵⁵ For costs to be recoverable, removal and/or remedial action must be consistent with the National Contingency Plan, which prescribes procedures for selecting and implementing a cleanup plan.¹⁵⁶

As noted above, responsible parties may be required to pay for restoring, rehabilitating, replacing, or assessing damage to natural resources.¹⁵⁷ CERCLA defines "natural resources" as "land, fish, wildlife, biota,¹⁵⁸ air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, . . . any State or local government, any foreign government, any Indian tribe"¹⁵⁹

Defenses to CERCLA liability are limited to acts of God, acts of war, acts or omissions of a third party if the defendant proves due care or reasonable precautions were taken, or any combination of the

¹⁴⁹ *Id.* § 9606.

¹⁵⁰ *B. F. Goodrich Co. v. Murtha*, 958 F.2d 1192, 1198 (2nd Cir. 1992); *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 804-7 (S.D. Ohio 1983).

¹⁵¹ 42 U.S.C.A. § 9607(a) (West 1990).

¹⁵² *See* *United States v. Maryland Bank & Trust Co.*, 632 F. Supp. 573, 577-80 (D. Md. 1986) (Superfund site created while bank had security interest only; bank subsequently foreclosed and purchased property at foreclosure sale); *see generally* Murphy, *The Impact of 'Superfund' and Other Environmental Statutes on Commercial Lending and Investment Activities*, 41 BUS. LAW 1133 (1986).

¹⁵³ *B. F. Goodrich Co.*, 958 F.2d at 1198; *United States v. A & F Materials Co., Inc.*, 578 F. Supp. 1249, 1254-57 (S.D. Ill. 1984).

¹⁵⁴ 42 U.S.C.A. §§ 9607(a)(4)(A)-(D) (West 1990).

¹⁵⁵ *Id.* §§ 9601(35)(B), 9607(b)(3).

¹⁵⁶ *Id.* § 9607(a).

¹⁵⁷ *Id.* §§ 9607(a)(4)(C), 9607(f)(1); *see generally* *State of Ohio v. U.S. Dept. of the Interior*, 880 F.2d 432 (D.C. Cir. 1989).

¹⁵⁸ The flora and fauna of a region. SCSA GLOSSARY, *supra* note 39, at 16.

¹⁵⁹ 42 U.S.C.A. § 9601(16) (West 1990).

three.¹⁶⁰

“Hazardous substances”¹⁶¹ that trigger CERCLA are those designated under section 9602 or designated under similar provisions in the CWA,¹⁶² the RCRA,¹⁶³ the Clean Air Act,¹⁶⁴ or the Toxic Substances Control Act.¹⁶⁵ A hazardous substance need only be listed under one of the five environmental statutes to be a hazardous substance for purposes of CERCLA.¹⁶⁶ The EPA has listed over 700 hazardous substances, including arsenic, cadmium, copper, mercury, nickel, selenium, zinc, and their compounds, as well as many herbicides, pesticides, fungicides, and rodenticides.¹⁶⁷ Only two substances—natural gas and petroleum, including crude oil—are excluded from the definition of hazardous substance.¹⁶⁸ CERCLA liability does not vary depending upon the source of wastes; it matters not whether a hazardous substance originates from an industrial, commercial, municipal, agricultural, or household source.¹⁶⁹

CERCLA liability is not limited to sites placed on the National Priority List by the federal government. CERCLA also provides a private right of action¹⁷⁰ to recover facility cleanup costs from current owners or operators, owners or operators at time of disposal, persons who arranged for the disposal, and transporters who selected the disposal site.¹⁷¹

¹⁶⁰ *Id.* § 9607(b).

¹⁶¹ *Id.* § 9601(14).

¹⁶² 33 U.S.C.A. §§ 1321(b)(2)(A), 1317(a) (West 1990).

¹⁶³ 42 U.S.C.A. § 6921 (West 1990).

¹⁶⁴ 42 U.S.C.A. § 7412 (West 1990).

¹⁶⁵ 15 U.S.C.A. § 2606 (West 1990).

¹⁶⁶ *See B. F. Goodrich Co.*, 958 F.2d at 1200; *Eagle-Picher Industries v. United States E.P.A.*, 759 F.2d 922, 927 (D.C. Cir. 1985); *United States v. Metate Asbestos Corp.*, 584 F. Supp. 1143, 1146 (D. Ariz. 1984).

¹⁶⁷ Environmental Protection Agency Designation of Hazardous Substances, 40 C.F.R. § 302.4 (1991).

¹⁶⁸ 42 U.S.C.A. § 9601(14) (West 1990).

¹⁶⁹ *B. F. Goodrich Co.*, 958 F.2d at 1200.

¹⁷⁰ 42 U.S.C.A. § 9607(a)(4)(B) (West 1990). *See also Wickland Oil Terminals v. Asarco, Inc.*, 792 F.2d 887, 891 (9th Cir. 1986); *Pinole Point Properties, Inc. v. Bethlehem Steel Corp.*, 596 F. Supp. 283, 288-90 (N.D. Cal. 1984). *See generally* Gaba, *Recovering Hazardous Waste Cleanup Costs: The Private Cause of Action Under CERCLA*, 13 *ECOLOGY L.Q.* 181 (1986).

¹⁷¹ 42 U.S.C.A. § 9607(a) (West 1990).

2. The Fertilizer and Pesticide Exemptions

CERCLA liability only arises if there is a release or threatened release of a hazardous substance. "Release" includes "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment."¹⁷² "Releases" do not include workplace exposures, most engine exhausts, specific types of nuclear material, or the normal application of fertilizer ("the fertilizer exemption").¹⁷³

Under CERCLA section 9607(i), no person, including the United States or any state, may recover from any other person for response costs or damages resulting from the application of a pesticide product ("the pesticide exemption") registered under the Federal Insecticide, Fungicide, and Rodenticide Act¹⁷⁴ ("FIFRA").¹⁷⁵ CERCLA does not preclude the federal government from cleaning up sites polluted through the routine application of pesticides, but the pesticide exemption prohibits the federal government from seeking reimbursement from farmers who caused or contributed to the contamination through routine application of pesticides.¹⁷⁶

3. The Pesticide Exemption and CERCLA Abatement Orders

Those responsible for contamination from the routine application of pesticides cannot use the pesticide exemption as a defense to any other federal or state statutory or common law liability.¹⁷⁷ CERCLA section 9606 provides the President with authority to seek "relief as may be necessary" to abate "an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility."¹⁷⁸ The President has delegated such authority to the EPA.¹⁷⁹

Federal courts have jurisdiction to grant such relief as "the public

¹⁷² *Id.* § 9601(22).

¹⁷³ *Id.* (emphasis added).

¹⁷⁴ 7 U.S.C.A. §§ 136-136(y) (West 1990).

¹⁷⁵ 42 U.S.C.A. § 9607(i) (West 1990).

¹⁷⁶ The pesticide exemption does not shield an individual from liability for "nonroutine" application of pesticides; e.g., improper disposal or accidental spills. *Id.*

¹⁷⁷ 42 U.S.C.A. § 9607(i) (West 1990).

¹⁷⁸ *Id.* § 9606(a).

¹⁷⁹ Exec. Order No. 12580, 52 Fed. Reg. 2,923, 2,926 (1987). Pursuant to § 9615, functions vested in the President under § 9606 have been assigned to the EPA, but must be exercised in concurrence with the Attorney General with respect to response actions.

interest and the equities of the case may require."¹⁸⁰ Any person who, without good cause, willfully refuses to comply with such an order may be fined up to \$25,000 per day.¹⁸¹ The federal government may also seek punitive damages in an amount of up to three times Superfund clean up costs if a responsible party fails to respond to an abatement order.¹⁸²

Although no person, including the government, may recover under CERCLA's section 9607(a) liability provisions for cleanup costs resulting from the routine application of pesticides, the pesticide exclusion does not expressly preclude the federal government from issuing abatement orders against farmers to clean up sites contaminated by the routine application of pesticides. If the pesticide exclusion applies only to the recovery of cleanup costs incurred by others at a site of use, then it does not shield farmers from equitable orders to clean up facilities contaminated by the routine use of pesticides.¹⁸³

Several courts have ruled that the class of persons affected by section 9606(a) depends upon the liability provisions of section 9607(a).¹⁸⁴ However, the courts have only been called upon to rule whether the class of persons liable under section 9606(a) is limited to those classes of persons identified in section 9607(a).¹⁸⁵ The courts have not yet addressed whether the pesticide exemption granted in section 9607(i) exempts farmers from obeying equitable orders issued under the authority of section 9606(a).

In *United States v. Hardage*,¹⁸⁶ stockyard operators, who lawfully applied the pesticide toxaphene to eradicate scabies mites from livestock and then transported the resulting waste to a Superfund site, were not allowed to claim the pesticide exemption.¹⁸⁷ The court held that Con-

¹⁸⁰ 42 U.S.C.A. § 9606(a) (West 1990).

¹⁸¹ *Id.* § 9606(b)(1).

¹⁸² *Id.* § 9607(3).

¹⁸³ See generally *United States v. Hardage*, No. CIV-86-1401-P, 1989 U. S. Dist. LEXIS 17877 (W.D. Okla. Nov. 9, 1989). The court concluded that Congress intended the pesticide exclusion to apply narrowly only to the place of use.

¹⁸⁴ *United States v. Bliss*, 667 F. Supp. 1298, 1313 (E.D. Mo. 1987) (liability under § 9606(a) rests upon a finding that the defendant falls within one of the classes of liable parties described by 42 U.S.C.S. § 9607(a)(1)-(4)); *United States v. A & F Materials Co., Inc.*, 578 F. Supp. 1249, 1257 (since § 9606 contains no limitations on the classes of persons within its reach, it is reasonable to conclude that § 9606 is dependent on the liability provisions of 42 U.S.C.S. § 9607).

¹⁸⁵ Classes of persons include past and present owners, operators, disposers, and transporters.

¹⁸⁶ No. CIV-86-1401-P, 1989 U.S. Dist. LEXIS 17877 (W.D. Okla. Nov. 9, 1989).

¹⁸⁷ *Id.* at 6, 7, and 15.

gress intended to distinguish field application of pesticides from disposal of pesticides.¹⁸⁸ The pesticide exemption only precludes liability for response costs or damages to clean up facilities caused solely by actual use of a registered pesticide at its intended place of use.¹⁸⁹

United States v. Hardage raises—but does not answer—the issue of whether farmers may be ordered to clean up pesticide-contaminated sites off the farm if they transport pesticide-laden wastewater to such sites.¹⁹⁰ For example, if routinely-applied pesticides are leached during irrigation from the soil, collected in drainage systems, and transported off the farm, the farmer may be liable to abatement and cleanup orders for facilities contaminated by such wastes.

In summary, farmers may be subject to equitable orders to clean up sites contaminated through the routine use of pesticides despite the pesticide exemption.

4. CERCLA and “Passive” Contamination

CERCLA does not exempt farmers from liability for the cost of cleaning up hazardous waste sites created by storage of agricultural wastewater containing trace elements leached from the soil. Congress may have believed it was creating such an exemption in CERCLA section 9601(14)(C):

The term “hazardous substance” means . . . (C) any hazardous waste having the characteristics identified or listed pursuant to section 3001 of the Solid Waste Disposal Act [RCRA] . . . (but not including any waste the regulation of which under [RCRA] has been suspended by Act of Congress) (Emphasis added)

As noted above, Congress expressly exempted irrigation return flows from regulation under RCRA as hazardous wastes. However, in *United States v. Union Gas Co.*,¹⁹¹ a federal district court expressly refused to interpret section 9601(14)(C) to have preemptive effect as to any hazardous substance listed under CERCLA by virtue of appearing in another section of 9601(14).¹⁹² If a hazardous substance is listed under CERCLA because it is listed under the Clean Water Act, the Clean Air Act, the Toxic Substances Control Act, or section 9602 of the Act, then the fact that such a substance would not be regulated under

¹⁸⁸ *Id.* at 11-15.

¹⁸⁹ *Id.* at 11-12.

¹⁹⁰ For that matter, *Hardage* implies farmers might lose the protection of the pesticide exemption if they transport pesticide-laden agricultural wastewater off the farm.

¹⁹¹ 586 F. Supp. 1522 (E.D. Penn. 1984).

¹⁹² *Id.* at 1524.

RCRA does not preclude CERCLA liability. Several courts have echoed this interpretation.¹⁸³

Trace elements typically found in drainage water appear on CERCLA's hazardous substance list, and each element originates from a hazardous substance list other than RCRA.¹⁸⁴

5. Farmer Liability

Farmers are not liable for costs incurred by others, including the government, to cleanup hazardous waste sites contaminated through routine applications of fertilizers or FIFRA-registered pesticides. They may be liable for all costs incurred by any person, including the government, to clean up sites contaminated with hazardous substances generated by passive water pollution. Farmers may be liable for all costs to restore, rehabilitate, or replace any natural resources, owned, controlled, or held in trust by the U.S. or any state, contaminated with hazardous substances generated by passive pollution. They may be ordered to abate contamination or may be subject to other equitable action to clean up hazardous conditions caused by pesticides contained in irrigation water if the pesticide exclusion only bars recovery of cleanup costs incurred by others.

D. The Migratory Bird Treaty Act

In 1918, Congress enacted the Migratory Bird Treaty Act¹⁸⁵ ("MBTA") to effectuate a treaty between the United States and Great Britain¹⁸⁶ for the protection of migratory birds.¹⁸⁷ Section 703 prohibits killing or taking, by any means or manner, any migratory bird unless permitted by the Secretary of the Interior.¹⁸⁸

Any person, association, partnership, or corporation who violates the MBTA or its regulations is guilty of a misdemeanor. Violators may be

¹⁸³ B. F. Goodrich Co. v. Murtha, 958 F.2d 1192, 1203 (2nd Cir. 1992); Eagle-Picher Industries v. United States E.P.A., 759 F.2d 922, 927, 930 (D.C. Cir. 1985); State of Idaho v. Hanna Mining Co., 699 F. Supp. 827, 833 (D. Idaho 1987); United States v. Metate Asbestos Corp., 584 F. Supp. 1143, 1147 (D. Ariz. 1984).

¹⁸⁴ E.P.A., List of Hazardous Substances, *supra* note 138, at § 302.4 (1991).

¹⁸⁵ 16 U.S.C.S. §§ 701-718(j) (Law. Co-op. 1978 & Supp. 1992), enacted July 3, 1918, c. 128, § 2, 40 Stat. 755.

¹⁸⁶ Similar treaties were negotiated with Mexico in 1936, Japan in 1972, and the Soviet Union in 1976. *Id.* § 703.

¹⁸⁷ Protected migratory birds are listed in 50 C.F.R. § 10.13.

¹⁸⁸ 16 U.S.C.S. §§ 703, 704 (Law. Co-op. 1978 & Supp. 1992).

fined up to \$500 or imprisoned up to six months, or both.¹⁹⁹ Enforcement actions are referred to the Attorney General for prosecution. The MBTA does not provide for administrative penalties, equitable relief, or citizens' suits.

The MBTA's primary purpose is to regulate hunting.²⁰⁰ Nevertheless, section 703 applies to any activity that results in the death of migratory birds. In the mid-1970s, the federal government began to prosecute persons who unintentionally killed migratory birds through activities far afield from hunting.

In *U.S. v. FMC Corporation*,²⁰¹ the Second Circuit Court of Appeals affirmed a five-count conviction for violating the MBTA. The federal government prosecuted FMC after ninety-two migratory birds were killed in a ten-acre pond. The pond stored wastewater from FMC's pesticide manufacturing operation.²⁰²

FMC claimed it never intended to kill birds; hence, it could not be found guilty of violating the MBTA. The court held it was proper to impose strict liability on FMC,²⁰³ analogizing to the common law doctrine of strict liability for abnormally dangerous activities.²⁰⁴

In *United States v. Corbin Farm Service*,²⁰⁵ a federal district court agreed that scienter²⁰⁶ is not an element of a section 703 violation.²⁰⁷ The court found the defendants violated the MBTA when they negligently applied Furadan 4, an EPA-approved pesticide, to an alfalfa

¹⁹⁹ *Id.* § 707.

²⁰⁰ *United States v. Corbin Farm Service*, 444 F. Supp. 510, 532 (E.D. Cal. 1978), *aff'd* 578 F.2d 259 (9th Cir. 1978).

²⁰¹ 572 F.2d 902 (2nd Cir. 1978).

²⁰² Pond water contained high concentrations of the pesticide carbofuran, used on corn to control rootworms. Carbofuran was concentrated at 75 ppm, roughly 200 times greater than the level which would cause a significant probability of death to birds. *Id.* at 904-5.

²⁰³ The court reasoned: scienter was not an express element of the statute; punishment under the statute involved only minor fines; Congress had sound public policy reasons for enacting the MBTA; and FMC knowingly engaged in the manufacture of highly toxic chemicals and failed to prevent the chemical from escaping to the ponds and killing birds. *Id.* at 908.

²⁰⁴ *Id.* at 907.

²⁰⁵ 444 F. Supp. 510 (E.D. Cal. 1978), *aff'd* 578 F.2d 259 (9th Cir. 1978).

²⁰⁶ Guilty knowledge, or previous knowledge of a state of facts which provided a duty to guard against the injury complained of. BLACK'S LAW DICTIONARY 1207 (5th ed. 1979).

²⁰⁷ *United States v. Corbin Farm Service*, 444 F. Supp. at 536. The court held "(t)he instant case is one in which the guilty act alone is sufficient to make out the crime . . . it is sufficient to declare that the MBTA can constitutionally be applied to impose criminal penalties on those who did not intend to kill migratory birds." *Id.*

field in which migratory waterfowl were subsequently poisoned. *Corbin* was appealed to the Ninth Circuit to decide whether the federal government could charge one count for each bird killed.²⁰⁸ The Ninth Circuit held that multiple bird deaths resulting from a single transaction cannot be separately charged under the MBTA.²⁰⁹

The federal government prosecuted few farmers for violating the MBTA during the 1980s and early 1990s.²¹⁰ In early 1989, the U.S. Fish and Wildlife Service found high rates of migratory bird mutation and deformities in five Tulare Lake Basin evaporation ponds.²¹¹ One evaporation pond had deformity rates seven times greater than rates found at Kesterson. Three years later, the federal government has yet to prosecute any Tulare Lake Basin evaporation pond owner or operator.

In summary, farmers may be subject to criminal sanctions for violating the MBTA if migratory birds are killed by agricultural wastewater, whether on or off the farm. The Second and the Ninth Circuits have upheld imposition of strict liability under the MBTA. These circuits have split on the number of counts that the government may charge when migratory birds are unintentionally killed by poison.

²⁰⁸ *United States v. Corbin Farm Service*, 578 F.2d 259 (9th Cir. 1978).

²⁰⁹ The Ninth Circuit Court adopted verbatim the lower court reasoning that Congress had not "clearly and without ambiguity" provided for prosecutions on multiple counts under the MBTA in the circumstances of this case. Neither court explained what features of the case rendered multiple counts inappropriate. *Id.* at 260.

²¹⁰ *But see United States v. Rollins*, 706 F. Supp. 742 (D. Idaho 1989). In *Rollins*, an Idaho district court reversed a fine imposed by a magistrate against a farmer who applied pesticides, including Furadan, to a field of seed alfalfa causing the death of a flock of geese. Rollins claimed neither he nor his neighbors had ever experienced any prior incidents where large numbers of geese had been killed following a pesticide application. The magistrate found a reasonable person would have known that alfalfa grown on an island in the Snake River would attract waterfowl.

The *Rollins* decision is not a model of clarity. The culpability standard used by the court was whether an ordinary person would expect such conduct to be criminal. Under this standard, the court held the MBTA unconstitutionally vague as applied to Rollins. Although Idaho lies in the ninth circuit, the district court never discusses the strict liability standard endorsed by the Ninth Circuit ten years earlier in *Corbin*. Hence, the case has little precedential value.

²¹¹ Russell Clemings, *Deformities in Tulare Basin Dwarf Kesterson's*, FRESNO BEE, December 2, 1990, at A20. *See supra* note 68.

E. The Endangered Species Act

In 1973, Congress enacted the Endangered Species Act²¹² ("ESA") to conserve and protect federally-listed²¹³ endangered²¹⁴ and threatened²¹⁵ species of fish, wildlife, plants, and their habitats.²¹⁶ In 1985, there were over 330 plant and wildlife species endemic to the United States on the threatened and endangered species list.²¹⁷ California has 100 species on the list, more than any other state in the nation.²¹⁸

The ESA prohibits any person²¹⁹ from taking any endangered species within the United States.²²⁰ To "take" is "to harass, harm, kill, or to attempt to engage in any such conduct."²²¹ The Secretary of Interior may permit takings of endangered species incidental to an otherwise lawful activity, if certain findings can be made.²²²

The Secretary of Interior may impose civil penalties of not more

²¹² 16 U.S.C.A. §§ 1531-1544 (West 1990).

²¹³ The Secretary of Interior has authority to place on the protected list those species threatened or endangered by at least one of five statutorily-defined factors. Relevant factors are: 1) present or threatened destruction, modification or curtailment of habitat or range; 2) inadequacy of existing regulatory mechanisms; or 3) other natural or man-made factors affecting a species' continued existence. *Id.* § 1533(a)(1).

²¹⁴ A fish, wildlife, or plant species is endangered if it is in danger of extinction throughout all or a significant portion of its range (the region in which a species is normally found). *Id.* § 1532(6).

²¹⁵ A species is threatened if it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. *Id.* § 1532(20).

²¹⁶ *Id.* § 1531(c).

²¹⁷ 50 C.F.R. §§ 17.11, 17.12.

²¹⁸ STATE OF CALIFORNIA, DEPARTMENT OF FISH AND GAME, 1990 ANNUAL REPORT ON THE STATUS OF CALIFORNIA'S STATE LISTED THREATENED AND ENDANGERED PLANTS AND ANIMALS 11 (1991). California has nominated another 957 species for federal listing. *Id.* at 12.

²¹⁹ A "person" is any "individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or any other entity subject to the jurisdiction of the United States." 16 U.S.C.A. § 1532(13) (West 1990).

²²⁰ *Id.* § 1538(a)(1)(B). In addition, it is unlawful for any person to attempt or solicit another to take, or cause any taking of an endangered species. *Id.* § 1538(g).

²²¹ *Id.* § 1532(19).

²²² The Secretary must find, after opportunity for public comment, that: 1) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; 2) the applicant will provide adequate funding for mitigation; 3) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; 4) the applicant will take any other measures that, in the judgment of the Secretary, are necessary. *Id.* § 1539(1), (2).

than \$25,000 for each intentional violation and \$500 for other violations.²²³ The ESA also provides for criminal sanctions. Those who knowingly violate express prohibitions may be fined up to \$50,000, or imprisoned for up to a year, or both. Those who otherwise violate the Act may be fined up to \$25,000, or imprisoned for up to six months, or both.²²⁴ The government need not prove that a defendant knew a species was threatened or endangered to obtain a conviction.²²⁵

The Attorney General may sue to enjoin any person from violating the ESA or its regulations.²²⁶ Private citizens may sue to enjoin any person, including state or federal governments, from violating the Act. Private citizens may also sue to compel the federal government to enforce prohibitions against the taking of listed species.²²⁷ Courts may award attorneys fees.²²⁸

Neither farmers nor agricultural activities are exempt from ESA's prohibitions. No cases have been reported where the federal government prosecuted to sanction or enjoin agricultural operations from poisoning threatened or endangered species. However, in *Defenders of Wildlife v. Administrator, Environmental Protection Agency*,²²⁹ the EPA was enjoined from permitting farmers to use strychnine-laced rodenticides until it had obtained an ESA incidental takings statement from the Department of Interior.²³⁰ The court ruled that EPA's failure to obtain such a statement constituted an illegal taking of endangered species in violation of the ESA.²³¹

In summary, farmers who take protected species in agricultural wastewater, whether on or off the farm, may be liable for civil or criminal sanctions. Farmers who take protected species in polluted groundwater may be liable for civil or criminal sanctions. Farmers may be enjoined if they take or threaten to take protected species.

²²³ Civil penalties cannot be assessed until: 1) notice is given that a violation has occurred and that a penalty may be assessed; and 2) the defendant has had an opportunity to be heard. *Id.* § 1540(a).

²²⁴ *Id.* § 1540(b).

²²⁵ *United States v. Nguyen*, 916 F.2d 1016, 1018 (5th Cir. 1990).

²²⁶ 16 U.S.C.A. § 1540(e)(6) (West 1990).

²²⁷ *Id.* § 1540(g). Strict procedures must be followed for citizen suits. *Id.* § 1540(2).

²²⁸ *Id.* § 1540(g)(4).

²²⁹ 882 F.2d 1294 (8th Cir. 1989).

²³⁰ *Id.* at 1301.

²³¹ *Id.*

F. TABLE ONE: SUMMARY OF LIABILITY UNDER FEDERAL STATUTES FOR AGRICULTURAL WATER POLLUTION

	Navigable Waters	Groundwater	Evaporation Ponds
CWA	No	No	No
RCRA	No	No	No
CERCLA			
"Active"	No ¹	No ¹	No ¹
"Passive"	Yes	Yes	Yes
MBTA	Yes	No	Yes
ESA	Yes	Yes	Yes

¹ Unless caused by routine applications of pesticides, and the pesticide exclusion only exempts farmers from liability for repayment of cleanup costs incurred by others, but not from compliance with equitable orders.

IV. LIABILITY UNDER CALIFORNIA STATUTES FOR AGRICULTURAL WATER POLLUTION

A survey of state statutory approaches to agricultural water pollution is beyond the scope of this comment. California regulates agricultural water pollution through three statutes and one regulation: the Porter-Cologne Water Quality Control Act, the Toxic Pits Cleanup Act, the Safe Drinking Water and Toxic Enforcement Act of 1986, and Subchapter 15 regulations.

A. *The Porter-Cologne Water Quality Control Act*

1. Provisions of Porter-Cologne

In 1969, California enacted the Porter-Cologne Water Quality Control Act²³² ("Porter-Cologne"). Unlike the federal Clean Water Act, Porter-Cologne regulates point and nonpoint²³³ waste discharges to both surface and ground waters.²³⁴ California administers the NPDES permit system through the Porter-Cologne permit program.²³⁵

²³² CAL. WATER CODE §§ 13000-13999.19 (West 1971 & Supp. 1992).

²³³ *Tahoe-Sierra Preservation Council v. State Water Resources Control Bd.*, 210 Cal. App. 3d 1421, 1431 (1989). California has adopted the same definition of "point source" as the CWA. CAL. WATER CODE § 13373.

²³⁴ CAL. WATER CODE §§ 13260(a) and 13050(e) (West Supp. 1992).

²³⁵ *Id.* § 13372. See also State of California, State Water Resources Control Board, Order WQ 86-17 (Nov. 20, 1986), (LEXIS, States Library, CaEnv File, 1986 Cal.

Under Porter-Cologne, the State Water Resources Control Board ("SWRCB") has primary authority over all waste discharges to waters of the state.²³⁶ SWRCB administers Porter-Cologne through separate basin water quality control plans.²³⁷ The state is divided into nine regions,²³⁸ each governed by its own regional water quality control board ("RWQCB").²³⁹

The SWRCB must adopt water quality objectives²⁴⁰ that will ensure the reasonable protection of beneficial uses, including: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.²⁴¹ The SWRCB must seek to attain the highest reasonable water quality "considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."²⁴²

Once adopted, water quality standards for California's navigable waters must be approved by the EPA.²⁴³ If the EPA disapproves state water quality standards, it can develop its own for navigable waters. However, the EPA cannot directly enforce state water quality standards for nonpoint sources.²⁴⁴

A waste discharge requirement ("WDR") permit²⁴⁵ is required for any discharge, point or nonpoint, that could impact beneficial uses of

ENV LEXIS 19, at *4).

²³⁶ CAL. WATER CODE §§ 13001 and 13002 (West 1992).

²³⁷ *Id.* § 13240. Each RWQCB develops its own water quality control plan, establishing water quality objectives and implementation programs for various waters based on beneficial uses. *Id.* §§ 13240-13243 (West 1971 and Supp. 1992). These plans must then be approved by the SWRCB. *Id.* § 13245 (West Supp. 1992).

²³⁸ *Id.* § 13200.

²³⁹ *Id.*

²⁴⁰ *Id.* § 13241.

²⁴¹ *Id.* § 13050(f). *See also* United States v. State Water Resources Control Bd., 182 Cal. App. 3d 82, 110 (1986).

²⁴² CAL. WATER CODE § 13000 (West Supp. 1992).

²⁴³ 33 U.S.C.A. § 1313 (West 1990). States must review water quality standards at least once every three years. *Id.* at § 1331(c)(1).

²⁴⁴ *Id.* §§ 1313(a) and (c).

²⁴⁵ Anyone who discharges waste, proposes to discharge waste, or proposes to make a material change in the discharge of waste that could affect water quality must file a "report of waste discharge" to the local RWQCB. CAL. WATER CODE §§ 13260(a) and (c) (West Supp. 1992). Dischargers who fail to report are subject to a wide range of enforcement actions, including fines and injunctions. *Id.* at §§ 13261 and 13262. Based on the report, the local RWQCB develops and adopts a waste discharge requirement, which spells out what can and cannot be discharged.

water, unless waived by a RWQCB.²⁴⁶ A RWQCB may waive WDR permits for specific types of discharges as well as for individual discharges.²⁴⁷ All point source discharges into navigable waters must meet requirements of the federal NPDES permit system.²⁴⁸ Dischargers must comply with the terms of their WDR permit even though a more lenient effluent limitation might be allowed under the NPDES system.²⁴⁹

The holder of a WDR permit does not have a vested right to continue a discharge.²⁵⁰ Each WDR permit requires submission of monitoring reports which are paid for and signed, under penalty of perjury, by the discharger.²⁵¹ Any RWQCB may administratively impose civil liability²⁵² for filing a false report or failing to file a report,²⁵³ for discharging waste,²⁵⁴ for failure to furnish or furnishing false monitoring data,²⁵⁵ or for various cleanup and abatement violations.²⁵⁶

Any RWQCB may issue directly either a cease and desist order or an abatement order.²⁵⁷ If the orders are not complied with, the RWQCB can request judicial enforcement by the State Attorney General.²⁵⁸ The RWQCB can also seek criminal penalties under certain circumstances.²⁵⁹ An aggrieved party may petition the SWRCB to re-

²⁴⁶ *Id.* §§ 13260 and 13269 (West 1971 & Supp. 1992).

²⁴⁷ The RWQCB must make a finding that such waiver is not against the public interest. *Id.* § 13269 (West 1971).

²⁴⁸ *Id.* §§ 13370-13389 (West Supp. 1992).

²⁴⁹ *Id.* § 13377 (West Supp. 1992).

²⁵⁰ *Id.* § 13263(g) (West 1971).

²⁵¹ *Id.* § 13267(b) (West Supp. 1992).

²⁵² The RWQCB must consider a number of factors in determining the amount of any penalty, including: the nature, circumstance, extent, and gravity of the violation; whether the discharge is susceptible to cleanup or abatement; the degree of toxicity of the discharge; the ability of the violator to pay; the effect on the violator's ability to stay in business; any cleanup efforts voluntarily undertaken; prior history of violations; degree of culpability; economic savings, if any, accruing to the violator from the violation; and such other matters as justice may require. *Id.* § 13327. A complaint must be served informing the discharger of the right to a hearing within sixty days. *Id.* § 13323(b). Failure to request a hearing constitutes waiver, and the order becomes final. *Id.* §§ 13323(b), (c), and (d).

²⁵³ *Id.* § 13261(a) and (b)(1) (West Supp. 1992).

²⁵⁴ *Id.* § 13265(a) and (b)(1).

²⁵⁵ *Id.* § 13268(a) and (b)(1).

²⁵⁶ *Id.* § 13350(d)(1), (e)(1), and (f)(1).

²⁵⁷ *Id.* § 13305.

²⁵⁸ *Id.* § 13340 (West 1971).

²⁵⁹ *Id.* §§ 13261(c), 13265(a), 13268(a), 13271(c), 13272(c), 13387, 13522.6, 13525.5, 13526, and 13754 (West 1971 & Supp. 1992).

view specified actions, or the failure to act, of a RWQCB.²⁶⁰

2. Farmer Liability

Farmers must obtain a waste discharge requirement permit for any discharge to any surface or ground waters of the state, unless waived by the local RWQCB. Failure to obtain such a permit may subject farmers to a wide range of civil and criminal fines, and equitable remedies.

B. *The Toxic Pits Cleanup Act*

In 1984, California enacted the Toxic Pits Cleanup Act²⁶¹ ("TPCA") to prohibit discharge of liquid hazardous wastes into surface impoundments within one-half mile upgradient of a potential source of drinking water, unless exempted by a Regional Water Quality Control Board.²⁶² Surface impoundments regulated under the TPCA range from small, natural depressions in the ground to the most elaborate diked structures.²⁶³

Exemptions²⁶⁴ may be granted to operators of agricultural wastewater ponds not located in or near federal or state wildlife refuges²⁶⁵ provided that: 1) the Regional Board determines the impoundment contains only agricultural surface or subsurface drainage waters,²⁶⁶ 2) the agricultural wastewater pond meets all of six criteria,²⁶⁷ and 3) the

²⁶⁰ *Id.* § 13320(a).

²⁶¹ CAL. HEALTH & SAFETY CODE §§ 25208-25208.21 (West Supp. 1992).

²⁶² *Id.* § 25208.4(a) and (b).

²⁶³ "Surface impoundment" is defined as "a waste management unit . . . which is a natural topographical depression, artificial excavation, or diked area formed primarily of earthen materials . . . designed to hold an accumulation of liquid hazardous wastes . . . including, but not limited to, holding, storage, settling . . . pits, evaporation ponds, percolation ponds, other ponds, and lagoons." *Id.* § 25208.2(x).

²⁶⁴ Persons seeking an agricultural exemption must apply to the local RWQCB no later than 180 days after a surface impoundment is created to store hazardous substances. The RWQCB must act on the application within 180 days, unless the application and accompanying technical report are deficient. If the documents are deficient, the applicant has sixty days to provide additional information, and an exemption may not be granted if the applicant fails to provide additional information. *Id.* § 25208.18(d).

²⁶⁵ *Id.* § 25208.18(a).

²⁶⁶ *Id.*

²⁶⁷ A regional water quality control board may grant an exemption only if: 1) the pit is a natural topographical depression, an artificial excavation, or diked area formed primarily of earthen materials, which is designed to hold drainage water; 2) the RWQCB has issued waste discharge requirements for the operation of the surface impoundment; 3) the surface impoundment is operated correctly in compliance with a WDR and is not adversely affecting a potential drinking water source; 4) measures to

applicant files a detailed technical report.²⁶⁸

The RWQCB must conduct annual inspections of exempted agricultural wastewater ponds,²⁶⁹ and revoke the exemption if the ponds are not in compliance.²⁷⁰ Exemptions for agricultural wastewater ponds lapsed on January 1, 1993;²⁷¹ thereafter, all other provisions of the TPCA apply in full.

All nonexempt impoundments must: 1) be double lined; 2) contain a leachate collection system; and 3) be monitored by the WDR permit holder.²⁷² The Act also requires the discharger to file a detailed hydrologic assessment report.²⁷³

The SWRCB or any RWQCB may issue cease and desist orders,²⁷⁴ cleanup and abatement orders,²⁷⁵ administrative civil liability orders,²⁷⁶ refer to the State Attorney General to seek injunctive relief and/or civil monetary remedies,²⁷⁷ or pursue any remedy authorized under the Porter-Cologne Act.²⁷⁸

In summary, farmers may not store agricultural wastewater containing hazardous waste in unlined evaporation ponds unless granted an exemption by a RWQCB. An exemption must be applied for no later than 180 days after such storage begins. Failure to apply for such an exemption may subject violators to cease and desist orders, abatement and cleanup orders, civil fines, and civil liability.

prevent adverse impacts on wildlife have been implemented; 5) a groundwater quality monitoring program is in place to detect lateral seepage; and 6) the owner or operator can demonstrate that measures are being taken to reduce the volume of drainage water discharged into the impoundment. *Id.* § 25208.18(b).

²⁶⁸ The technical report must: 1) fully characterize all waste constituents in the drainage water; 2) describe installed features including engineering design; 3) describe precipitation and drainage controls (in the event of flooding); 4) detail operating plans; 5) estimate wastewater percolation; 6) contain information on groundwater quality immediately underlying and adjacent to the surface impoundment. *Id.* § 25208.18(c).

²⁶⁹ *Id.* § 25208.18(d).

²⁷⁰ *Id.* § 25208.18(e).

²⁷¹ *Id.* § 25208.18(j).

²⁷² *Id.* § 25208.4(4).

²⁷³ *Id.* § 25208.8. Failure to do so can result in liability of \$1,000 to \$10,000 per day. *Id.* § 25208.9. Any person who files false information shall be liable for fines of \$2,000 to \$25,000 for each day such false information is not corrected. *Id.* § 25208.9(b).

²⁷⁴ *Id.* §§ 25208.4(3), 25208.4(5)(B).

²⁷⁵ *Id.*

²⁷⁶ *Id.* § 25208.6.

²⁷⁷ *Id.* § 25208.9.

²⁷⁸ *Id.* § 25208.18(h).

C. *The Safe Drinking Water and Toxic Enforcement Act*

In 1986, California voters approved through initiative measure the Safe Drinking Water and Toxic Enforcement Act,²⁷⁹ popularly known as Proposition 65. Proposition 65 prohibits the release of any chemical known to the state²⁸⁰ to cause cancer or reproductive harm into a source of drinking water.²⁸¹

Over 300 chemicals have been listed under the Act.²⁸² Proposition 65 does not apply to insignificant releases.²⁸³ Releases permitted under other laws are exempt from Proposition 65; however, defendants must prove an exemption applies.²⁸⁴ Proposition 65 exempts businesses with fewer than ten employees.²⁸⁵

Proposition 65 provides for civil penalties up to \$2,500 per day²⁸⁶ or injunctive relief.²⁸⁷ The Act may be enforced by the State Attorney General, any district attorney, or, under certain circumstances, a city

²⁷⁹ CAL. HEALTH & SAFETY CODE §§ 25249.5-25249.13 (West 1992).

²⁸⁰ *Id.* § 25249.8. The keystone of Proposition 65 is the official list of chemicals known to cause cancer or reproductive toxicity. The prohibition apparently applies only to chemicals appearing on the official list. *Id.* § 25249.9(a). However, it is unclear whether the Act's prohibitions apply only to listed chemicals since it also provides that a chemical is known to cause cancer or reproductive toxicity if the state's qualified experts so believe or a state or federal agency has required identification as such. *Id.* § 25249.8(b).

²⁸¹ *Id.* § 25249.5.

²⁸² Ken Hoover, *Court Rules Against Governor in Proposition 65 Suit*, UPI, July 20, 1989, (LEXIS, Nexis Library, Omni File). Whether the Governor could strictly limit the number of chemicals listed under Proposition 65 was the subject of a suit lasting almost three years. *AFL-CIO v. Deukmejian*, 212 Cal. App. 3d 425 (1989). The issue was resolved in favor of liberal construction of the criteria for listing. *Id.* at 441.

²⁸³ *Id.* § 25249.9(b)(1). "Significant amount" is defined as "any detectable amount" unless the amount meets an exemption test. *Id.* § 25249.11(c). The exemption test is "an exposure for which the person responsible can show that the exposure poses no significant risk assuming lifetime exposure at the level in question for substances known to the state to cause cancer, and that the exposure will have no observable effect assuming exposure at one thousand (1,000) times the level in question for substances known to the state to cause reproductive toxicity, based on the evidence and standards of comparable scientific validity to the evidence and standards which form the scientific basis for the listing of such chemical" *Id.* § 25249.10(c).

²⁸⁴ The discharge or release is in conformity with all other laws and with every applicable regulation, permit, requirement, and order. Presumably, a release allowed under a waste discharge requirement permit would be exempt from Proposition 65 enforcement. *Id.* § 25249.9(b)(2).

²⁸⁵ *Id.* §§ 25249.9 and 25249.11(b).

²⁸⁶ *Id.* § 25249.7(b).

²⁸⁷ *Id.* § 25249.7(a).

attorney.²⁸⁸ Proposition 65 also provides for citizen enforcement suits if public officials refuse to prosecute violators.²⁸⁹

Proposition 65 has yet to be invoked against dischargers of agricultural wastewater. It is unclear whether a RWQCB waiver of WDR permits for agricultural wastewater discharge would constitute a permitted release under Proposition 65. It is doubtful that Proposition 65 would apply to releases into evaporation ponds that are not sources of drinking water.

D. Subchapter 15 Regulations

In 1972, the SWRCB implemented²⁹⁰ regulations governing waste disposal to land.²⁹¹ These regulations—generally known as the Subchapter 15 regulations—cover both hazardous and nonhazardous wastes²⁹² in landfills, surface impoundments, waste piles, and land treatment units.²⁹³

Subchapter 15 requirements for surface impoundments²⁹⁴ depend upon the risk to water quality posed by the wastewater to be stored.²⁹⁵ Only Class I waste management units may receive hazardous waste, while Class II units may receive liquid nonhazardous waste.²⁹⁶ Nevertheless, Class II units must be located where site characteristics and containment structures isolate the wastes from waters of the state, and must be fitted with liners, leachate collection and removal systems, and precipitation and drainage control systems.²⁹⁷

In summary, Subchapter 15 regulations require any person discharging or proposing to discharge waste to land where water quality might be affected to submit a report of waste discharge, unless waived by a RWQCB.²⁹⁸ Subchapter 15 regulations are implemented and enforced

²⁸⁸ *Id.* § 25249.7(c).

²⁸⁹ *Id.* § 25249.7(d).

²⁹⁰ CAL. WATER CODE §§ 13140-13147, 13260, and 13262 (West 1974).

²⁹¹ CAL. CODE REGS. tit. 23 §§ 2510-2601 (1984).

²⁹² *Id.* §§ 2521 and 2522.

²⁹³ *Id.* § 2510.

²⁹⁴ Where the Toxics Pit Cleanup Act regulates only surface impoundments and hazardous wastes, Subchapter 15 regulates all waste disposal to land, including siting, water quality monitoring, and construction requirements. *Id.* §§ 2530-2533 and 2540-2559.

²⁹⁵ SWRCB Order, *supra* note 45, at 83.

²⁹⁶ CAL. CODE REGS. tit. 23 §§ 2531, 2532.

²⁹⁷ *Id.* § 2532.

²⁹⁸ *Id.* § 2590(a). Exempted discharges must conform to the local RWQCB water quality control plan. *Id.* § 2511(b).

through Porter-Cologne's waste discharge requirement system.²⁹⁹

E. TABLE TWO: SUMMARY OF LIABILITY UNDER CALIFORNIA STATUTES FOR AGRICULTURAL WATER POLLUTION

	Navigable Waters	Groundwater	Evaporation Ponds
Porter-Cologne Act	Yes	Yes	Yes ¹
Toxic Pits Cleanup Act	No	No	Yes
Prop. 65	Yes	Yes	No
Subchapter 15	No	No	Yes

¹ Regulated under Subchapter 15 regulations pursuant to Porter-Cologne authority.

V. LIABILITY UNDER COMMON LAW FOR AGRICULTURAL WATER POLLUTION

This section focuses on general features of the common law causes of action.³⁰⁰ The gravamen of a particular cause of action may vary by state. For example, some states allow current landowners to bring a nuisance cause of action against previous landowners for nuisance,³⁰¹ while other states do not.³⁰²

Trespass and nuisance are the most important common law doctrines affecting farmer liability for agricultural water pollution. Trespass is an invasion of another's interest in the exclusive possession of land.³⁰³ Nuisance is an interference with another's right to use and enjoyment of property.³⁰⁴ Nuisances may be private or public.

²⁹⁹ *Id.* §§ 2510(f), 2591.

³⁰⁰ "Common law" is perhaps a misnomer since many states have statutorily defined their common law causes of action. However, these causes of action share the characteristic of not being regulatory in nature.

³⁰¹ *Mangini v. Aerojet-General Corp.*, 230 Cal. App. 3d 1125, 1137 (1991).

³⁰² *Philadelphia Elec. Co. v. Hercules, Inc.*, 762 F.2d 303, 313-15 (3rd Cir. 1985).

³⁰³ WILLIAM H. RODGERS, JR., *ENVIRONMENTAL LAW* § 2.13, at 154 (1977 & Supp. 1984).

³⁰⁴ W. PAGE KEETON ET AL., *PROSSER AND KEETON ON THE LAW OF TORTS* § 87, at 622 (5th ed. 1984).

The ancient and venerable public trust doctrine has recently received new life as public interest groups have sought to force government to protect environmental values in water resources. The public trust doctrine posits that certain aspects of water resources are held in trust by government for the benefit of the public, and that courts should take a hard look at any government conduct that allows private parties to impair public resources for private ends.³⁰⁵

This section does not examine the impact of the reasonable use doctrine to water quality disputes. The reasonable use doctrine—a corollary to riparian and appropriative water rights systems—holds that a right to use water may be lost if water is put to unreasonable use.³⁰⁶

Generally, federal and state environmental statutes expressly reserve the right of any citizen or governmental entity to bring a common law cause of action.³⁰⁷

³⁰⁵ National Audubon Society v. Superior Court, 658 P.2d 709 (Cal. 1983).

³⁰⁶ See United States v. State Water Resources Control Bd., 182 Cal. App. 3d 82, 129-30 (1986) (the SWRCB's power to prevent unreasonable methods of use should be broadly interpreted to strike the proper balance between interests in water quality and appropriative uses to objectively determine whether a reasonable method of use is manifested).

³⁰⁷ Under the Clean Water Act, states may sue to abate water pollution provided that the water quality standard applied is no less stringent than that specified under the Clean Water Act. 33 U.S.C.A. § 1370 (West 1990). No state may seek court enforcement of its own water quality standards against a source state for pollution of interstate waters. Arkansas v. Oklahoma, 112 S.Ct. 1046, 1053-54 (1992).

The Clean Water Act does not restrict the right of any private citizen to sue under any common law cause of action. 33 U.S.C.A. § 1365(e) (West 1990). However, the Supreme Court has held that the federal common law of nuisance has been preempted by the Clean Water Act for its limited application to interstate pollution. City of Milwaukee v. Illinois and Michigan, 451 U.S. 304, 317 (1981). The Court has also held that while private parties may sue in nuisance to enjoin water pollution that originates in another state, the forum court must apply the nuisance law of the source state. International Paper Co. v. Ouelette, 479 U.S. 481, 500 (1987).

RCRA preserves the right of any state to regulate hazardous waste or of any individual to maintain any other action, including common law causes of action. 42 U.S.C.A. § 6972(f) (West 1990). CERCLA also preserves state statutory and common law remedies. 42 U.S.C.A. § 9659(h) (West 1990). However, under CERCLA the amount of time allowed within which one may bring a state action may not be less than that allowed under CERCLA. *Id.* at § 9658(a)(1).

Porter-Cologne reserves the right of any public entity or private individual to maintain a common law action for relief from contamination or pollution. CAL. WATER CODE § 13002(e) (West 1971); see, e.g., People v. City of Los Angeles 325 P.2d 639, 643 (Cal. 1971). Proposition 65 has a similar reservation provision. CAL. HEALTH & SAFETY CODE § 25249.13 (West 1992).

A. Trespass

1. Gravamen of a Trespass

Trespass is an intentional invasion of another's right to exclusive possession of land. A farm owner or operator will be liable for trespass, if: 1) the conduct was substantially certain to result in an encroachment on land possessed by another;³⁰⁸ and 2) some physical and tangible thing did in fact encroach on the land of another.³⁰⁹ The injury is presumed by the invasion. A farm operator, who has a right of use and possession only, may be liable to the farm owner if the conduct exceeds the scope of consent granted for use of the land.³¹⁰

Surface invasions are actionable as a trespass so long as something tangible is deposited on the surface of the land.³¹¹ Thus, farmers may be liable for trespass if pesticides, fertilizers, salts, or trace elements are deposited upon the surface of the land of another who has exclusive right to possession. Jurisdictions are divided, however, about whether subsurface physical invasions of another's land through groundwater flows are actionable as a trespass.³¹²

The injured party is always entitled to at least nominal damages.³¹³ Proof of actual injury must be shown to recover more. The plaintiff may recover punitive damages in egregious cases.³¹⁴

Jurisdictions distinguish between a permanent trespass (or nuisance) and a continuing trespass (or nuisance). A permanent trespass is one that will presumably continue indefinitely. A continuing trespass is one that may be discontinued at any time.

The distinction between a permanent and continuing trespass (or nuisance) is important for two reasons. First, the statute of limitations for a permanent trespass begins to run from the moment of trespass. For a continuing trespass, each occurrence constitutes a separate wrong for which the statute of limitations begins to run anew.³¹⁵ Second, the measure of damages differs. For a permanent trespass, the measure of damages is recovery of the diminished market value. For a continuing

³⁰⁸ RODGERS, *supra* note 303, § 2.13, at 52 (Supp. 1984).

³⁰⁹ *Id.* § 2.13, at 155-56 (1977).

³¹⁰ *Mangini v. Aerojet-General Corp.*, 230 Cal. App. 3d 1125, 1141-42 (1991).

³¹¹ *Mangini*, 230 Cal. App. 3d at 1141; *Miller v. Cudahy Co.*, 592 F. Supp. 976, 1005 (D. Kan. 1984) (release of brine onto neighboring lands is a physical trespass).

³¹² KEETON, *supra* note 304, § 13, at 72.

³¹³ *Id.* at 75; RODGERS, *supra* note 303, § 2.13, at 155; *Miller*, 592 F. Supp. at 1006.

³¹⁴ RODGERS, *supra* note 303, § 2.13, at 158.

³¹⁵ *Mangini*, 230 Cal. App. 3d at 1143.

trespass, the measure of damages is depreciation in use value plus any special damages.³¹⁶

Finally, the courts may be more inclined to grant injunctive relief in trespass rather than nuisance actions.³¹⁷ Traditionally, courts have been less inclined to "balance the equities" when there has been a physical invasion of the surface of another's land.

2. Farmer Liability

A farm owner or operator will be liable for trespass if pollutants encroach on the surface of the land of another. A farm owner cannot be liable to another for trespass if pollutants remain on his own property. However, a farm operator who has a leasehold estate may be liable to the owner for trespass if the pollution exceeds the scope of consent granted for use and possession of the property.

B. Private Nuisance

1. Gravamen of a Private Nuisance

A private nuisance is a substantial and unreasonable interference with another's right to use and enjoyment of land.³¹⁸ The interference may be intentional or negligent. The defendant may be strictly liable in nuisance if the activity is abnormally dangerous.³¹⁹ The emphasis in private nuisance is on the interest invaded and the harm caused, rather than the intent of the actor.³²⁰ The plaintiff must prove: 1) the defendant's activity was the legal cause of the harm,³²¹ and 2) the interference was substantial and unreasonable.³²² Injunctive relief will be granted against a prospective nuisance if there exists a high probability of harm.³²³

Causation has been the most difficult element to prove. For example, assume that the City of Fresno were to proceed against farmers for contamination of groundwater with DBCP and EDB. The complexity in determining the extent to which any individual farmer caused the

³¹⁸ RODGERS, *supra* note 303, § 2.6, at 127.

³¹⁷ *Id.* § 2.13, at 155-56.

³¹⁸ *Id.* § 2.3, at 107.

³¹⁹ *Id.*

³²⁰ *Miller v. Cudahy Co.*, 592 F. Supp. 976, 1004 (D. Kan. 1984).

³²¹ RESTATEMENT (SECOND) OF TORTS § 822 (1979).

³²² KEETON, *supra* note 304, § 87, at 622-23.

³²³ RODGERS, *supra* note 303, § 2.4, at 114-15; *see also* *Village of Wilsonville v. SCA Services, Inc.*, 426 N.E.2d 824, 836 (Ill. 1981).

contamination would be enormous. Tracing pollutants back to the source would require tremendous resources and still would be only speculative. This causation problem is inherent in any nuisance action where more than one party could have caused the harm.

All equitable defenses are available, including laches, unclean hands, and estoppel.³²⁴ In addition, two other defenses have been important in private nuisance actions. First, if the plaintiff moves to the area in which the defendant was already conducting the activity, the courts will more closely examine whether the plaintiff has already been compensated by a reduction in the purchase price of the land or has "asked for the trouble."³²⁵ Second, the defendant can gain an easement by prescription if the nuisance has caused actual harm to the servient estate for a sufficient period of time.³²⁶

2. Remedies for Private Nuisance

A wide range of damage measures are available for a private nuisance. If the nuisance is permanent, the measure of damages is the depreciation in the market value of the realty by reason of the nuisance.³²⁷ If the nuisance is continuing, the measure of damages is the reduction in rental value, plus special damages suffered during the statute of limitations period.³²⁸ "Special damages" refer to consequential injury actually suffered, such as destroyed crops.³²⁹ To recover special damages, plaintiffs must mitigate the extent of harm, if reasonable to do so.³³⁰

Plaintiffs may recover consequential damages for subsequent harm directly caused by the nuisance, if such damages are the natural and probable result of the nuisance.³³¹ Some jurisdictions allow recovery of economic loss as a form of consequential damages.³³² Finally, plaintiffs may recover punitive damages if the nuisance is maintained with an intentional or reckless disregard for the rights of others.³³³

Typically, however, plaintiffs seek to enjoin nuisances. Courts tend

³²⁴ RODGERS, *supra* note 303, § 2.9, at 134-36.

³²⁵ *Dill v. Ecel Packing Co.*, 331 P.2d 539, 548, 549 (Kan. 1958).

³²⁶ *Anneberg v. Kurtz*, 28 S.E.2d 769, 773 (Ga. 1944).

³²⁷ KEETON, *supra* note 304, § 89, at 637-38.

³²⁸ *Id.* § 89, at 638-39; *Mangini*, 230 Cal. App. 3d at 1148.

³²⁹ *Miller*, 592 F. Supp. at 1005.

³³⁰ *Id.*

³³¹ *Id.*

³³² *Union Oil Co. v. Oppen*, 501 F.2d 558, 567-68 (9th Cir. 1974).

³³³ *Miller*, 592 F. Supp. at 1006.

to favor this form of relief when a nuisance may ripen into a prescriptive easement.³⁸⁴ Before granting an injunction, courts will balance the equities in favor of each side. Factors utilized to balance the equities include: the relative hardship on the parties from granting or denying the injunction; the good faith or intentional misconduct of each party; and the interest of the general public in the continuation of the defendant's enterprise.³⁸⁵

3. Farmer Liability

Courts have found pollution of groundwater that impacts a neighbor's use for irrigation³⁸⁶ or for drinking water³⁸⁷ to be a nuisance. Courts have also found pollution of a stream that harms a downstream landowner's use for irrigation or drinking water to be a nuisance.³⁸⁸

Maintenance of an on-farm private evaporation pond to store agricultural wastewater may be a nuisance if it impacts uses on surrounding lands.³⁸⁹ For example, an on-farm evaporation pond from which waterfowl accumulate poisons, and which adjoins a private duck hunting club, would constitute a nuisance, if hunters were unable to eat the ducks they killed.

In summary, farmers may be liable for a private nuisance if agricultural water pollution results in harm to another's use and enjoyment of land, whether the polluted water reaches navigable waters, groundwater, or is stored in evaporation ponds.

C. Public Nuisance

1. Gravamen of a Public Nuisance

A public nuisance is an unreasonable interference with a right common to the general public.³⁴⁰ There are three primary differences between a public and private nuisance. First, a public official may sue to enjoin a public nuisance. Second, the equitable defenses of prescription, estoppel, laches, and unclean hands are not available for the defend-

³⁸⁴ *Lindsay-Strathmore Irrigation District v. Superior Court of Tulare County*, 187 P. 1056, 1061 (Cal. 1920).

³⁸⁵ KEETON, *supra* note 304, § 89, at 641.

³⁸⁶ *Miller*, 592 F. Supp. at 1005.

³⁸⁷ *Id.*

³⁸⁸ *Biddix v. Henredon Furniture Industries, Inc.*, 331 S.E.2d 717, 721 (N.C. App. 1985); *Whalen v. Union Bag & Paper Co.*, 101 N.E. 805, 806 (N.Y. 1913).

³⁸⁹ SWRCB Order, *supra* note 45, at 56-59.

³⁴⁰ RESTATEMENT, *supra* note 321, at § 821B (1979).

ant.³⁴¹ Third, public nuisance actions are not restricted to protecting only interests in land,³⁴² but may be brought to protect interests common to the general public.³⁴³ For example, pollution of a stream that affects use of water by downstream landowners may constitute a private nuisance. If the state as sovereign owns all waters, pollution of the stream may also constitute a public nuisance.

Typically, nuisances that represent an unreasonable interference with a right common to the general public are also private nuisances to surrounding landowners.³⁴⁴ While a private nuisance action vindicates a personal interest in a particular piece of land, a public nuisance action vindicates a public interest not necessarily connected to land. Private parties may bring an action in equity to abate a public nuisance if they suffer an injury different in kind from that suffered by other members of the general public.³⁴⁵

Hence, a downstream landowner whose use of a public stream is affected by water pollution can sue an upstream polluter under either a private or a public nuisance. In addition, a fisherman who owns no land on a public stream may be able to sue a polluter to abate a public nuisance since his injury is different than that of the general public.

2. Farmer Liability

Farmers may be sued by the government for maintaining a public nuisance for agricultural water pollution, whether such waters reach navigable waters, degrade groundwater, or are stored in evaporation ponds.³⁴⁶ In some jurisdictions, the state may also recover monetary damages if the nuisance harms property owned by the state.³⁴⁷ A private party who suffers an injury different from that suffered by the general public will have standing to bring a cause of action to abate a public nuisance.

³⁴¹ RODGERS, *supra* note 303, § 2.2, at 102.

³⁴² KEETON, *supra* note 304, § 90, at 643.

³⁴³ *Id.* § 90, at 645.

³⁴⁴ RODGERS, *supra* note 303, § 2.2, at 103.

³⁴⁵ RESTATEMENT, *supra* note 321, at § 821C(1).

³⁴⁶ SWRCB Order, *supra* note 45, 56-60.

³⁴⁷ *Selma Pressure Treating Co. v. Osmose Wood Preserving Co.*, 221 Cal. App. 3d 1601, 1613-16 (1990) (the state may only seek to abate a public nuisance; however, if the nuisance affects state property, then the state may seek to recover monetary damages as might any other property owner under a private nuisance theory).

D. The Public Trust Doctrine

1. History of the Public Trust Doctrine

Under the traditional public trust doctrine, sovereign states own the land underlying navigable waters up to the high-water line in trust for public use.³⁴⁸ Historically, the public uses protected by the trust doctrine include navigation, commerce and fisheries.³⁴⁹ The doctrine has been recently extended to protect public uses of navigable waters for ecology, scientific study, open space, water flora, associated wildlife, recreation, and aesthetics.³⁵⁰

The essence of the public trust doctrine is articulated by Professor Joseph Sax:

When a state holds a resource which is available for the free use of the general public, a court will look with considerable skepticism on any government conduct which is calculated either to reallocate that resource to more restricted uses or to subject public uses to the self-interest of private parties.³⁵¹

The public trust doctrine originated in Roman Law. The Institutes of Justinian provided that water, like air and the sea, is incapable of private ownership—it belongs to everyone and therefore can be owned by no one.³⁵²

The English modified the public trust doctrine to match feudal property concepts. Because English common law required real title to be vested in some person, ownership of the beds of navigable waters was placed in the King as sovereign. The King's ownership was inalienable. "All things which relate peculiarly to the public good cannot be given over or transferred to another person or separated from the Crown."³⁵³ Under English law, all rivers and ports were public, and the right of fishing was common to all. Any person had a right to use the seashore to the highest tide or the banks of a river as long as he did not interfere with the use by others, and no one could exclude another from landing on or navigating past his property.³⁵⁴

In America, major watercourses and lakes have always served for

³⁴⁸ National Audubon Society v. Superior Court, 658 P.2d 709, 719 (Cal. 1983).

³⁴⁹ *Id.*

³⁵⁰ *Id.*

³⁵¹ Joseph L. Sax, *The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475 (1970).

³⁵² United States v. Gerlach Live Stock Co., 339 U.S. 725, 744 (1950).

³⁵³ Jan S. Stevens, *The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Right*, 14 U. C. DAVIS L. REV. 195, 198 (1980).

³⁵⁴ *Id.*

navigation, commerce, and fishing. In 1842, the Supreme Court firmly ensconced the public trust doctrine into American jurisprudence by holding that the states as sovereigns inherited the same rights in lands underlying navigable waters as those previously held by the Crown.³⁵⁵ In 1844, the Court held that under the equal-footing doctrine, newly created states also gained title to lands underlying navigable waters.³⁵⁶

In 1892, the public trust doctrine came into its own when the Supreme Court decided *Illinois Central Railroad Company v. Illinois*.³⁵⁷ In 1869, the Illinois legislature granted in fee 1,000 acres of submerged land along the Chicago waterfront on Lake Michigan to a railroad company in exchange for a percentage of gross earnings from the operation of wharves, piers, and docks. Four years later, the Illinois legislature revoked the fee grant, and the attorney general filed a quiet title action against the railroad. The Supreme Court upheld revocation of the fee grant reasoning that Illinois held, as the sovereign, inalienable interests in lands underlying navigable waters in trust for public use for navigation, commerce, and fishing. The court said:

The state can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them, so as to leave them entirely under the use and control of private parties, except in the instance of parcels mentioned for the improvement of the navigation and use of the waters, or when parcels can be disposed of without impairment of the public interest in what remains, than it can abdicate its police powers in the administration of government and the preservation of the peace.³⁵⁸

The *Illinois Central Railroad Company v. Illinois* holding was affirmed in 1988 when the Supreme Court held that an oil company, which had long been record titleholder to forty-two acres of land underlying navigable tidewater, could not adversely possess against the State of Mississippi.³⁵⁹

2. The *Mono Lake* Decision

Some decisions represent such turning points in jurisprudence that they earn their own names. Such a case is *National Audubon Society v.*

³⁵⁵ *Martin v. Waddell*, 41 U.S. (16 Pet.) 367, 408-14 (1842).

³⁵⁶ *Pollard v. Hagan*, 44 U.S. (3 How.) 212, 228-29 (1845); *Shively v. Bowles*, 152 U.S. 1, 26 (1894). *Shively v. Bowles* contains an excellent history of the public trust doctrine in America.

³⁵⁷ 146 U.S. 387 (1892).

³⁵⁸ *Id.* at 453.

³⁵⁹ *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469, 484 (1988).

Superior Court of Alpine County,³⁶⁰ widely-known as the *Mono Lake* decision. In *Mono Lake*, the California Supreme Court extended the public trust doctrine from its traditional mooring in the protection of public access and use of water to protection of public values in the water itself. The Court reasoned that a public right to use waters for navigation, commerce, and fisheries would mean little if there was insufficient water to meet those uses.³⁶¹ The Court extended the public trust doctrine to protect public uses for ecology, recreation, and aesthetics.³⁶² The Court held the doctrine could be applied to protect instream flows of nonnavigable, tributary streams to protect trust values in navigable waters.³⁶³

Fed by five streams flowing off eastern slopes of the Sierra Nevada, Mono Lake is the second largest lake in California. Mono Lake has no outlet and is saline. While it contains no fish, it supports a large population of brine shrimp which feed vast numbers of nesting and migratory birds. Lake islands host a large breeding colony of California gulls and protect them from mammal predation. Mono Lake also serves as a haven for other migratory birds.³⁶⁴

In 1940, California's Division of Water Resources granted the Department of Water and Power of the City of Los Angeles ("DWP") a permit to appropriate and divert virtually the entire flow of four of Mono Lake's five tributary streams to Los Angeles for drinking water.³⁶⁵ The appropriative water right granted by the state permitted DWP to divert up to 167,000 acre-feet from four tributaries whose combined average annual runoff is only slightly greater than 100,000 acre-feet.³⁶⁶

DWP diverted an average of 57,000 acre-feet out of the Mono Lake basin from 1941 through 1970. In 1970, DWP completed construction of a second diversion tunnel and, thereafter, began appropriating 100,000 acre-feet annually.³⁶⁷

By 1979, Mono Lake had shrunk from 85 square miles to 60.3 square miles, and the surface water elevation had dropped forty-three vertical feet.³⁶⁸ The effect of these diversions on the Mono Lake ecosys-

³⁶⁰ 658 P.2d 709 (Cal. 1983).

³⁶¹ *Id.* at 720-721.

³⁶² *Id.* at 719.

³⁶³ *Id.* at 721.

³⁶⁴ *Id.* at 711.

³⁶⁵ *Id.* at 714.

³⁶⁶ *Id.* at 711, 713, and 714 n.8.

³⁶⁷ *Id.* at 714.

³⁶⁸ *Id.* at 714.

tem was devastating. Salinity increases caused a fifty percent reduction in shrimp hatches in 1980 and a ninety-five percent reduction in the spring of 1981.³⁶⁹

The diversions threatened the millions of birds using the lake. Brine shrimp represented the major food source for birds.³⁷⁰ As salinity increased, birds had to range farther for freshwater sources to maintain their internal salt balance; consequently, less time was spent raising the young resulting in a higher mortality rate.³⁷¹ Ninety-five percent of the California gull population and twenty-five percent of the total gull species population nest at the lake, primarily on lake islands. In 1979, a land bridge formed to the largest of these islands. Two years later ninety-five percent of the hatched chicks did not survive to maturity because of mammal predation.³⁷²

The diversions also affected other values. As the exposed lake bed dried out, thousands of acres of fine silt became airborne causing significant air pollution.³⁷³ Finally, Mono Lake's substantial economic, recreational, and scenic resource values were diminished.³⁷⁴

3. The Public Trust Doctrine and Agricultural Water Pollution

Several holdings of *Mono Lake* may impact farmer liability for agricultural water pollution. First, parties acquiring rights in public trust property generally hold those rights subject to the trust and can assert no vested right to use those rights in a manner harmful to the trust.³⁷⁵ Second, the state has an affirmative duty not only to consider public trust uses in the planning and allocation of water resources but also to protect public trust uses whenever feasible.³⁷⁶ As a matter of practical necessity, the state may approve uses that harm public trust uses. However, the state must, as trustee, consider the effect of the taking on the public trust and preserve, so far as is consistent with public interests, public uses protected by the trust.³⁷⁷

Third, the state may always reconsider a past decision on trust values in light of new information.

³⁶⁹ *Id.* at 715.

³⁷⁰ *Id.*

³⁷¹ *Id.* at 715 and n.10.

³⁷² *Id.* at 716.

³⁷³ *Id.* at 716.

³⁷⁴ *Id.*

³⁷⁵ *Id.* at 721.

³⁷⁶ *Id.* at 728.

³⁷⁷ *Id.*

Once the state has approved an appropriation, the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water. In exercising its sovereign power to allocate water resources in the public interest, the state is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs. The state accordingly has the power to reconsider allocation decisions even though those decisions were made after due consideration of their effect on the public trust.³⁷⁸

Finally, any person who claims that a use of water is harmful to interests protected by the public trust may seek a new determination by the state. Such a determination includes reconsideration of rights previously granted in the use of navigable waters.³⁷⁹ This private right of action to protect public values may be limited to navigable waters or nonnavigable streams feeding navigable waters, since the public trust doctrine applies only to those waters. Consequently, private citizens would not have standing under the public trust doctrine to protect public trust values in groundwater or in evaporation ponds that were not historically navigable.

Mono Lake, when read with *Illinois Central Railroad Company v. Illinois*, yields an important corollary. Persons with riparian or appropriative water rights hold such rights subject to the public trust. Ownership of the subject of the trust—the land or the water—rests in the sovereign as trustee for the people of the state. If the state determines at any time that an existing use is incompatible with the purposes of the trust, the state can revoke the right to such use without compensation.

In 1986, a California appellate court confirmed the vitality of the public trust doctrine as it affects water quality. The court held that the State Water Resources Control Board had the power and the duty to modify huge water rights held by state and federal agencies to protect public trust values, including water quality, in the Sacramento-San Joaquin Delta.³⁸⁰

³⁷⁸ *Id.*

³⁷⁹ *Id.* at 730.

³⁸⁰ *United States v. State Water Resources Control Bd.*, 182 Cal. App. 3d 82, 150.

**E. TABLE THREE: SUMMARY OF LIABILITY UNDER
COMMON LAW DOCTRINES FOR AGRICULTURAL WATER
POLLUTION**

	Navigable Waters	Groundwater	Evaporation Ponds
Trespass ¹	Yes	No ²	No
Private Nuisance	Yes	Yes	Yes
Public Nuisance	Yes	Yes	Yes
Public Trust Doctrine	Yes	No ³	No

¹ Farmers may be liable to another if agricultural water pollution from their land deposits pesticides, fertilizers, salts, or trace elements upon the surface of the land of another.

² Unless the state recognizes subsurface physical invasions of groundwater as actionable.

³ Unless polluted groundwater reaches navigable waters and impinges upon public uses for navigation, commerce, fisheries, recreation, aesthetics, and water quality.

**VI. ADDRESSING THE PROBLEM OF AGRICULTURAL WATER
POLLUTION**

A. Introduction

The “crown jewels” of federal water pollution and hazardous waste legislation—the Clean Water Act and the Resource Conservation and Recovery Act—specifically exempt agricultural water pollution from federal regulation. Federal wildlife protection laws that were never intended to regulate water pollution or hazardous wastes—the Migratory Bird Treaty Act and the Endangered Species Act—are used sparingly by the federal government to address agricultural water pollution. CERCLA’s potentially wide range of liability provisions and remedies have yet to be applied to the sites and resources contaminated by agricultural wastewater.³⁸¹

³⁸¹ Several reasons have been offered to justify the failure to enact or enforce water quality laws affecting farmers. The EPA once asserted the “administrative infeasibility” of regulating millions of farms as a justification for the federal government not regulating dairies as point sources of water pollution. (Natural Resources Defense

Although California has enacted laws authorizing regulation of discharge and storage of agricultural wastewater, waivers are expressly allowed and frequently granted.

Common law causes of action remain vital tools for addressing agricultural water pollution. Yet, the efficacy of these actions to achieve public benefits depends upon injured private parties or public interest groups having adequate financial resources to maintain frequently expensive litigation.

The net result has been that addressing the national problem agricultural water pollution has fallen through the cracks. Kesterson National Wildlife Refuge and the San Joaquin River are sad proof of this. Kesterson was not subject to federal laws regulating water pollution and hazardous waste. California only moved to shut down Kesterson after it had become a public relations nightmare. The San Joaquin River and its tributaries are sewers for toxic agricultural wastewater. Dischargers are exempt under the NPDES permit and California continues to waive regulation under its own water pollution control laws.

The touchstone of the Clean Water Act is that those who need to use waters for waste distribution must seek and obtain a permit to discharge that waste with the quantity and quality of the discharge regulated.³⁸² Exempting an industry that uses eighty percent of the water and creates most of the pollution affecting rivers, streams, lakes, and groundwater defeats the regulatory scheme. The states have failed to address the problem after forty-four years under the old and new Clean Water Acts. Congress should remove the exemption for irrigation return flows from the Clean Water Act.

Even if the Clean Water Act were so amended, nonnavigable surface waters, like evaporation ponds, would not be regulable. Agricultural wastewater storage ponds that pose a deadly threat to migratory birds

Council, Inc. v. Costle, 568 F.2d 1369, 1377-79 (D.C. Cir. 1977) (the court rejected EPA's argument that "administrative infeasibility" could or should be a factor in choosing whether to implement rules regulating "millions" of dairies as point sources.)

Farmers are "price-takers," not "price-makers," in the market place who cannot pass on the additional costs of abating pollution. Farmers represent a potent political force which zealously protects its prerogatives.

Farmers feed the nation, and, if agricultural wastewater were regulated as hazardous waste, farmland may go out of production. (However, the inevitability of retiring farmland with toxic drainage problems has been recognized in California. In 1992, the legislature acted to ease the western San Joaquin Valley's chronic drainage problems by having the state purchase and retire 75,000 acres. CAL. WATER CODE §§ 14900-14920 (West Supp. 1992).)

³⁸² United States v. Earth Sciences, Inc., 599 F.2d 368, 373 (10th Cir. 1979).

could be enjoined if Congress were to amend the MBTA to allow equitable remedies. In addition, Congress should amend the MBTA to provide citizens suits against any person, including the government, to enjoin violations.

Finally, the public trust doctrine recognizes an individual right to healthy rivers, lakes and estuaries. The doctrine bridges the gap between regulation and unreasonable use of public resources. The public trust doctrine should be extended through litigation brought by public interest groups to protect water quality by forcing states to carefully consider their ongoing duty as trustees for uses of public waters by all their citizens. In particular, the public trust doctrine should be used to "encourage" states to address the problem of agricultural water pollution.

B. Congress Should Amend The Clean Water Act

If Congress were to delete the irrigation return flow exemption, farmers who collect and discharge agricultural wastewater to navigable waters would be required to obtain NPDES permits. To determine what types of agricultural activities would be affected, this comment will examine cases in which federal courts held that ostensibly nonpoint sources could, under certain conditions, be regulated as point sources.

In *Sierra Club v. Abston Construction Co., Inc.*,³⁸³ the court held that sediment basins could be "point sources." The sediment basins had been constructed to collect and contain mining spoil pile runoff.³⁸⁴ During heavy rainfall, pollutants were carried in runoff through erosion-created ditches and gullies into navigable waters. The court reasoned systems designed and constructed to collect and contain runoff are "confined systems" suitable for regulation under the CWA.³⁸⁵

In *United States v. Earth Sciences, Inc.*,³⁸⁶ the court held that cyanide leachate flowing into navigable waters constituted discharges from a point source.³⁸⁷ Cyanide solutions, used to process gold, were stored in fiberglass-lined pools. The pools overflowed into an open ditch, which in turn emptied into a nearby brook. Cyanide leachate killed fish

³⁸³ 620 F.2d 41 (5th Cir. 1980).

³⁸⁴ *Id.* at 45.

³⁸⁵ *Id.* at 45-46. See also *Friends of Sakonnet v. Dutra*, 738 F. Supp. 623, 630 (D.R.I. 1990) ("the concept of point source was developed to distinguish pollution resulting from simple erosion over the surface of the ground from pollution that has been collected or comes from a confined system.")

³⁸⁶ 599 F.2d 368 (10th Cir. 1979).

³⁸⁷ *Earth Sciences*, 599 F.2d at 374.

in the brook.³⁸⁸ The court reasoned that nonpoint sources are virtually impossible to isolate to one polluter, and, consequently, cannot be regulated under any permit system.³⁸⁹ However, when a discharge can be traced back to an individual source,³⁹⁰ it should be regulated as a point source to effectuate the Clean Water Act.³⁹¹

In *United States v. Oxford Royal Mushroom Products, Inc.*,³⁹² the court held that uncollected surface runoff from irrigation fields enclosed by a berm could be regulated as discharges from a point source.³⁹³ Oxford sprayed mushroom wastewater on "irrigation" fields. Oxford exceeded the capacity of the soil to absorb the wastewater by overspraying, causing a discharge into nearby navigable waters.

Two years later, in *United States v. Frezzo Bros., Inc.*,³⁹⁴ the same court held that discharges from a mushroom composting operation were not "irrigation return flows." The court held that wastewater collected and concentrated in holding tanks, which was then discharged into a stream, was in no way similar to the unconcentrated agricultural pollution Congress intended to exempt as irrigation return flow.³⁹⁵

In *O'Leary v. Moyer's Landfill, Inc.*,³⁹⁶ the court held that leachate from a fifty-five acre landfill which entered a navigable stream constituted a point source discharge.³⁹⁷ Leachate was collected at the lower end of the landfill, then pumped back uphill to recirculate through the landfill mass.³⁹⁸ The court reasoned that "(n)otwithstanding that it may result from such natural phenomena as rainfall and gravity, the surface run-off of contaminated waters, once channeled or collected, constitutes discharge by a point source."³⁹⁹

In *Quivira Mining Company v. United States Environmental Protection Agency*,⁴⁰⁰ the court required several companies to obtain NPDES permits for wastewater discharged from uranium mining and

³⁸⁸ *Id.* at 370.

³⁸⁹ *Id.* at 371.

³⁹⁰ Waste flows from mining operations, unlike waste flows from agriculture, are not expressly excluded from regulation as point sources under the Clean Water Act. See *supra*, notes 115-125 and accompanying text.

³⁹¹ *Earth Sciences*, 599 F.2d at 373.

³⁹² 487 F. Supp. 852 (E.D. Pa. 1980).

³⁹³ *Id.* at 854.

³⁹⁴ 546 F. Supp. 713 (E.D. Pa. 1982), *aff'd*, 703 F.2d 62 (3rd Cir. 1983).

³⁹⁵ *Id.* at 724-25.

³⁹⁶ 523 F. Supp. 642 (E.D. Pa. 1981).

³⁹⁷ *Id.* at 651, 652, and 655.

³⁹⁸ *Id.* at 652.

³⁹⁹ *Id.* at 655.

⁴⁰⁰ 765 F.2d 126 (10th Cir. 1985), *cert. denied*, 474 U.S. 1055 (1986).

milling operations into nearby gullies.⁴⁰¹ Gully surface runoff reached navigable waters during times of intense rainfall, and contaminated water regularly reached navigable waters through subsurface flows.⁴⁰² Hence, subsurface flows that reach navigable waters can be regulated under the NPDES permit system if they originate from a point source.

Finally, in *Fishel v. Westinghouse Electric Corp.*,⁴⁰³ the court held that water entering a navigable stream from a lagoon could be regulated as point source discharges. A transporter had dumped hazardous waste into the lagoon, and lagoon overflow contained pollutants.⁴⁰⁴ The court held lagoon overflows came from a discernible, confined and discrete conveyance.⁴⁰⁵

If the irrigation return flow exemption were deleted from the CWA, a NPDES permit would be required for those farming operations in which agricultural wastewater:

- 1) is collected in a confined system (e.g., subsurface pipe collector systems, surface open ditch drainage collectors, or evaporation ponds); and

- 2) ultimately enters navigable waters, either through surface or subsurface flow; and

- 3) can be monitored and tested so as to be traceable back to an individual permit holder.⁴⁰⁶

On-farm evaporation ponds not situated in historically navigable waters would be exempt from the NPDES permit system, unless polluted subsurface flows reached navigable waters.⁴⁰⁷ In addition, farming operations that discharge agricultural wastewater through nonnavigable conveyances to nonnavigable off-farm waters would be exempt from regulation.

⁴⁰¹ *Id.* at 127 and 130.

⁴⁰² *Id.* at 130.

⁴⁰³ 640 F. Supp. 442 (M.D. Pa. 1986).

⁴⁰⁴ *Id.* at 446. *See also* Dague v. City of Burlington, 935 F.2d 1343 (2nd Cir. 1991) (pollutants from a city landfill, which entered a pond and subsequently reached navigable waters through a culvert, originated from point source).

⁴⁰⁵ *Id.*

⁴⁰⁶ Several farming operations could combine to obtain a single NPDES permit. The CWA prohibits illegal pollutant discharges by any "person," defined broadly to include "an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body." 33 U.S.C.A. §§ 1311(a), 1362(5) (West 1990). Since drainage districts and associations qualify as "persons," independent farming operations could be regulated under a single NPDES permit.

⁴⁰⁷ Whether a particular evaporation pond is a navigable water for purposes of the CWA would be a question of fact as to whether water historically pooled or flowed at that point.

C. Congress Should Amend The Migratory Bird Treaty Act

The Migratory Bird Treaty Act does not provide for equitable remedies. Federal prosecutors are understandably reluctant to charge farmers with criminal violations. Congress should amend the MBTA to authorize the federal government to seek the full range of equitable remedies, including prohibitory injunctions, cleanup orders, and abatement orders. Language for such an amendment, with slight modification, can be derived from the CERCLA⁴⁰⁸ and the ESA.⁴⁰⁹

The Attorney General of the United States may seek to enjoin any person who is alleged to be in violation of any provision of this chapter or regulation issued under authority thereof, or such other equitable relief as may be necessary to abate such violations. The district court of the United States in the district in which the violation occurs shall have jurisdiction to grant such relief as the public interest and the equities of the case may require.

While the federal government might seek equitable relief under a public nuisance theory, civil actions often take years to come to trial. In order to obtain a preliminary injunction, the government must meet the traditional four-part test: 1) the likelihood of plaintiff's success on the merits; 2) the possibility of plaintiff's suffering irreparable injury if relief is not granted; 3) the extent to which the balance of hardships favors the respective parties; and 4) in certain cases, whether the public interest will be advanced by the provision of preliminary relief.⁴¹⁰

If Congress were to amend the MBTA as recommended, the government would not be required to show irreparable injury to obtain a preliminary injunction. Where a statute provides for injunctive relief, the injury is presumed if the statutory conditions for a violation are arguably met.⁴¹¹

Courts would balance the equities in determining whether to grant equitable relief, and, if appropriate, what form such relief should take. Courts traditionally balance the degree of the injury, the culpability of the defendant, the possible economic impact of any decree, and the public interest.⁴¹²

Congress should also amend the Act to allow any person to bring a

⁴⁰⁸ 42 U.S.C.A. § 9606(a) (West 1990).

⁴⁰⁹ 16 U.S.C.A. § 1540(e)(6) (West 1990).

⁴¹⁰ *United States v. Odessa Union Warehouse Co-op*, 833 F.2d 172, 174 (9th Cir. 1987).

⁴¹¹ *Id.* at 174-75.

⁴¹² *RODGERS, supra* note 303, § 4.21, at 538. See also *Reserve Mining Co. v. Environmental Protection Agency*, 514 F.2d 492, 535-40 (8th Cir. 1975).

civil suit, in a federal court in the judicial district in which a violation occurs, to enjoin any person, including any governmental entity, from violating the Act. Provisions should be added that: 1) require sixty days notice to the Secretary before commencing action; 2) remove the right of action if the Secretary commences civil or criminal actions against violators; 3) permit recovery of litigation fees whenever the court determines such an award is appropriate.

D. Using The Public Trust Doctrine To Protect Water Quality

Exploring the myriad applications of the public trust doctrine to government regulation of water quality is beyond the scope of this comment. Instead, this comment will briefly explore the juxtaposition of the doctrine, fisheries, and water quality.

The public trust doctrine is on its firmest historical footing when protecting public uses of navigable waters for navigation, commerce, and fisheries. The traditional use most impacted by agricultural water pollution is fishing. In fact, the EPA uses fisheries as a barometer of the health of the nation's waters.⁴¹³ The doctrine expressly recognizes that the public has a vested right in water clean enough to maintain fisheries in navigable waters—a right antecedent to uses that now degrade public waters. Hence, the public trust doctrine might provide a "bottom line" in terms of the water quality that must be achieved.

For example, the public trust doctrine might be invoked to force the State Water Resources Control Board to reexamine its decision to waive waste discharge requirements for discharges of agricultural wastewater into the San Joaquin River.⁴¹⁴ Clearly, fisheries have been heavily impacted by such discharges. Therefore, fishing, a traditional public trust use of navigable waters, has been affected by a decision by a trust agency to forego regulation of private uses of public waters for wastewater discharge. The public trust doctrine might provide both the basis for the state's authority and a baseline against which water quality should be measured. The San Joaquin River must be clean enough to support fisheries.

The public trust doctrine provides the philosophical underpinnings for state regulation of water pollution. While the Clean Water Act sets the lofty goal that the nation's waters be clean enough for swimming and fishing, the sad truth is that many of our waters do not even ap-

⁴¹³ See generally, NATIONAL WATER QUALITY INVENTORY, *supra* note 15, at 85-108.

⁴¹⁴ See *supra* note 72 and accompanying text.

proach that goal.

Whether the public trust doctrine is seen as substantive law establishing a "bottom line" for water quality, as providing a "hard look" standard of review for the courts, or embodying ongoing authority to reconsider uses of water, concerned citizens should push the outer limits of the doctrine to restore a common heritage of clean water and to prevent further degradation by agricultural pollution.

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