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A Tale of Two Water Districts: The Future of Agriculture in California's San Joaquin Valley Lies in Compromise Over Drainage

Kathleen Nitta
Golden Gate University School of Law

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Cover Page Footnote

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A TALE OF TWO WATER DISTRICTS: THE FUTURE OF AGRICULTURE IN CALIFORNIA'S SAN JOAQUIN VALLEY LIES IN COMPROMISE OVER DRAINAGE

I. INTRODUCTION

The salt management problem in the San Joaquin Valley is not a unique one; the problem has plagued irrigated agriculture in all arid and semi-arid areas of the world since before the beginning of recorded history. Many flourishing early civilizations fell principally because of an inability to understand and cope with salt balance and drainage problems. The Tigris and Euphrates river valley in ancient Mesopotamia became mostly desert because of the accumulation of salts in the surface soil layers. Relics of abandoned irrigation systems, alkali 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.¹

The western side of California's San Joaquin Valley (the Westside) is an arid wasteland.² Like the ancient desert civilizations of Mesopotamia and Persia, the Westside suffers from salt accumulation due to its high water table.³ The high water table is the result of a

¹ CALIFORNIA DEPARTMENT OF WATER RESOURCES BULLETIN 127-47 (1974) (quoted in *In re Claus*, California State Water Resources Control Board, Order No. WQ 85-1 (Feb. 5, 1985), available at www.swrcb.ca.gov/board_decisions/adopted_orders/water_quality/1985/wq1985_01.pdf [hereinafter Order No. WQ 85-1]).

² See Philip Garone, *The Tragedy at Kesterson Reservoir: A Case Study in Environmental History and a Lesson in Ecological Complexity*, 22 ENVIRONS ENVTL. L. & POL'Y J., 107, 113 (1999).

³ David E. Birkle, William A. Jury, & Iddo Kan, *Model Describes Sustainable Long-Term Recycling of Saline Agricultural Drainage Water*, 57 CALIFORNIA AGRICULTURE 24 (2003), available at ucce.ucdavis.edu/files/repositoryfiles/ca5701p24-69047.pdf.

drainage problem created by the combination of two crucial elements of the Westside's geologic development.⁴ First, the soil on the surface of the land is finely textured, so water cannot easily pass through it.⁵ Second, there is a thick clay layer beneath this soil, which water cannot penetrate at all.⁶ The clay layer keeps the water from draining to the aquifers below, and the fine soil keeps the water from running off to nearby streams and rivers.⁷ Additionally, not only is there a high salt content, but also present are several elements naturally found in alkali soils, such as boron and selenium.⁸ These elements are toxic to plants and wildlife.⁹ The combination of toxic elements, a high water table, and lack of drainage should have kept the Westside a naturally arid wasteland. However, the determination of a few farmers and the industry of the United States Department of the Interior's Bureau of Reclamation (Reclamation) brought about a different result.¹⁰

Farming is possible on the Westside only because Congress enacted the San Luis Act in 1960.¹¹ The San Luis Act requires Reclamation to provide the Westside with water and drainage.¹² As envisioned by Congress, the water would come from Reclamation's behemoth of a water project, the Central Valley Project.¹³ The drafters of the San Luis Act knew the drainage requirement had to be included with the water provision because once water was applied to the land on the Westside, water not absorbed by the crops would become trapped in the fine soil above the clay layer and would be incapable of draining.¹⁴ As more and more water became trapped, the soil would become so full of water that

⁴ *Id.*

⁵ Interview with Chris Eacock, Project Manager/Soil Scientist, U.S. Bureau of Reclamation, Mid-Pacific Region, South-Central California Area Office, San Joaquin Valley, Cal. (Oct. 19, 2010).

⁶ Garone, *supra* note 2, at 113.

⁷ See Theresa S. Presser, *Geologic Origin and Pathways of Selenium from the California Coast Ranges to the West-Central San Joaquin Valley*, in *SELENIUM IN THE ENVIRONMENT* 139, 141 (W.T. Frankenberger, Jr., & Sally Benson eds., 1994).

⁸ Marc A. Sylvester, *Results of the U.S. Geological Survey Studies Pertaining to the Agricultural Drainage Problem of the Western San Joaquin Valley, California*, in *SELENIUM AND DRAINAGE: IMPLICATIONS FOR SAN FRANCISCO BAY AND THE CALIFORNIA ENVIRONMENT, PROCEEDINGS OF THE SECOND SELENIUM SYMPOSIUM* 38–39 (1985).

⁹ Arthur W. Kilness & Jerry L. Simmons, *Toxic Effects of Selenium on Wildlife and Other Organisms*, in *SELENIUM AND DRAINAGE: IMPLICATIONS FOR SAN FRANCISCO BAY AND THE CALIFORNIA ENVIRONMENT, PROCEEDINGS OF THE SECOND SELENIUM SYMPOSIUM* 54 (1985).

¹⁰ Garone, *supra* note 2, at 114–15.

¹¹ *Id.* at 107, 116.

¹² See San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960).

¹³ Roderick E. Walston, *California Water Law: Historical Origins to the Present*, 29 WHITTIER L. REV. 765, 783 (2008).

¹⁴ Garone, *supra* note 2, at 116.

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the roots of the crops would become inundated, causing the crops to die.¹⁵

Supplying the Westside with water required an expensive extension of the Central Valley Project to re-route a portion of its water.¹⁶ The drainage provision provided the most formidable challenge.¹⁷ Initially, Reclamation faced the difficult process of installing tile drains under the fine soil to allow trapped water to escape to drainage ditches.¹⁸ However, this task proved insignificant compared to the then-unknown effect of irrigating alkali soil laced with selenium.¹⁹ As irrigation water drained, it took the selenium with it.²⁰ And, as the selenium drained out, it accumulated in plants and animal tissues, causing significant environmental impacts.²¹

Reclamation's attempts to provide drainage in a way that does not endanger surrounding wildlife have failed.²² Reclamation remains charged with the responsibility of providing drainage;²³ however, this drainage solution is far from being implemented and may never be feasible.²⁴ There is currently no drainage outlet for irrigation runoff from the Westside, yet water from the Central Valley Project continues to flow freely.²⁵ As the Westside farmers continue to apply irrigation water to their crops they are faced with a disastrous inevitability. Without a drainage outlet the water table will rise and the salts in the water will render the land unfit for agriculture.²⁶

As Reclamation tried and failed to find a drainage solution, certain farmers on the Westside realized that their reliance on Reclamation was endangering their livelihoods.²⁷ These farmers have organized and

¹⁵ *Id.*

¹⁶ See Order No. WQ 85-1, *supra* note 1 (quoting CALIFORNIA DEPARTMENT OF WATER RESOURCES BULLETIN 127-47 (1974)).

¹⁷ See generally Garone, *supra* note 2, at 107.

¹⁸ *Id.* at 117.

¹⁹ See generally Sylvester, *supra* note 8.

²⁰ See generally Ivan Barnes, *Sources of Selenium*, in SELENIUM AND DRAINAGE: IMPLICATIONS FOR SAN FRANCISCO BAY AND THE CALIFORNIA ENVIRONMENT, PROCEEDINGS OF THE SECOND SELENIUM SYMPOSIUM 42, 46 (1985).

²¹ See generally Kilness & Simmons, *supra* note 9.

²² See discussion *infra* Part II.D.

²³ See discussion *infra* Part III.B.

²⁴ See discussion *infra* Part IV.D.

²⁵ See THERESA S. PRESSER & STEVEN E. SCHWARZBACH, U.S. GEOLOGICAL SURVEY, TECHNICAL ANALYSIS OF IN-VALLEY DRAINAGE MANAGEMENT STRATEGIES FOR WESTERN SAN JOAQUIN VALLEY, CALIFORNIA (2008), available at pubs.usgs.gov/of/2008/1210/of2008-1210.pdf.

²⁶ See generally Birkle et al., *supra* note 3.

²⁷ See Joseph C. McGahan, *Drainage Control Activities by the Grassland Area Farmers*, in

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formed a group called the Grassland Area Farmers (GAF),²⁸ and it has implemented an innovative solution to the drainage problem.²⁹ Not only can the GAF irrigate its fields, but it has also made provisions to eliminate hazardous impacts on wetlands and waterways below.³⁰ Its drainage program is well established and continues to evolve under a practice of adaptive management toward the goal of eliminating all of its drainage discharges containing selenium.³¹ Based on this successful, proactive approach, the GAF recently asked for more time to meet the requirements of the federal Clean Water Act³² for selenium levels in irrigation return flows discharged into the lower San Joaquin River.³³ The GAF has already reduced its selenium discharges considerably,³⁴ but it needs more time to reduce discharges to zero.³⁵

Just south of the GAF's land lies the immense Westlands Water District (Westlands). Westlands has taken a different path than the GAF in response to Reclamation's failure to provide drainage.³⁶ The GAF drains its lands and discharges the water into the San Joaquin River.³⁷ It is because of this discharge that the GAF has to work to comply with the

THE SAN FRANCISCO ESTUARY INSTITUTE FOR THE GRASSLAND BYPASS PROJECT OVERSIGHT COMMITTEE, GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, at 23 (2010), available at legacy.sfei.org/grassland/reports/gbpdfs/AnnualReports/06-07/GBP2006-2007CH2.pdf.

²⁸ *Id.*

²⁹ See discussion *infra* Part III.A–B.

³⁰ See McGahan, *supra* note 27.

³¹ Interview with Dennis Falaschi, General Manager, Panoche Drainage and Water District, Firebaugh, Cal. (Oct. 19, 2010).

³² 33 U.S.C.A. § 1251 et seq. (Westlaw 2011).

³³ See U.S. DEPT. OF THE INTERIOR & SAN LUIS & DELTA-MENDOTA WATER AUTHORITY, AGREEMENT FOR CONTINUED USE OF THE SAN LUIS DRAIN FOR THE PERIOD OF JANUARY 1, 2010 THROUGH DECEMBER 31, 2019, AGREEMENT NO. 10-WC-20-3975 (Dec. 2009), available at www.swrcb.ca.gov/rwqcb5/water_issues/grassland_bypass/gbp_2010_2019_use_agree.pdf [hereinafter AGREEMENT NO. 10-WC-20-3975]; see also ENVTL. PROT. AGENCY, STAFF REPORT, TOTAL MAXIMUM DAILY LOAD FOR SELENIUM IN THE LOWER SAN JOAQUIN RIVER (Aug. 2001) [hereinafter EPA STAFF REPORT, TMDL FOR SELENIUM IN THE LOWER SAN JOAQUIN RIVER].

³⁴ See THE SAN FRANCISCO ESTUARY INSTITUTE FOR THE GRASSLAND BYPASS PROJECT OVERSIGHT COMMITTEE, GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007 (Aug. 23, 2010), available at www.sfei.org/sites/default/files/GBP%20Annual%20Report%200607%20for%20web.pdf [hereinafter GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007]; see also McGahan, *supra* note 27.

³⁵ See Letter from Joseph C. McGahan, Drainage Coordinator Grassland Area Farmers, to Rudy Schnagl, Central Valley Regional Water Quality Control Board (Dec. 29, 2009) (on file with author) [hereinafter Letter from GAF to Central Valley Regional Quality Control Board] (update of Long-Term Drainage Management Plan).

³⁶ See discussion *infra* Part IV.A–C.

³⁷ See discussion *infra* Part IV.A–C.

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provisions of the Clean Water Act.³⁸ Westlands, on the other hand, has continued to irrigate without a drainage outlet.³⁹ Because Westlands is not discharging its agricultural return flows into the San Joaquin River, its actions are beyond the reach of the Clean Water Act. As Westlands avoids the strictures of the Clean Water Act, it may also be eluding a solution to the area-wide irrigation problem. Westlands' current and unchecked irrigation practices are likely to result in the death of Westlands' farmable lands.

This Comment will demonstrate why enforcement of the lower San Joaquin River total maximum daily load (TMDL) for selenium under the Clean Water Act should be postponed by amending the Basin Plan for the lower San Joaquin and Sacramento Rivers to extend the selenium compliance schedule for the GAF until it finishes implementing its drainage management plan. This Comment will also discuss why the GAF's drainage plan should be used as a model for Westlands and should prompt Congress to amend the San Luis Act to require Westlands' farmers to provide their own drainage.

Part II will relate the history of the region and the water districts within it. It will also detail the geology of the region, the discovery of selenium, and the disastrous effects of selenium that led to wildlife destruction at Kesterson Reservoir. Finally, this Part will establish why drainage is difficult but vital for agriculture on the Westside. Part III will outline the complications facing drainage implementation on the Westside following the closure of Kesterson Reservoir. It will discuss the legal issues implicated by the Clean Water Act and the TMDL for the lower San Joaquin River. Further, it will explain the legal history of the cases that charged Reclamation with drainage responsibilities and ordered Reclamation to fulfill its duties under the San Luis Act.

Part IV profiles the Grassland Area Farmers and Westlands Water District. It describes the GAF's long-term drainage plan and establishes why it should be encouraged and continued. It contrasts the GAF's actions with Westlands' inaction and suggests that Westlands should take control over its drainage problem as the GAF has done. Finally, Part V establishes the necessity of continued delay in the enforcement of the TMDL for the GAF's drainage, the need for an amendment of the Basin Plan for the Sacramento River and San Joaquin River Basins, and the benefits of a legislative amendment to the San Luis Act. The Comment concludes by suggesting that while there is no perfect outcome for the

³⁸ The Clean Water Act only regulates discharges into waterways, not any other use of water. See discussion *infra* Part III.A.

³⁹ Interview with Chris Eacock, *supra* note 5.

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agricultural issues on the Westside, amendments to the Basin Plan and the San Luis Act will create a fair and practical solution that will reward the GAF for its affirmative action and not allow Westlands to reap similar benefits through inaction.

II. HISTORY OF WATER AND THE WESTERN SAN JOAQUIN VALLEY

A. BRIEF GEOLOGICAL HISTORY OF THE SAN JOAQUIN VALLEY

California's San Joaquin Valley runs from Sacramento and the San Francisco Bay Delta Estuary (the Delta) in the north, down the center of the state between the Sierra Nevada and the Coast Range to Bakersfield, encompassing the Tulare Basin and the cities of Fresno, Stockton, and Modesto.⁴⁰ Before major settlement of California in the 1800's, the San Joaquin Valley was predominantly freshwater wetlands teeming with wildlife.⁴¹ The main water source in the San Joaquin Valley was the San Joaquin River, which flows west out of the Sierra Nevada Mountains towards Fresno, then turns north through the San Joaquin Valley floor until it reaches the Delta.⁴² The east side of the San Joaquin Valley between the San Joaquin River and the Sierra Nevada benefits from large amounts of runoff and is thus fertile and excellent farmland.⁴³ On the west side of the Valley, however, the land is arid and receives only small amounts of runoff from the Coast Range.⁴⁴

About 600,000 years ago, most of the San Joaquin Valley was a lakebed.⁴⁵ As a result, an impermeable clay layer twenty to two hundred feet thick, called the Corcoran Formation, currently underlies most of the San Joaquin Valley.⁴⁶ The Corcoran Formation lies ten to forty feet below the San Joaquin Valley's surface and prevents water from passing through it.⁴⁷ This is because the soil is of a very fine texture, so water cannot easily flow through it.⁴⁸ Consequently, when the lands are irrigated, water that remains below the surface collects in pools above the

⁴⁰ Map of the San Joaquin Valley of California, GIS Data, esrp.csustan.edu/gis/maps/esrplulc.jpg (last visited Feb. 2, 2012).

⁴¹ Garone, *supra* note 2, at 111.

⁴² *Id.*

⁴³ See generally Presser, *supra* note 7.

⁴⁴ NORRIS HUNDLEY, JR., *THE GREAT THIRST, CALIFORNIANS AND WATER: A HISTORY* 7 (rev. ed. 2001).

⁴⁵ Garone, *supra* note 2, at 113.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Interview with Chris Eacock, *supra* note 5.

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clay layer and, in turn, oversaturates crops' roots.⁴⁹ This is problematic because most farm crops require well-drained soil in order to thrive.⁵⁰

In addition to this drainage issue, the soils in the entire San Joaquin Valley are saline and seleniferous.⁵¹ This is because in the Cretaceous Period a shallow sea covered what is now the Central Valley.⁵² As a result, the soil became embedded with salts and other elements, such as selenium.⁵³ The amount of salt and selenium in the soil occur at low enough concentrations to prevent the soil of the San Joaquin Valley from becoming toxic.⁵⁴ However, modernly, when irrigation water is applied to these soils, the salts are leached out, and, because the clay barrier prevents drainage, the salts build up and render the trapped water more and more saline and seleniferous.⁵⁵ Once the quantity of salts becomes concentrated in this manner, the soil cannot support most crops.⁵⁶ Further, this salt buildup becomes hazardous to wildlife.⁵⁷ Any irrigation of lands in the western San Joaquin Valley must contend with both the lack of drainage and the saline soils.

B. THE RECLAMATION ACT OF 1902 AND EFFORTS TO MAKE THE ARID LANDS OF THE WEST PRODUCTIVE

Following the United States' first severe depression in 1893 came the Progressive Era, which emphasized the implementation of specialized government agencies and aspired to conserve and efficiently use the nation's resources.⁵⁸ This focus included the Reclamation Act, which President Theodore Roosevelt signed into law in 1902.⁵⁹ The Reclamation Act created a program under which the federal government, through the newly created Bureau of Reclamation (Reclamation), would operate water projects in the West in order to reclaim arid lands and

⁴⁹ Garone, *supra* note 2, at 113.

⁵⁰ See generally Birkle et al., *supra* note 3.

⁵¹ Seleniferous substances are those that contain selenium. In this case, the soil and subsurface water are seleniferous because they contain selenium.

⁵² Presser, *supra* note 7, at 141.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ Birkle et al., *supra* note 3.

⁵⁷ See, e.g., Harry M. Ohlendorf, *Aquatic Birds and Selenium in the San Joaquin Valley*, in SELENIUM AND DRAINAGE: IMPLICATIONS FOR SAN FRANCISCO BAY AND THE CALIFORNIA ENVIRONMENT, PROCEEDINGS OF THE SECOND SELENIUM SYMPOSIUM 15 (1985).

⁵⁸ HUNDLEY, *supra* note 44.

⁵⁹ Walston, *supra* note 13, at 781 (2008).

make them productive.⁶⁰ The program stressed that western lands were to be agricultural, with an emphasis on small, family farms.⁶¹ Water rights for private landowners were limited to land tracts of 160 acres and were not meant to be available to absentee landowners or corporations.⁶²

In the late 1800's and early 1900's, the San Joaquin Valley was transformed for agricultural uses.⁶³ The wetlands were drained, slowly at first by individual settlers, then faster with the implementation of state and federal water projects under the push of the Reclamation Act.⁶⁴ Most of this agricultural development, however, was not occurring on the Westside because of its extreme arid, desert quality.⁶⁵ The first agriculture on the Westside was cotton farming during World War I.⁶⁶ Cotton was in high demand by the military, and it is a salt-tolerant crop that can handle poor soil quality.⁶⁷

One of the biggest Reclamation Act water projects in California is the Central Valley Project, which was initially constructed in the 1930's and 1940's.⁶⁸ Reclamation is in charge of the Central Valley Project, which consists of dams and canals for the purpose of "improving navigation, regulating the flow of the San Joaquin River and the Sacramento River, controlling floods, providing for storage and the delivery of the stored waters."⁶⁹ In addition to providing irrigation water for the settlers in the Central Valley, the government subsidized the water so farmers could put many acres into production and better utilize the western lands.⁷⁰ However, the Central Valley Project supplied water only to the eastside of the San Joaquin Valley, and the growers on the Westside also wanted to use Central Valley Project water.⁷¹

In response, Westside growers created Westlands Water District in

⁶⁰ See 43 U.S.C.A. §§ 371–573 (Westlaw 2011). The Bureau of Reclamation was originally named the "Reclamation Service," but the name was changed in the 1920s.

⁶¹ HUNDLEY, *supra* note 44, at 118.

⁶² *Id.*

⁶³ Garone, *supra* note 2, at 111.

⁶⁴ *Id.*

⁶⁵ Lloyd G. Carter, *Reaping Riches in a Wretched Region: Subsidized Industrial Farming and Its Link to Perpetual Poverty*, 3 GOLDEN GATE U. ENVTL. L.J. 5, 10 (2009).

⁶⁶ *Id.*

⁶⁷ *Id.* Growers were initially able to produce large quantities of cotton by drilling deep wells that tapped into the aquifer below the Corcoran Formation. But by the 1940's, the aquifer was becoming depleted.

⁶⁸ Walston, *supra* note 13, at 783.

⁶⁹ *United States v. Gerlach Live Stock Co.*, 339 U.S. 725, 731 (1950) (quoting congressional statements, 50 Stat. 844, at 850 (1937), and 54 Stat. 1198, at 1199–200 (1940)).

⁷⁰ Garone, *supra* note 2, at 113.

⁷¹ *Id.*

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1952.⁷² The growers in Westlands needed more water than nature provided in order to convert their property into productive agricultural land. Forming a water district was the first step in accumulating enough political power to bring water to the Westside. Westlands became the largest water district in the nation when it annexed West Plains Water District, spanning over 600,000 acres.⁷³ While most of the 200,000 acres of West Plains was of poor quality and suffered from drainage problems,⁷⁴ it was strategically important. West Plains lay adjacent to the site of a proposed expansion of the Central Valley Project.⁷⁵ In 1960, Westlands' water shortage came to an end with the San Luis Act, in which Congress authorized the expansion of the Central Valley Project to divert water to the Westside.⁷⁶

C. THE SAN LUIS ACT AND THE CREATION OF THE SAN LUIS UNIT

The San Luis Act of 1960 authorized the creation of the San Luis Unit,⁷⁷ which would ultimately construct the San Luis Reservoir to deliver water to Westlands and the other, smaller water districts of the Westside.⁷⁸ It also created the San Luis Drain to carry the irrigation drainage waters out of the San Luis Unit and into the Delta.⁷⁹ The project was supposed to be a joint federal and state effort between Reclamation and California Resources Agency's Department of Water Resources (DWR); however, DWR later withdrew its support of the project.⁸⁰ Reclamation built the San Luis Reservoir on its own and began

⁷² Carter, *supra* note 65, at 10.

⁷³ *Id.* at 11. Not only is Westlands the nation's largest water district, but it has proven to be the most powerful politically. Many of the landowners within the district are wealthy corporations, including Pacific and Standard Oil and J.G. Boswell Company. *See also* Garone, *supra* note 2, at 114–15. Pacific and Standard Oil controls about 200,000 acres in Westlands. J.G. Boswell Company is the single largest agricultural entity in the world and controls 23,000 acres in Westlands.

⁷⁴ BAY INSTITUTE OF SAN FRANCISCO, *SELENIUM & AGRICULTURAL DRAINAGE: IMPLICATIONS FOR SAN FRANCISCO BAY AND THE CALIFORNIA ENVIRONMENT* 6–7 (Second Selenium Symposium 1986).

⁷⁵ Carter, *supra* note 65, at 11.

⁷⁶ San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960).

⁷⁷ The San Luis Unit refers to the water and irrigation districts on the Westside that were included in the San Luis Act. Currently, they are Westlands Water District, Broadview Water District (all lands now retired), Charleston Drainage District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, Widren Water District, and the Camp 13 Drainage District.

⁷⁸ Carter, *supra* note 65, at 12.

⁷⁹ *Id.*

⁸⁰ Garone, *supra* note 2, at 116. With the election of Ronald Reagan as Governor of California in 1966, the political climate changed, because Reagan was not as supportive of water projects as his predecessors.

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delivering water to growers within the San Luis Unit in 1968.⁸¹ After the water deliveries were well underway, Reclamation began constructing the San Luis Drain.⁸²

The San Luis Act originally called for the San Luis Drain to extend 207 miles from the southern San Joaquin Valley to a northern discharge point in the Delta.⁸³ The drain would capture all irrigation runoff from Westlands and the other Westside growers and deposit it in the Delta.⁸⁴ From 1968 to 1975, Reclamation constructed an eighty-five-mile segment of the drain, starting at the southern end of Westlands and ending north of the Grasslands Water District, at Kesterson Reservoir.⁸⁵ Kesterson Reservoir was designed to be a flow-regulating reservoir between the Westside and the lower 103 miles of drain between Kesterson and the Delta.⁸⁶ However, budget constraints prevented the completion of the lower portion of the drain.⁸⁷ Kesterson became the terminus of the San Luis Drain.⁸⁸ Reclamation constructed a network of tile drains below the fine surface soils to collect drainage water above the Corcoran clay layer and cause it to flow into Kesterson Reservoir⁸⁹ or be pumped by subsurface sump pumps into the San Luis Drain to eventually flow into Kesterson Reservoir.⁹⁰

D. KESTERSON RESERVOIR AND NATIONAL WILDLIFE REFUGE

Kesterson Reservoir's primary purpose was to be a drainage terminus; however, it developed a secondary role as a wildlife habitat soon after it filled with drainage water.⁹¹ Kesterson Reservoir was located at the northern end of the Westside in Merced County in the Grassland Water District.⁹² The reservoir consisted of a series of shallow

⁸¹ *Id.*

⁸² *Id.*

⁸³ Order No. WQ 85-1, *supra* note 1.

⁸⁴ Carter, *supra* note 65, at 12. It was known at this time that the irrigation return flows would be full of salts and pesticides. This plan reflects the attitude at the time that the solution to pollution was through dilution. In other words, depositing the irrigation runoff in the Delta would take it to the San Francisco Bay and eventually the Pacific Ocean, thus diluting the pollutants to a "safe" level.

⁸⁵ Garone, *supra* note 2, at 116.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.* at 117.

⁹⁰ Carter, *supra* note 65, at 20.

⁹¹ Order No. WQ 85-1, *supra* note 1.

⁹² Carter, *supra* note 65, at 21.

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interconnecting ponds that spanned over 1,280 acres.⁹³ In 1970, the reservoir and its surrounding 4,600 acres were established as a wildlife refuge to be managed by the United States Department of the Interior's Fish and Wildlife Service (FWS).⁹⁴ The shallow ponds of Kesterson Reservoir became a prime habitat for wildlife, especially migratory waterfowl.⁹⁵

Discharges to Kesterson were primarily surface runoff until 1978, when the first subsurface drainage from the Westside farms in the San Luis Unit began entering the reservoir.⁹⁶ This subsurface runoff was full of salt and other trace elements leached from the soil during irrigation.⁹⁷ As a result, the water in the reservoir became increasingly saline.⁹⁸ In 1981, the Regional Water Board informed Reclamation that it must file a waste discharge report pursuant to the California Water Code for its three years of unregulated discharges.⁹⁹ Finally, after a total of five years without regulation, Reclamation filed its report.¹⁰⁰ But the damage had already been done.¹⁰¹ Selenium infiltration had had a devastating effect on wildlife at Kesterson Reservoir.¹⁰²

Selenium is a toxic element.¹⁰³ In high doses it causes reproductive failure and death in animals and humans.¹⁰⁴ The form of selenium in the soils of the San Joaquin Valley is water-soluble.¹⁰⁵ It is leached from the soil by agricultural irrigation, transported by subsurface drainage through the drainage tiles, and deposited in water bodies where it then enters the aquatic food chain through phytoplankton, algae, and other vegetation.¹⁰⁶ The selenium then travels up through the trophic levels of the food chain, accumulating in animals' organs and tissues.¹⁰⁷ As the amount of selenium increases, it becomes toxic to animals, eventually resulting in reproductive failure and death.¹⁰⁸ The naturally occurring concentration

⁹³ Order No. WQ 85-1, *supra* note 1.

⁹⁴ Garone, *supra* note 2, at 116.

⁹⁵ *Id.*

⁹⁶ Order No. WQ 85-1, *supra* note 1.

⁹⁷ Carter, *supra* note 65, at 19.

⁹⁸ Order No. WQ 85-1, *supra* note 1.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ Garone, *supra* note 2, at 119.

¹⁰² *Id.*

¹⁰³ Barnes, *supra* note 20.

¹⁰⁴ PRESSER & SCHWARZBACH, *supra* note 25.

¹⁰⁵ Garone, *supra* note 2, at 125–26.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 126.

¹⁰⁸ *Id.*

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of selenium in surface waters is 0.2–0.4 micrograms per liter ($\mu\text{g/L}$), and selenium is not toxic at that concentration.¹⁰⁹ The selenium concentration in the subsurface drainage entering Kesterson Reservoir was as high as 300 $\mu\text{g/L}$ between 1983 and 1985.¹¹⁰

FWS scientists estimated that between 1983 and 1985, 1,000 migratory birds died at Kesterson National Wildlife Refuge.¹¹¹ To discover the cause, FWS scientists conducted extensive studies that produced conclusive evidence that selenium from the alkali soils of the San Joaquin Valley was bioaccumulating¹¹² at Kesterson and killing massive amounts of wildlife.¹¹³ The California Department of Health Services issued notices to the public not to eat waterfowl from Kesterson.¹¹⁴ Soon after, the reservoir and wildlife refuge were closed to the public.¹¹⁵ Yet, subsurface agricultural drainage was still flowing into the reservoir.

In 1984, local landowners appealed to the California State Water Resources Control Board (State Water Board) to do something about the wildlife deaths at Kesterson.¹¹⁶ On February 5, 1985, the State Water Board ordered Reclamation to clean up Kesterson.¹¹⁷ The State Water Board found the ponds at Kesterson were waters of the state under the California Water Code and thus subject to its provisions.¹¹⁸ The State Water Board also found the selenium-laden water was a hazardous waste under the definitions of the California Toxic Pits Act and the California Health and Safety Code.¹¹⁹ Finally, the State Water Board found that the wastewater discharges at Kesterson created a public nuisance because of effects on the surrounding waterfowl habitat.¹²⁰

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 125.

¹¹¹ Ohlendorf, *supra* note 57.

¹¹² Bioaccumulation occurs when a substance (in this case selenium) is absorbed into the tissues of a living organism at a higher rate of intake than the rate of excretion or metabolic transformation of that substance. Toxic Substances Hydrology Program, United States Geological Survey, Bioaccumulation Definitions, toxics.usgs.gov/definitions/bioaccumulation.html (last visited Dec. 10, 2011).

¹¹³ Kilness & Simmons, *supra* note 9.

¹¹⁴ Garone, *supra* note 2, at 122.

¹¹⁵ *Id.*

¹¹⁶ Order No. WQ 85-1, *supra* note 1. The Clauses owned a duck-hunting club and cattle ranch adjacent to Kesterson and had observed dead and deformed waterfowl on their property. They initially petitioned the Regional Water Board to do something about Kesterson, but the Regional Water Board declined to hear the Clauses' petition.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

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In 1986, Reclamation complied with the order of the State Water Board.¹²¹ It plugged the tile drains beneath the surface soil and ceased all drainage deliveries to Kesterson.¹²² By the end of 1988, Reclamation had drained Kesterson Reservoir, graded it, and filled it with dirt.¹²³ Kesterson was buried and the solution to the Westside drainage problem had been buried with it.

What happened at Kesterson Reservoir is a dramatic demonstration of the dangers of irrigating on the Westside without a long-term drainage plan. Because of the soil conditions, irrigated agriculture is impossible on the Westside without a drainage outlet. However, drainage provisions cannot be accomplished by simply depositing all drainage water into a terminal basin. In order to farm on the Westside, there must be a comprehensive, long-term drainage plan. Otherwise, Westside runs the continued risk of another Kesterson disaster.

III. DEALING WITH THE DRAINAGE: THE CLEAN WATER ACT AND THE SAN LUIS ACT

The occurrences at Kesterson Reservoir and the closure of the San Luis Drain did not put an end to agriculture on the Westside. The farmers continue to cultivate the land in hope of Reclamation's next drainage solution. In addition to charging Reclamation with the responsibility of bringing Central Valley Project water to the farmers in the San Luis Unit, the San Luis Act also requires Reclamation to provide drainage for the agricultural return flows created by use of this water.¹²⁴ However, the disaster at Kesterson Reservoir prompted tightened Clean Water Act water quality standards for selenium.¹²⁵ The Clean Water Act would not allow Reclamation to merely deposit the saline and selenium-laden drainage water into the nearest flowing body of water, in this case the San Joaquin River.¹²⁶ As a consequence, Reclamation had to provide drainage under the San Luis Act, but it could not put the polluted drainage water anywhere without violating the Clean Water Act. This left farmers and Reclamation with a mounting drainage problem and no clear solution.

¹²¹ Garone, *supra* note 2, at 142.

¹²² *Id.*

¹²³ *Id.* at 132.

¹²⁴ See San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960).

¹²⁵ See EPA STAFF REPORT, TMDL FOR SELENIUM IN THE LOWER SAN JOAQUIN RIVER, *supra* note 33.

¹²⁶ See 33 U.S.C.A. § 1251 (Westlaw 2011).

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A. THE CLEAN WATER ACT AND AGRICULTURAL RETURN FLOWS

The purpose of the Federal Water Pollution Control Act (Clean Water Act) is to eliminate pollution in the nation's waterways.¹²⁷ When it was amended in 1972, it began employing a permitting system to control discharges of pollutants into waterways.¹²⁸ As a result, no discharge of a pollutant into a waterway from a point source¹²⁹ can take place without Clean Water Act oversight.¹³⁰ Under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) requires every applicable point source of pollutants to apply for a discharge permit before discharging pollutants into a waterway.¹³¹ Agricultural discharges, which are generally called agricultural return flows, are specifically exempted from NPDES permit requirements and regulated as nonpoint source pollution.¹³²

Nonpoint source pollution comes from diffused discharges of pollutants, which happen over large areas as water moves through or over the ground and deposits pollutants in waterways.¹³³ Because the NPDES permit program accounts only for point source pollution, the Clean Water Act requires states to create water quality control plans for all waterways impacted by pollution.¹³⁴ Each state must create a list of all its waterways that are impacted by pollution.¹³⁵ Additionally, the Clean Water Act requires the creation of TMDLs for specific water pollutants.¹³⁶ TMDLs determine the loading capacity, which is the maximum amount of a pollutant that can enter a waterway, so that the

¹²⁷ See 33 U.S.C.A. § 1251(a) (Westlaw 2011) ("The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.").

¹²⁸ See DANIEL A. FARBER & ROGER FINDLEY, ENVIRONMENTAL LAW IN A NUTSHELL 136 (2010).

¹²⁹ "The term 'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C.A. § 1362(14) (Westlaw 2011).

¹³⁰ See FARBER & FINDLEY, *supra* note 128, at 136.

¹³¹ See 33 U.S.C.A. § 1342 (Westlaw 2011).

¹³² See 33 U.S.C.A. § 1342(l)(1) (Westlaw 2011) ("The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly require any State to require such a permit.").

¹³³ See Mary Bianchi & Thomas Harter, *Nonpoint Sources of Pollution in Irrigated Agriculture*, in FARM WATER QUALITY PLANNING, UNIV. OF CAL. DIV. OF AGRIC. & NATURAL RES. PUBL'N 8055, at 1 (2002), available at groundwater.ucdavis.edu/Publications/Harter_FWQFS_8055.pdf.

¹³⁴ 33 U.S.C.A. § 1251(a) (Westlaw 2011).

¹³⁵ See 33 U.S.C.A. § 1313(d) (Westlaw 2011).

¹³⁶ See *id.*

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waterway will still meet water quality objectives for that pollutant.¹³⁷

An agricultural return flow is the water that runs off or drains from farmland.¹³⁸ These return flows can be surface flows, which run off the land over its surface into drainage ditches or other waterways. They can also be subsurface and flow below ground into aquifers, underground rivers, or drainage ditches. Agricultural return flows have long been known as a considerable source of water pollution because they carry with them any chemicals, such as pesticides or fertilizers, that have been applied to the fields.¹³⁹ Nevertheless, even though agricultural return flows originate from a single source, they are considered nonpoint sources because of the Clean Water Act exemption.¹⁴⁰ Accordingly, all return flows from the Westside are subject to nonpoint source regulation.¹⁴¹

The original water quality control plan for the San Joaquin River and Sacramento River basin (the Basin Plan) was created in 1975.¹⁴² In 1996, the Basin Plan was amended to specifically address selenium levels in the waterways.¹⁴³ In 2001, the Regional Water Board received approval from Environmental Protection Agency (EPA) of its TMDL for selenium in the lower San Joaquin River.¹⁴⁴ Both the Basin Plan and the TMDL seek selenium levels of five µg/L for moving waterways and two µg/L for wetlands.¹⁴⁵ In order to facilitate achievement of these levels for selenium, the 1996 Basin Plan included a compliance schedule for the GAF to meet with respect to selenium discharges to the San Joaquin River via the Grassland Bypass Project, the San Luis Drain, and Mud Slough.¹⁴⁶ The compliance schedule specified dates by which discharge requirements for selenium must be met in certain channels below the

¹³⁷ *Overview of Impaired Waters and Total Maximum Daily Loads Program*, U.S. ENVTL. PROT. AGENCY (Sept. 29, 2011), water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/overview.cfm.

¹³⁸ It is also referred to as agricultural runoff or drainage.

¹³⁹ See Bianchi & Harter, *supra* note 133, at 2.

¹⁴⁰ See *id.* at 1; see also 33 U.S.C.A § 1342(l)(1) (Westlaw 2011).

¹⁴¹ See David Zaring, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act's Bleak Present and Future*, 20 HARV. ENVTL. L. REV. 515, 517 (1996).

¹⁴² EPA STAFF REPORT, TMDL FOR SELENIUM IN THE LOWER SAN JOAQUIN RIVER, *supra* note 33.

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ DIV. OF WATER QUALITY, STATE WATER RES. CONTROL BD., CONSIDERATION OF A RESOLUTION APPROVING AMENDMENTS TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF SELENIUM IN THE LOWER SAN JOAQUIN RIVER BASIN 1 (Oct. 5, 2010), *available at* www.waterboards.ca.gov/board_info/agendas/2010/oct/100510_5.pdf [hereinafter DIV. OF WATER QUALITY, CONSIDERATION OF RESOLUTION AMENDING WATER QUALITY CONTROL PLAN].

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Grassland Drainage Area.¹⁴⁷ The compliance schedule was supposed to be fully executed by 2010 with selenium levels lowered as specified by the TMDL in all channels.¹⁴⁸

B. THE RAINBOW REPORT AND FIREBAUGH CANAL CO. V. UNITED STATES

When Reclamation plugged the tile drains and buried Kesterson under a million cubic yards of soil, it solved the immediate problem at Kesterson.¹⁴⁹ However, Reclamation had also eliminated any outlet for subsurface agricultural return flows. The Westside growers were still receiving 1.1 million acre-feet of water from the Central Valley Project annually, yet the same drainage problem persisted and the Westside's only drainage outlet had been eliminated.¹⁵⁰

Following Kesterson's closure, Reclamation assembled a diverse team of experts to study the region and design a new drainage plan.¹⁵¹ Experts from three Department of the Interior bureaus, Reclamation, FWS, and the United States Geological Survey (USGS), worked together with experts from the California Department of Fish and Game, DWR, and a multitude of public, private, and academic experts to compile a lengthy report known as the Rainbow Report.¹⁵² The Rainbow Report presented a fifty-year framework plan that consisted of eight major components: source control; drainage reuse; evaporation systems; land retirement; groundwater management; discharge to the San Joaquin River; protection, restoration and provision of substitute water supplies for fish and wildlife habitat; and institutional change.¹⁵³ The Rainbow Report acknowledged that implementing a drainage plan would be very difficult but was possible.¹⁵⁴ For reasons unclear, the Rainbow Report's

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ Garone, *supra* note 2, at 132.

¹⁵⁰ *Id.* at 115.

¹⁵¹ See U.S. DEP'T OF INTERIOR & CAL. RES. AGENCY, A MANAGEMENT PLAN FOR AGRICULTURAL SUBSURFACE DRAINAGE AND RELATED PROBLEMS ON THE WESTSIDE SAN JOAQUIN VALLEY: FINAL REPORT OF THE SAN JOAQUIN VALLEY DRAINAGE PROGRAM (Sept. 1990), available at esrp.csustan.edu/projects/lrdp/documents/rainbowreport.pdf [hereinafter MANAGEMENT PLAN, FINAL REPORT OF THE SAN JOAQUIN VALLEY DRAINAGE PROGRAM].

¹⁵² See *id.* The report had a multicolored cover, giving it its nickname. Some within Reclamation said it may also have gotten its name because it imagined an impossible drainage scenario like one might find in a fantasy filled with rainbows. Interview with Chris Eacock, *supra* note 5.

¹⁵³ MANAGEMENT PLAN, FINAL REPORT OF THE SAN JOAQUIN VALLEY DRAINAGE PROGRAM, *supra* note 151, at 1-3.

¹⁵⁴ *Id.* at iii (quoting Edgar A. Imhoff, program manager).

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recommendations were never implemented.¹⁵⁵

In 1991, Sumner Peck Ranch, Inc., and other landowners on the Westside sued Westlands and Reclamation for failing to provide adequate drainage.¹⁵⁶ Judge Wanger of the U.S. District Court for the Eastern District of California presided over the case and found that it was Reclamation's responsibility under the San Luis Act to provide drainage to the Westside growers.¹⁵⁷ The court ordered Reclamation to apply to the State of California for a discharge permit for the construction of a drain.¹⁵⁸

On appeal, *Sumner Peck Ranch, Inc. v. Bureau of Reclamation* was consolidated with *Firebaugh Canal Co. v. United States*.¹⁵⁹ Reclamation's primary argument in the district court was the contract defense of impossibility.¹⁶⁰ Reclamation agreed that it originally had an obligation to provide drainage to the farmers on the Westside; however, Kesterson had changed the circumstances so drastically that it had become impossible for Reclamation to provide a drainage solution.¹⁶¹ Reclamation instead argued that under *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*,¹⁶² the San Luis Act's plain meaning does not require Reclamation to build a drain for the Westside.¹⁶³ The court rejected this argument, finding that Reclamation's interpretation of the San Luis Act was directly in conflict with the requirements of the

¹⁵⁵ THE BAY INSTITUTE, CONTRA COSTA COUNTY, CONTRA COSTA COUNTY WATER AGENCY, CONTRA COSTA WATER DISTRICT, & ENVIRONMENTAL DEFENSE, *DRAINAGE WITHOUT A DRAIN: TOWARD A PERMANENT, RESPONSIBLE SOLUTION TO THE AGRICULTURAL DRAINAGE PROBLEM IN THE SAN JOAQUIN VALLEY* (Jan. 2003), available at www.bay.org/assets/drainage.pdf.

¹⁵⁶ *Sumner Peck Ranch, Inc. v. Bureau of Reclamation*, 823 F. Supp. 715 (E.D. Cal. 1993).

¹⁵⁷ See *Firebaugh Canal Co. v. United States*, 203 F.3d 568, 572–73 (9th Cir. 2000) (“In the judgment, the district court ordered the Secretary of the interior and the Bureau of Reclamation to ‘take such reasonable and necessary actions to promptly prepare, file and pursue an application for a discharge permit’ with the California Water Resources Control Board.” (quoting *Sumner Peck Ranch, Inc. v. Bureau of Reclamation*, No. CV-F-91-048 (E.D. Cal. Mar. 10, 1995); *Firebaugh Canal Co. v. United States*, No. CV-F-88-634 (E.D. Cal. Mar. 10, 1995))).

¹⁵⁸ *Firebaugh Canal Co.*, 203 F.3d at 572–73.

¹⁵⁹ Combined cases on appeal were *Sumner Peck Ranch, Inc.*, No. CV-F-91-048 (E.D. Cal. Mar. 10, 1995), and *Firebaugh Canal Co.*, No. CV-F-88-634 (E.D. Cal. Mar. 10, 1995). Neither trial court decision was reported or published.

¹⁶⁰ See *Sumner Peck Ranch, Inc.*, 823 F. Supp. at 748; see also *Firebaugh Canal Co.*, 203 F.3d at 572.

¹⁶¹ See *Sumner Peck Ranch, Inc.*, 823 F. Supp. at 748; see also *Firebaugh Canal Co.*, 203 F.3d at 572.

¹⁶² See *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842–44 (1984) (holding that if statute does not unambiguously address precise question at issue, agency's interpretation of statute is afforded considerable deference unless it is arbitrary, capricious, or manifestly contrary to statute).

¹⁶³ *Firebaugh Canal Co.*, 203 F.3d at 573.

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Act.¹⁶⁴

The Ninth Circuit Court of Appeals affirmed in part and reversed in part.¹⁶⁵ The court agreed with Judge Wanger that Reclamation had a duty under the San Luis Act to provide drainage to the San Luis Unit, but disagreed on the method for providing it.¹⁶⁶ The court held that Reclamation could exercise its discretion as to a solution for the drainage problem in the San Luis Unit, but it had to provide the drainage in some way.¹⁶⁷

Reclamation reached a settlement in 2002 with approximately 100 plaintiff-landowners involved in the consolidated *Firebaugh* cases.¹⁶⁸ Reclamation purchased the landowners' lands because the lack of drainage had already rendered them unfarmable.¹⁶⁹ Approximately 33,000 acres of these lands were retired from irrigated agricultural use.¹⁷⁰

As to the court order to provide drainage, Reclamation continues to formulate plans for a drainage solution and keep the court informed of its actions.¹⁷¹ In its most recent update, as of March 2010, Reclamation informed the court that it had begun steps to implement a drainage solution in the northern portion of Westlands Water District.¹⁷²

¹⁶⁴ *Id.* at 573–74 (“[A]lthough the Department of the Interior was only authorized (and not required) to construct the *unit*, once it decided to construct the unit, it was *required* to construct ‘necessary . . . drains’ as part of the unit.”).

¹⁶⁵ *Id.* at 568.

¹⁶⁶ *Id.* at 577 (“Although the district court can compel the Department of the Interior to provide drainage service as mandated by the San Luis Act, the district court cannot eliminate agency discretion as to how it satisfies the drainage requirement.”).

¹⁶⁷ *Id.* at 578 (“The Bureau of Reclamation has studied the problem for over two decades. In the interim, lands within Westlands are subject to irreparable injury cause by agency action unlawfully withheld. Now the time has come for the Department of the Interior and the bureau of Reclamation to bring the past two decades of studies, and the 50 million dollars expended pursuing an “in valley” drainage solution, to bear in meeting its duty to provide drainage under the San Luis Act.”).

¹⁶⁸ CAL. DEP’T OF WATER RESOURCES, CHRONOLOGY OF MAJOR LITIGATION INVOLVING THE CENTRAL VALLEY PROJECT AND THE STATE WATER PROJECT, VOL. 4 LITIGATION ART. 1 CALIFORNIA WATER PLAN UPDATE 5 (2009), *available at* www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v4c16a01_cwp2009.pdf.

¹⁶⁹ U.S. BUREAU OF RECLAMATION, STATEMENT ON SETTLEMENT OF SUMNER PECK RANCH, INC. v. BUREAU OF RECLAMATION (Dec. 10, 2002), *available at* www.propertyrightsresearch.org/statement_on_settlement_of_sumne.htm [hereinafter STATEMENT ON SETTLEMENT OF SUMNER PECK RANCH, INC.].

¹⁷⁰ *Id.*

¹⁷¹ *See id.*; *see also* *Firebaugh Canal Water Dist. v. United States*, Federal Defendants’ Status Report of April 1, 2010, Nos. CV-F-88-634 and CV-F-91-048 (partially consolidated) (E.D. Cal. Apr. 1, 2010).

¹⁷² *See* *Sumner Peck Ranch, Inc. v. Bureau of Reclamation*, No. CV-F-91-048 (E.D. Cal. Mar. 10, 1995); *Firebaugh Canal Co. v. United States*, No. CV-F-88-634 (E.D. Cal. Mar. 10, 1995) (partially consolidated).

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Reclamation came out with its long-term drainage plan for Westlands in 2008.¹⁷³ The San Luis Drainage Feature Re-evaluation (SLDFRE) is a management plan modeled after the GAF's drainage plan, but it is on a much larger scale due to Westlands' immense geographic scope with more than three times the number of drainage-impaired acres than are contained in the GAF's lands.¹⁷⁴

IV. THE TWO WATER DISTRICTS: THE GRASSLAND AREA FARMERS AND WESTLANDS WATER DISTRICT

A. GRASSLAND AREA FARMERS' LONG-TERM DRAINAGE MANAGEMENT PLAN

In 1996, the six northernmost water districts and drainage districts within the San Luis Unit allied to create a partnership called the Grassland Area Farmers (GAF).¹⁷⁵ This partnership consisted of seven districts comprising approximately 97,000 acres.¹⁷⁶ The GAF is unique in that most of its water does not come from the Central Valley Project.¹⁷⁷ Rather, four exchange contractors, Central California Irrigation District, Columbia Canal Company, San Luis Canal Company, and Firebaugh Canal Company, provide the water through perpetual contracts entered into with Reclamation in 1939.¹⁷⁸ The exchange

¹⁷³ See BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, MANAGING WATER IN THE WEST, SAN LUIS DRAINAGE FEATURE RE-EVALUATION: FEASIBILITY REPORT (Mar. 2008), available at www.usbr.gov/mp/sccao/sld/docs/sldfr_report/slfr_3-08_v02.pdf [hereinafter FEASIBILITY REPORT, 2008].

¹⁷⁴ See *id.*

¹⁷⁵ McGahan, *supra* note 27, at 24.

¹⁷⁶ These seven districts were originally Broadview Water District, Charleston Drainage District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, Widren Water District, and the Camp 13 Drainage District. Broadview Water District is no longer part of the GAF. All of its lands have been retired, and its portion of CVP water is now being delivered to Westlands. See McGahan, *supra* note 27, at 24. The seven districts are labeled "the Notherly Area" in Figure 2 at the conclusion of this Comment.

¹⁷⁷ Interview with Chris Eacock, *supra* note 5.

¹⁷⁸ See U.S. DEP'T OF THE INTERIOR, CONTRACT FOR THE EXCHANGE OF WATERS BETWEEN MILLER AND LUX CONTRACTING COMPANIES AND U.S. BUREAU OF RECLAMATION (July 27, 1939) (on file in Fresno County Book 1810, 50) [hereinafter CONTRACT BETWEEN MILLER, LUX AND U.S. BUREAU OF RECLAMATION]. These contracts have their origins in the beginning of the Central Valley Project in general and, specifically, in Reclamation's construction of the Friant Dam on the San Joaquin River in the 1940's. In 1939, Reclamation needed to interrupt the exchange contractors' appropriation rights to the San Joaquin River in order to construct Friant Dam. In exchange for the contractors' San Joaquin River water rights, Reclamation promised to provide the exchange contractors, in perpetuity and subordinate to none, the same amount of water from the Delta-Mendota Canal even if there was a drought or other water shortage. See also HUNDLEY, *supra* note

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contractors have priority over all other water contracts and thus never have to worry about receiving less than their full water allotment.¹⁷⁹ However, the GAF still has to worry about drainage. Because GAF's lands are located within the boundaries of the San Luis Unit, it was Reclamation's responsibility to provide the GAF with a drainage outlet.¹⁸⁰

When the GAF formed its partnership in March 1996,¹⁸¹ it had been without a drainage outlet for twelve years since the closure of Kesterson Reservoir.¹⁸² Concerned for the livelihood of its farmers, the GAF turned to the Rainbow Report that Reclamation issued in 1990, which included a list of recommendations to solve the drainage problems on the Westside.¹⁸³ The GAF used the Rainbow Report's findings to create its own long-term drainage plan in 1998.¹⁸⁴

As the *Sumner* case was pending, the GAF took the first step in formulating its long-term drainage plan.¹⁸⁵ The plan involved collecting all of the drainage coming out of the GAF's lands by putting it through the Grassland Drainage Area, which is at the northernmost border of the San Luis Unit.¹⁸⁶ As shown in Figure 2 at the conclusion of this Comment, the drainage water would then be pumped out of the subsurface channels, put into a bypass canal that would carry it around the Grassland Water District wetlands north of the Grassland Drainage Area, and then eventually transported to the San Joaquin River.¹⁸⁷ In 1995, Reclamation and the San Luis & Delta-Mendota Water

44, at 257.

¹⁷⁹ See CONTRACT BETWEEN MILLER, LUX AND U.S. BUREAU OF RECLAMATION, *supra* note 178, at 11–12.

¹⁸⁰ See San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960).

¹⁸¹ McGahan, *supra* note 27, at 24.

¹⁸² See *id.*

¹⁸³ MANAGEMENT PLAN, FINAL REPORT OF THE SAN JOAQUIN VALLEY DRAINAGE PROGRAM, *supra* note 151.

¹⁸⁴ THE BAY INSTITUTE ET AL., *supra* note 155.

¹⁸⁵ See GRASSLAND AREA FARMERS AND SAN LUIS & DELTA-MENDOTA WATER AUTHORITY, LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA (Sept. 30, 1998) [hereinafter LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA].

¹⁸⁶ See BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, FINDING OF NO SIGNIFICANT IMPACT AND SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT, GRASSLAND BYPASS CHANNEL PROJECT, FONSI NO. 96-01-MP (Nov. 3, 1995), available at www.swrcb.ca.gov/rwqcb5/water_issues/swamp/historic_reports_and_faq_sheets/1996_bpa/95_inte_rim_portion_sanluis_drain.pdf [hereinafter FONSI NO. 96-01-MP]; see also BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, AGREEMENT FOR USE OF THE SAN LUIS DRAIN, AGREEMENT NO. 6-07-20-w1319 (Nov. 3, 1995) [hereinafter AGREEMENT NO. 6-07-20-w1319].

¹⁸⁷ See LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA, *supra* note 185; see also Figure 2 at the conclusion of this Comment.

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Authority¹⁸⁸ signed an agreement (the 1995 Use Agreement) whereby the GAF could use a twenty-eight-mile segment of the San Luis Drain to transport drainage water from the northern portion of the GAF's land to Mud Slough and into the San Joaquin River.¹⁸⁹ The water flows north, from the GAF's lands in the San Luis Drain to the former Kesterson Reservoir, but instead is deposited into Mud Slough, which carries it first into the San Joaquin, and eventually the Delta.¹⁹⁰

The subsurface drainage traveling this route would be full of selenium and other constituents; therefore, the GAF planned to treat the drainage water and implement other conservation measures to avoid degrading the water quality of the San Joaquin River and the Delta. In doing so, the GAF would also ensure that it did not violate the Clean Water Act.¹⁹¹ This proposed regime became the basis of the GAF's ongoing plan to manage its irrigation return flows and create a sustainable farming practice on the Westside.

B. THE GAF'S DRAINAGE PLAN'S ADAPTIVE MANAGEMENT APPROACH YIELDS RESULTS

Since the GAF began implementing its drainage plan in 1998 it has enjoyed remarkable success. A major component in the success of the GAF's drainage plan is its adaptive management approach. Rather than feeling constrained to follow the plan exactly, the GAF has tried different approaches and utilized new technologies.¹⁹² The GAF has maintained an open-minded attitude and is receptive to suggestions and new ideas.¹⁹³ Likewise, the plan is not static and is revised yearly to address changes in methodology and both successes and failures.¹⁹⁴ Consequently, the current plan is quite different from the original one created in 1998.¹⁹⁵

¹⁸⁸ The San Luis & Delta-Mendota Water Authority is the umbrella organization that includes GAF.

¹⁸⁹ AGREEMENT NO. 6-07-20-w1319, *supra* note 186; *see also* Figure 2 at the conclusion of this Comment.

¹⁹⁰ U.S. DEP'T OF THE INTERIOR & SAN LUIS & DELTA-MENDOTA WATER AUTHORITY, GRASSLAND BYPASS PROJECT 2010-2019 FINAL ENVIRONMENTAL IMPACT STATEMENT AND ENVIRONMENTAL IMPACT REPORT (Aug. 2009), *available at* www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=4412.

¹⁹¹ *See* LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA, *supra* note 185; *see also* Figure 2 at the conclusion of this Comment.

¹⁹² Interview with Dennis Falaschi, *supra* note 31.

¹⁹³ *Id.*

¹⁹⁴ *See* Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

¹⁹⁵ *Compare* LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA, *supra* note 185, *with* Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

Like the Rainbow Report, the GAF's drainage plan involves multi-phase implementation.¹⁹⁶ Currently, the plan involves the following components: land retirement, source control, crop selection, groundwater management, regional reuse, drainage water treatment, and salt disposal.¹⁹⁷ Taken together, these elements will fully realize the GAF's drainage plan and create a completely in-valley drainage solution.¹⁹⁸ This means the GAF will not discharge any drainage water from its lands to any waterway because all drainage water will be treated within a closed system.¹⁹⁹

Land retirement involves removing land entirely from irrigated agriculture so that it no longer produces agricultural return flows.²⁰⁰ The GAF has already retired a significant portion of its lands, including Broadview Water District and the 1000 acres of Widren Water District, and continues to consider further land retirements.²⁰¹

Source control targets the initial application of water to crops as well as its transportation in canals.²⁰² In order to reduce drainage, water is applied conservatively by switching to less water-intensive crops. Additionally, utilizing more efficient irrigation technology reduces the amount of water used for irrigation.²⁰³ Irrigation methods such as drip irrigation, which applies water directly to the plant and only where needed, greatly reduce the amount of water used in irrigation.²⁰⁴ The GAF has already switched many fields to drip irrigation and is continuing to locate funding for farmers to make this switch.²⁰⁵ A significant amount of water is lost due to seepage from canals as well.²⁰⁶ Consequently, the GAF has and continues to line and re-line irrigation canals to reduce seepage loss.²⁰⁷

¹⁹⁶ LONG-TERM DRAINAGE MANAGEMENT PLAN FOR THE GRASSLAND DRAINAGE AREA, *supra* note 185.

¹⁹⁷ Interview with Dennis Falaschi, *supra* note 31; *see also* Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35; SAN JOAQUIN RIVER EXCHANGE CONTRACTORS WATER AUTHORITY, BROADVIEW WATER DISTRICT, PANOCHÉ WATER DISTRICT, AND WESTLANDS WATER DISTRICT, WESTSIDE REGIONAL DRAINAGE PLAN (May 2003), *available at* www.swrcb.ca.gov/rwqcb5/water_issues/salinity/library_reports_programs/westsd_regnl_dmg_plan_may2003.pdf [hereinafter WESTSIDE REGIONAL DRAINAGE PLAN].

¹⁹⁸ Interview with Dennis Falaschi, *supra* note 31.

¹⁹⁹ *Id.*

²⁰⁰ WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 10.

²⁰¹ Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35, at 4.

²⁰² WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 16.

²⁰³ *Id.*

²⁰⁴ Interview with Chris Eacock, *supra* note 5.

²⁰⁵ Interview with Dennis Falaschi, *supra* note 31.

²⁰⁶ WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 16.

²⁰⁷ Interview with Dennis Falaschi, *supra* note 31.

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Groundwater management is still in the pilot stage, but it has been found viable for extension region-wide.²⁰⁸ Groundwater management has found success in pumping subsurface water from above the Corcoran clay layer, but below the seleniferous soils, to use as irrigation water, which also reduces water table inundation from application of irrigation water.²⁰⁹

Regional reuse involves the reapplication of saline and seleniferous drainage water to fields of plants that naturally remove salts and selenium from water.²¹⁰ These plants generally have no commercial value and are used only for remediation of drainage water.²¹¹ Currently, the GAF is experiencing remarkable success in their regional reuse area, the San Joaquin River Water Quality Improvement Project (SJRIP or Reuse Area).²¹² The Reuse Area currently has 4280 acres in production and plans to eventually encompass 6000 acres.²¹³ At the Reuse Area, saline drainage water is applied in varying concentrations, depending on the crop, to salt-tolerant crops.²¹⁴ The crops then absorb the salty water, reducing the amount of drainage water.²¹⁵ Drainage water is applied over and over until the volume of drainage water is reduced to a manageable amount.²¹⁶

Finally, drainage water treatment and salt disposal eliminate the drainage water remaining after regional reuse.²¹⁷ Regional reuse greatly reduces the volume of drainage water, and what is left has a high concentration of salts and selenium.²¹⁸ The GAF intends to implement pilot programs to treat this remaining water through reverse osmosis, membrane and chemical systems, and flow-through wetlands bioremediation, which will remove the remaining salts and selenium.²¹⁹ Once this process is complete, the actual salts themselves will be disposed of or made available for possible market uses.²²⁰ Studies have suggested that the salts may be useful in markets such as construction

²⁰⁸ WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 8.

²⁰⁹ *Id.*

²¹⁰ *Id.* at 17.

²¹¹ *Id.*

²¹² See Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35, at 4.

²¹³ *Id.*

²¹⁴ Interview with Chris Eacock, *supra* note 5.

²¹⁵ *Id.*

²¹⁶ Interview with Dennis Falaschi, *supra* note 31.

²¹⁷ WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 18.

²¹⁸ *Id.*

²¹⁹ Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²²⁰ WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197, at 18.

and textiles.²²¹

To date, the GAF's long-term drainage plan is enjoying remarkable success.²²² On average, before the implementation of any of the measures of the drainage plan, 57,000 acre-feet of drainage came into the Grassland Drainage Area annually.²²³ With this drainage came 12,700 pounds of selenium and 240,000 tons of salt.²²⁴ With source control practices, the Reuse Area, and other measures that have been applied to date, only about 13,000 acre-feet of water remain, containing 1200 pounds of selenium and 55,500 tons of salt.²²⁵ At this time, the remaining water is being pumped into the Grassland Bypass Project to be hauled to the San Joaquin River via the twenty-eight-mile segment of the San Luis Drain and Mud Slough; however, this is a temporary practice that will discontinue when the remaining phases of the drainage plan are implemented.²²⁶ These remaining phases include treatment through reverse osmosis, bioremediation, and disposal or recycling of the concentrated salts and other constituents mentioned above, plus expansion of the Reuse Area and further source control measures.²²⁷ Even while the GAF continues to require use of the Grassland Bypass to discharge into the San Joaquin River, its discharges are within the levels mandated by the Basin Plan's compliance schedule for selenium under the Clean Water Act TMDL for nearly all channels below the Grassland Drainage Area.²²⁸

C. GIVING THE GAF MORE TIME: 2010 BASIN PLAN AMENDMENT EXTENDS THE SELENIUM COMPLIANCE SCHEDULE UNTIL 2019

In conjunction with the 1995 Use Agreement for use by the GAF of the twenty-eight miles of the San Luis Drain, Reclamation issued a Finding of No Significant Impact (FONSI) in accordance with the National Environmental Policy Act (NEPA) for the Grassland Bypass Project and use of the San Luis Drain.²²⁹ NEPA requires all discretionary

²²¹ *Id.*

²²² See Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²²³ *See id.*

²²⁴ *Id.*

²²⁵ *See id.*

²²⁶ Interview with Chris Eacock, *supra* note 5; see also fig.2 at the conclusion of this Comment.

²²⁷ Interview with Chris Eacock, *supra* note 5.

²²⁸ See Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35; see also DIV. OF WATER QUALITY, CONSIDERATION OF RESOLUTION AMENDING WATER QUALITY CONTROL PLAN, *supra* note 146, at 1.

²²⁹ FONSI No. 96-01-MP, *supra* note 186.

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federal actions to consider any environmental impacts and disclose them to the public prior to acting.²³⁰ If the agency finds that there will not be a significant environmental impact, the agency issues a FONSI and does not need to go through the strenuous process of preparing an environmental impact statement.²³¹ Reclamation's FONSI emphasized the interim nature of the Grassland Bypass Project.²³² One of the primary bases for the FONSI was that the Grassland Bypass Project would only be used for a maximum of five years.²³³

By 2001 the GAF had made considerable headway in implementing its drainage plan.²³⁴ However, the GAF was still discharging return flows into the San Joaquin River, and these return flows contained selenium and other constituents exceeding the amount mandated by the 1996 Basin Plan compliance schedule. Accordingly, the Use Agreement for the San Luis Drain had to be extended for continued use of the Grassland Bypass and San Luis Drain while further measures to reduce selenium levels were sought by the GAF.²³⁵ This time, a FONSI was not sufficient, and Reclamation and the San Luis & Delta-Mendota Water Authority issued an Environmental Impact Statement and Report.²³⁶

The original selenium objectives of the 1995 Use Agreement and 1996 Basin Plan had not been met, and the interim, no-more-than-five-year use of the Grassland Bypass was being extended for nine more years. Nonetheless, the 2001 Basin Plan, Use Agreement, and Environmental Impact Statement and Report were all optimistic that the five µg/L/two µg/L selenium levels required by the Clean Water Act's TMDL would be met because deadlines in the compliance schedule had been extended to December 31, 2009. However, this proved to be an overly optimistic assessment. The GAF had reached the compliance schedules deadlines for most of the waterways below the Grassland Drainage Area; however, selenium levels in Mud Slough and the lower

²³⁰ See 42 U.S.C.A. § 4321 (Westlaw 2011).

²³¹ See 42 U.S.C.A. § 4332 (Westlaw 2011).

²³² See FONSI NO. 96-01-MP, *supra* note 186.

²³³ *Id.*

²³⁴ McGahan, *supra* note 27.

²³⁵ U.S. BUREAU OF RECLAMATION & SAN LUIS & DELTA-MENDOTA WATER AUTHORITY, AGREEMENT FOR USE OF THE SAN LUIS DRAIN FOR THE PERIOD OCTOBER 1, 2001 THROUGH DECEMBER 31, 2009, AGREEMENT NO. 01-WC-20-2075 (Sept. 29, 2001), *available at* www.usbr.gov/mp/grassland/documents/agrmnt_01_WC_20_2075.pdf.

²³⁶ U.S. BUREAU OF RECLAMATION & SAN LUIS & DELTA-MENDOTA WATER AUTHORITY, FINAL ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT, GRASSLAND BYPASS PROJECT, *available at* www.usbr.gov/mp/grassland/documents/eis_eir_rpt_overview.pdf [hereinafter FEIS/EIR, GRASSLANDS BYPASS PROJECT].

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San Joaquin River were still above the schedules' target levels.²³⁷

As 2009 approached, the GAF could see that it did not have the funding or resources to finish expanding the Reuse Area, or to install treatment plants or initiate other mitigation measures before the Grassland Bypass Project and Use Agreement expired.²³⁸ In 2007, the GAF began discussing extending the Grassland Bypass Project and Use Agreement.²³⁹ In 2009, an Environmental Impact Statement and Report for the extension was approved by the San Luis & Delta-Mendota Water Authority.²⁴⁰ Subsequently, Reclamation issued a Record of Decision extending the Grassland Bypass Project to 2019 and signed a new Use Agreement for use of the twenty-eight-mile segment of the San Luis Drain with the GAF.²⁴¹ The final step in achieving the GAF's request for more time was an amendment to the Basin Plan for the Sacramento River and San Joaquin River Basins (Basin Plan Amendment) to allow for an extension of the compliance schedule for the GAF to meet the water quality and waste discharge requirements of the 2001 TMDL for selenium in the lower San Joaquin River.²⁴²

When the Regional Water Board opened the comment period for the Basin Plan Amendment in May 2010, the response was raucous.²⁴³ State and federal government agencies, nongovernmental organizations, and private citizens all had input, and it seemed Kesterson was foremost in many people's minds.²⁴⁴ The groups' main concern about the Basin Plan Amendment was that nine years and three months was too long an extension, and two years would be more reasonable.²⁴⁵ It was reasonable

²³⁷ DIV. OF WATER QUALITY, CONSIDERATION OF RESOLUTION AMENDING WATER QUALITY CONTROL PLAN, *supra* note 146, at 2.

²³⁸ Interview with Chris Eacock, *supra* note 5; *see also* Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²³⁹ Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²⁴⁰ *See* FEIS/EIR, GRASSLANDS BYPASS PROJECT, *supra* note 236.

²⁴¹ *See* AGREEMENT NO. 10-WC-20-3975, *supra* note 33.

²⁴² *See* CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION, RESOLUTION NO. R5-2010-0046 AMENDING THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF SELENIUM IN THE LOWER SAN JOAQUIN RIVER BASIN (May 27, 2010), *available at* www.swrcb.ca.gov/rwqcb5/board_decisions/adopted_orders/resolutions/r5-2010-0046_res.pdf.

²⁴³ *See Total Maximum Daily Load Program, Central Valley Regional Water Quality Control Board*, STATE WATER RESOURCES CONTROL BOARD, www.swrcb.ca.gov/water_issues/programs/tmdl/#rb5 (last visited Dec. 11, 2011).

²⁴⁴ *See e.g. Public Comments Regarding San Joaquin River Selenium Basin Plan Amendment*, STATE WATER RESOURCES CONTROL BOARD (Sept. 23, 2010), www.swrcb.ca.gov/water_issues/programs/tmdl/comments_sjr_selenium.shtml [hereinafter *Public Comments Regarding Selenium Basin Plan*].

²⁴⁵ *Id.*

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for concerned parties to question the propriety of a nine-year extension due to the fact that the GAF had already received an extension. However, in light of the advances already made toward an in-valley solution to drainage on the GAF's lands, the benefits of a nine-year extension outweigh the harm of allowing the GAF only two years, because two years is not enough time for the GAF to complete its drainage plan.

D. CURRENT STATE OF WESTLANDS WATER DISTRICT: AS REGRESSIVE AS THE GAF IS PROGRESSIVE

After Kesterson closed and the tile drains were plugged, both Westlands and the GAF had lost their drainage outlet. Both Westlands and the GAF continued irrigating while waiting for Reclamation to provide drainage. When it became clear Reclamation's solutions would not be implemented in a timely manner, Westlands and the GAF continued to irrigate without a drainage outlet.²⁴⁶ However, the GAF began to formulate and implement its own drainage program,²⁴⁷ while Westlands continued to wait for Reclamation's drainage solution.

While Westlands did not follow the GAF's example, it did not ignore the drainage issue entirely. Westlands implemented, and continues to implement, more efficient irrigation practices, such as drip irrigation, to reduce the amount of water applied to the land.²⁴⁸ It has also been transferring some of its agricultural land to permanent crops such as stone fruits, pomegranates, and pistachios, which use very little water once established.²⁴⁹ For example, since 2002, Westlands has doubled its acreage of almonds, while also reducing cotton acreage by an average of 67% for all varieties.²⁵⁰ Finally, it has fallowed land that has already had its water table inundated.²⁵¹ Nevertheless, even with these more efficient

²⁴⁶ See U.S. BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, MANAGING WATER IN THE WEST, SAN LUIS DRAINAGE FEATURE RE-EVALUATION: RECORD OF DECISION 6 (Mar. 2007), available at www.usbr.gov/mp/sccaosld/docs/sld_feature_reeval_rod.pdf [hereinafter RECORD OF DECISION (Mar. 2007)].

²⁴⁷ See *supra* Part IV.A–C.

²⁴⁸ Interview with Chris Eacock, *supra* note 5.

²⁴⁹ *Id.*

²⁵⁰ Compare *1993–2002 Crop History*, WESTLANDS WATER DISTRICT, www.westlandswater.org/wwd/crop_reports/Current/summary.pdf?title=1993-Current%20Year&cwide=1280 [hereinafter *1993–2002 Crop History*], with *2010 Crop Acreage Report*, WESTLANDS WATER DISTRICT, www.westlandswater.org/wwd/crop_reports/2010/croprpt.pdf?title=2010&cwide=1280 [hereinafter *2010 Crop Acreage Report*] (almonds acreage in 2002 was 34,794 and 68,255 in 2010; acala cotton acreage was 101,306 in 2002 and 4200 in 2010; pima cotton acreage was 60,727 in 2002 and 38,280 in 2010).

²⁵¹ See *id.* Between 1993 and 2002, on average 55,778 acres were fallowed. *1993–2002 Crop History*, *supra* note 250. In 2010, 122,598 acres were fallowed. *2010 Crop Acreage Report*, *supra*

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practices, irrigation water is still being applied to the land, and it has nowhere to go but into the shallow groundwater table above the Corcoran Clay barrier.²⁵²

With the continued application of irrigation water and the continued stagnation of subsurface drainage water in the water table, Westlands is running out of time.²⁵³ If the current practices continue, the salty, selenium-rich subsurface water will continue to rise until it reaches the surface.²⁵⁴ When that happens, the stagnant moisture and abundance of salts will kill the root systems of all crops, creating an unfarmable wasteland.²⁵⁵

This puts Westlands in an interesting predicament. Reclamation provides water from the Central Valley Project; this water is heavily subsidized both in its acre-foot price and in the electricity it costs to pump it, and the majority of the crops Westlands farmers grow earn huge profits because they are also subsidized by the U.S. Department of Agriculture.²⁵⁶ However, the water and crop subsidies—and the farmers' livelihoods—still rely on the nonexistent drainage that today exists only on paper in Reclamation's SLDFRE.²⁵⁷ Reclamation completed the SLDFRE in 2008.²⁵⁸ Due to the large size of Westlands, Reclamation only has the resources to implement the SLDFRE in three phases—Westlands North first, followed by Westlands Central and South.²⁵⁹ Reclamation *began* implementation of the plan in Westlands North in 2010.²⁶⁰

What are the farmers of Westlands required to do? It would appear that they are already doing everything the law requires of them. They are irrigating as efficiently as possible, they are using the water their water rights have afforded them to grow crops for the nation's benefit, and they are not polluting the waterways of the nation with their agricultural

note 250.

²⁵² Sylvester, *supra* note 8.

²⁵³ See PRESSER & SCHWARZBACH, *supra* note 25; *see also* Presser, *supra* note 7.

²⁵⁴ See PRESSER & SCHWARZBACH, *supra* note 25; *see also* Presser, *supra* note 7.

²⁵⁵ See Order No. WQ 85-1, *supra* note 1.

²⁵⁶ See Renee Sharp & Bill Walker, *Power Drain*, ENVIRONMENTAL WORKING GROUP (May 2007), www.ewg.org/reports/powersubsidies.

²⁵⁷ See RECORD OF DECISION (Mar. 2007), *supra* note 246.

²⁵⁸ See discussion *supra* Part III.B para. 7; *see also* FEASIBILITY REPORT, 2008, *supra*

note 173.

²⁵⁹ See FEASIBILITY REPORT, 2008, *supra* note 173; *see also* Figure 1 at the conclusion of this Comment.

²⁶⁰ See Firebaugh Canal Water Dist. v. United States, Federal Defendants' Status Report of April 1, 2010, Nos. CV-F-88-634 and CV-F-91-048 (partially consolidated) (E.D. Cal. Apr. 1, 2010).

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runoff. However, in doing all of this they are also destroying their land to the point that it will not be farmable in the future.²⁶¹ The SLDFRE does outline a drainage solution for Westlands, but Westlands growers have already been irrigating their land without a drainage outlet for about twenty-five years.²⁶² It is highly unlikely that the salination of the water table will hold off long enough for the SLDFRE drainage plan to be fully implemented.²⁶³

The plan for Westlands in the SLDFRE is three times larger than the plan for the GAF because of the acreage and resources the SLDFRE requires.²⁶⁴ The GAF's drainage plan should be done by 2015,²⁶⁵ and the GAF began in 1998.²⁶⁶ Arguably, application of drainage in Westlands will be faster because the techniques have already been explored and refined in the Grassland Drainage Area, but the Westlands' drainage plans must take into account that Westlands is more than three times the size of the GAF's lands.²⁶⁷ Because Westlands' total drainage-impaired farmland is roughly three times as large in geographic scope than the GAF's lands, the Westlands' drainage plan will require three times the amount of construction, costs, and resources.²⁶⁸

Additionally, because of limitations on resources, Reclamation would have to implement each of the three sections of Westlands' drainage plan separately.²⁶⁹ The plan requires an infrastructure similar to what is currently in the Grassland Drainage Area in each of the three portions of Westlands.²⁷⁰ If each third of Westlands takes the same amount of time to implement as the Grassland Drainage Area did, it will take fifty-one years to fully implement the SLDFRE, and Westlands has already gone without drainage for twenty-five years. This means it will be a total of forty-two years before Westlands North gets drainage, fifty-

²⁶¹ Interview with Chris Eacock, *supra* note 5.

²⁶² Counting from the closure of the tile drains to Kesterson in 1985.

²⁶³ See generally *Why Land Retirement Makes Sense for Westlands Water District*, WESTLANDS WATER DISTRICT, available at www.westlandswater.org/long/200201/landretirebro.pdf (last visited Dec. 11, 2011) [hereinafter *Why Land Retirement Makes Sense for Westlands*].

²⁶⁴ FEASIBILITY REPORT, 2008, *supra* note 173.

²⁶⁵ Interview with Dennis Falaschi, *supra* note 31.

²⁶⁶ See Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²⁶⁷ See FEASIBILITY REPORT, 2008, *supra* note 173; see also Figure 1 at the conclusion of this Comment.

²⁶⁸ See FEASIBILITY REPORT, 2008, *supra* note 173; see also Figure 1 at the conclusion of this Comment.

²⁶⁹ See discussion *supra* Part IV.D. para. 4; see also FEASIBILITY REPORT, 2008, *supra* note 173.

²⁷⁰ See FEASIBILITY REPORT, 2008, *supra* note 173.

nine years for Westlands Central, and seventy-six years for Westlands South.²⁷¹ Currently, about half of Westlands' lands are facing immediate drainage impairment,²⁷² with the water table only about five feet below the surface in many instances.²⁷³ Westlands has also had to fallow increasing amounts of acres every year.²⁷⁴ It is highly plausible that many of the lands in Westlands will become unfarmable before the drainage plan is complete in all three sections.

This is problematic because the Clean Water Act regulates discharges to waterways, but it does not regulate the pollution of subsurface water tables that degrade the land above to the point of uselessness for agriculture. As long as Westlands is not discharging its selenium-laden drainage water to the San Joaquin River, it is outside of the scope of the Clean Water Act and the TMDL for the lower San Joaquin River. Furthermore, notwithstanding their own demise, the Westlands growers have no motivation to create their own drainage infrastructure because it is Reclamation's responsibility by legislative mandate.²⁷⁵ It seems inconsistent with the purpose of the Clean Water Act²⁷⁶ that farmers who are creating poisonous runoff should not have the responsibility of managing it.

V. TWO NECESSITIES FOR THE FUTURE: EXTENSION OF SELENIUM TMDL COMPLIANCE SCHEDULE FOR THE GAF AND A CONGRESSIONAL AMENDMENT TO THE SAN LUIS ACT

The situations of the GAF and Westlands illustrate the difficulty of irrigated farming in the region and the current inadequacy of regulation. The GAF is not yet able to comply with the terms of the TMDL for the lower San Joaquin River under the Clean Water Act, while the Clean Water Act is simply inapplicable to Westlands. Yet, it is clear the

²⁷¹ Calculation based on assumption Grassland Area Drainage will take seventeen years (1998–2015). Seventeen multiplied by three (for all three sections of Westlands) comes to a figure of fifty-one years; that plus the twenty-five years that have already passed since Kesterson's closure equals seventy-six years. This is a worst-case-scenario calculation because it assumes each section of Westlands will require the same number of years to implement as in the Grassland Drainage Area. It seems logical, however, that once the plan has been fully executed in one section it will take less time for the following sections.

²⁷² See Figure 1 at the conclusion of this Comment.

²⁷³ *Why Land Retirement Makes Sense for Westlands*, *supra* note 263.

²⁷⁴ See *Fallowed Acreage*, WESTLANDS WATER DISTRICT, www.westlandswater.org/wwd/crop_reports/fallow/summary.pdf?title=Fallowed%20Land&cwide=1280 (last visited Dec. 11, 2011); see also *2010 Crop Acreage Report*, *supra* note 250.

²⁷⁵ See San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960).

²⁷⁶ "The objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C.A. § 1251(a) (Westlaw 2011).

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activities of the GAF are preferable to those of Westlands. The purpose of the Clean Water Act “is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”²⁷⁷ To foster this purpose, the Clean Water Act encourages a holistic approach to problems of water pollution. Polluting land is not an acceptable substitute for keeping pollution out of waterways. Westlands farmers should not be able to avoid all liability by pouring their polluted drainage water into their land rather than discharging it as the GAF does.

Reclamation has been responsible for providing drainage for the region for decades, and so far, the only comprehensive drainage attempt was a complete debacle.²⁷⁸ Because the existing framework has been failing so miserably for over thirty years, it may be time to consider an alternative. Such an alternative does not need to require the retirement of all of Westlands’ drainage-impaired acreage. Right next door to Westlands, the GAF is successfully providing its own drainage solution, albeit on a smaller scale. Further, Reclamation has already expanded the GAF model for Westlands on paper in its SLDFRE.²⁷⁹

While Westlands could wait for Reclamation to implement the SLDFRE, it is going to take far too many years for the SLDFRE’s drainage infrastructure to take effect.²⁸⁰ Further, implementation of the SLDFRE is going to cost Reclamation—and American taxpayers—billions of dollars²⁸¹ that Westlands will never be able to repay.²⁸² Finally, as the *Firebaugh* case shows, if Reclamation is not able to get the drainage mechanisms in place soon enough, Reclamation may face lawsuits from Westlands’ farmers.²⁸³

Rather than have the taxpayers and Reclamation pay for Westlands’ drainage plan while Reclamation faces potential lawsuits, the drainage responsibility should shift to those who are creating the drainage. The only reason Reclamation is preparing to spend billions of dollars to give Westlands drainage is because the San Luis Act commands Reclamation

²⁷⁷ *Id.*

²⁷⁸ See Order No. WQ 85-1, *supra* note 1, quoting CALIFORNIA DEPARTMENT OF WATER RESOURCES BULLETIN 127-47 (1974).

²⁷⁹ See discussion *supra* Parts III.B, IV.D.

²⁸⁰ See discussion *supra* Parts III.B, IV.D.

²⁸¹ Reclamation estimates that the SLDFRE’s total construction costs will be \$2,687,115,000.00 in 2006 dollars. FEASIBILITY REPORT, 2008, *supra* note 173, at xii.

²⁸² *Id.* (“[N]one of the four water districts [Pacheco, Panoche, San Luis, and Westlands] have the ability to fully repay its assigned capital costs of drainage service facilities. The implementation of this alternative [In-Valley/Water Needs Land Retirement Alternative] far exceeds their ability to repay the associated costs of the project when coupled with their existing obligations.”).

²⁸³ See discussion *supra* Part III.B.

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to do so.²⁸⁴ The GAF's success should be a model for Congress to reconsider the drainage provisions of the San Luis Act to make Westlands responsible for providing its own drainage just as the GAF is. If Westlands cannot or will not do so, land retirement is inevitable because the land will become unfarmable once the seleniferous water table rises to the surface.

A. THE BENEFITS OF EXTENDING THE BASIN PLAN OUTWEIGH THE BENEFITS OF ENFORCING ITS EXPIRATION

In 2010, the GAF sought to have the Basin Plan amended to extend the compliance deadlines for selenium until 2019.²⁸⁵ The Grassland Bypass Project and the GAF's discharges of drainage water below the Grassland Drainage Area were supposed to continue only until 2001 and had already been extended once.²⁸⁶ Thus, the 2010 Basin Plan Amendment was met with considerable skepticism.²⁸⁷ However, the GAF has already made tremendous headway and is in the final phases of fully realizing its long-term drainage plan.²⁸⁸ The GAF has already reduced drainage and selenium levels drastically, and the resources and technology required to complete the plan are either in the GAF's possession or attainable in the near future.²⁸⁹

Nine more years for the GAF to finish its plans to reduce selenium discharges may seem like a long time, but it is reasonable in light of the progress the GAF has already made. Since 1995, the GAF has reduced the volume of drainage water discharged from the Grassland Drainage Area by 77%.²⁹⁰ It has reduced the total pounds of selenium and salt released into the San Joaquin River 89% and 77%, respectively.²⁹¹ After the remaining 2000 acres that have already been acquired by the Reuse Area are put into production, the GAF anticipates these acres will be able to eliminate the 13,000 acre-feet of drainage water that was discharged in water year²⁹² 2009.²⁹³ Further, while the extension is for nine years, the

²⁸⁴ See discussion *supra* Part III.B.

²⁸⁵ See discussion *supra* Part III.A.

²⁸⁶ See discussion *supra* Part III.A.

²⁸⁷ See discussion *supra* Part IV.C; see, e.g., *Public Comments Regarding Selenium Basin Plan*, *supra* note 244.

²⁸⁸ See discussion *supra* Part IV.C.

²⁸⁹ See discussion *supra* Part IV.C.

²⁹⁰ Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²⁹¹ *Id.*

²⁹² The water year runs from October to September. For example, water year 2009 ran from October 2009 through September 2010. The start of the water year marks the beginning of California's rainy season.

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GAF is confident it can achieve its zero discharge goal by 2015.²⁹⁴

This is not an overly optimistic statement, as the land for additional reuse is already in their possession. Furthermore, more source control conservation practices, such as drip irrigation systems, are being implemented. Finally, the technology to perform reverse osmosis on the remaining drainage water is available.²⁹⁵ The innovations employed by the GAF and its adaptive management approach illustrate a complete overhaul of the agriculture systems in the Grassland Drainage Area.²⁹⁶ The GAF, through its Use Agreement with Reclamation, is implementing these practices and should be helped, encouraged, and emulated,²⁹⁷ even if this means allowing the GAF more time to finish what it has started.

There are many critics and skeptics when it comes to a discussion of the successes of the GAF.²⁹⁸ USGS has questioned whether the GAF can implement the technology to remove selenium from the drainage water remaining after reuse.²⁹⁹ There are also many claims that despite Westlands having no drainage outlet, water from Westlands North is draining into the Grassland Drainage Area,³⁰⁰ and that the reductions the GAF has achieved to date are completely due to land retirements in Broadview Water District.³⁰¹ Finally, the Reuse Area is constantly critiqued as having negative impacts on local wildlife.³⁰²

Similar criticism regarding adequate treatment technology comes from analyses of the SLDFRE, which outlines treatment for both the Grassland Drainage Area and all of Westlands.³⁰³ This concern centers on whether there is available technology to deal with the high water

²⁹³ Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

²⁹⁴ Interview with Dennis Falaschi, *supra* note 31.

²⁹⁵ *Id.*

²⁹⁶ See WESTSIDE REGIONAL DRAINAGE PLAN, *supra* note 197. The Clean Water Act encourages such practices through programs such as section 319 grants. See 33 U.S.C.A. § 1329 (Westlaw 2011); see also *Clean Water Act Section 319*, U.S. ENVTL. PROT. AGENCY, www.epa.gov/owow/_keep/NPS/cwact.html#bkground (last visited Dec. 11, 2011).

²⁹⁷ See *Nonpoint Source Pollution Control: Breaking the Regulatory Stalemate*, ENVIRONMENTAL DEFENSE, www.envtn.org/uploads/GTLP-PNG.PDF (last visited Dec. 11, 2011).

²⁹⁸ See, e.g., *Public Comments Regarding Selenium Basin Plan*, *supra* note 244.

²⁹⁹ See PRESSER & SCHWARZBACH, *supra* note 25.

³⁰⁰ See, e.g., *Public Comments Regarding Selenium Basin Plan*, *supra* note 244.

³⁰¹ See Letter from Carolee Krieger, California Water Impact Network, Bill Jennings, California Sportfishing Protection Alliance, and Barbara Vlamis, AquAlliance, to Jeanine Townsend, State Water Resources Control Board (Sept. 22, 2010), available at www.swrcb.ca.gov/water_issues/programs/tmdl/docs/sjr_selenium/comments092210/carolee_krieger.pdf [hereinafter Letter from Carolee Krieger].

³⁰² See *id.*

³⁰³ FEASIBILITY REPORT, 2008, *supra* note 173.

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volume that Westlands' drainage will create.³⁰⁴ However, these concerns are founded on faulty propositions in evaluating the GAF.

Looking only at the Grassland Drainage Area reduces the volume of drainage to be considered by three fourths because the GAF's land acreage is significantly smaller than Westlands'.³⁰⁵ Therefore, a much smaller treatment operation is required and thus treatment becomes more feasible.³⁰⁶ In addition, currently without any treatment beyond regional reuse, the GAF is almost always below selenium discharge requirements mandated by the EPA.³⁰⁷ Even if treatment is unable to eliminate 100% of selenium as the GAF intends, further reduction of selenium levels and discharge volume will only help the GAF remain below EPA standards. In addition, reduction will ease the burden of meeting future EPA standards, which will likely be lower.³⁰⁸

Claims that subsurface drainage is flowing from Westlands North into the GAF's lands³⁰⁹ and the Grassland Drainage Area are flawed and misguided. Reclamation and the GAF firmly hold that no subsurface drainage flows from Westlands into the Grassland Drainage Area.³¹⁰ Even if it did, it has been doing so since the drains were plugged in the 1980's because all drainage from Westlands must³¹¹ flow north into the Grassland Drainage Area or northeast into drainage tributaries of the San Joaquin River.³¹² It follows that any volume of subsurface drainage that may be coming from Westlands has either been counted with the total

³⁰⁴ See, e.g., *Public Comments Regarding Selenium Basin Plan*, *supra* note 244.

³⁰⁵ See Figure 1 at the conclusion of this Comment. GAF's land encompasses most of the Northerly Area, which is less than one quarter of the entire San Luis Unit, the other "quarters" being Westlands North, Westlands Central, and Westland South.

³⁰⁶ See WATER QUALITY ASSOCIATION, TECHNICAL APPLICATION BULLETIN: SELENIUM 3 (Mar. 2005), available at www.wqa.org/pdf/TechBulletins/TB-Selenium.pdf ("At the present time, it appears that any of these methods [reverse osmosis, distillation, and activated alumina] can be made practical, feasible, and economical for selenium reduction"); see also Andrea Ghermandi & Rami Messalem, *Solar-Driven Desalination with Reverse Osmosis: The State of the Art*, in *DESALINATION AND WATER TREATMENT* 285 (2009), available at w3.bgu.ac.il/ziwr/faculty/messalem/documents/1.pdf (reverse osmosis is also feasible without using fossil fuels).

³⁰⁷ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34; see also Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

³⁰⁸ See Letter from Michael J. Spear, Manager, California/Nevada Operations Office, U.S. Fish & Wildlife Serv., and Rodney R. McInnis, Southwest Regional Office, National Marine Fisheries Serv., to Felicia Marcus, U.S. Env'tl. Prot. Agency, Region 9 (Mar. 24, 2000) (on file with the author) (current standards are five µg/L for waterways and two µg/L for wetlands, but EPA has been exploring lowering those numbers for some time).

³⁰⁹ See, e.g., Letter from Carolee Krieger, *supra* note 301.

³¹⁰ Interview with Chris Eacock, *supra* note 5; Interview with Dennis Falaschi, *supra* note 31.

³¹¹ "Must" because of gravity: water always flows downhill. However, it is unlikely that much water is even able to move at all through the fine soil. See discussion *supra* Part II.A.

³¹² See Figure 1 at the conclusion of this Comment.

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volume of the Grassland Drainage Area since the calculations began in 1986,³¹³ or it has gone into the San Joaquin River above where the GAF, Reclamation, and FWS test the water to ensure it is not exceeding safe selenium levels.³¹⁴ Therefore, if subsurface drainage is flowing from northern Westlands into the Grassland Drainage Area, then the GAF is putting it through reuse along with its own drainage, and the numbers come out the same.³¹⁵ Alternatively, if the subsurface drainage is going directly into the San Joaquin River, it is not doing so with high enough volumes to cause selenium levels to exceed safe levels downstream.³¹⁶

Relying on the premise that drainage from Westlands North is flowing into the Grassland Drainage Area, critics argue that it is the land retirements alone that account for the GAF's drainage volume reductions.³¹⁷ Specifically, critics say that the lands retired in northern Westlands following the *Britz* and *Sumner* settlements in 2000 account for a large portion of the reduction in drainage discharges and selenium accounted for by the GAF.³¹⁸ After the *Firebaugh* decision came down in 2000, the settlements that followed required Reclamation to purchase the damaged land from complainants.³¹⁹ These lands totaled approximately 40,000 acres and were all retired by Reclamation.³²⁰

Irrespective of whether the retirement of the *Britz* and *Sumner* lands reduced the amount of subsurface drainage going into the Grassland Drainage Area, the measurements of GAF drainage do not show any significant reductions following 2000.³²¹ The decline of subsurface drainage has been steady over time, showing no large decrease attributable to any one large retirement.³²²

Claims that the bulk of the discharge reductions claimed by the GAF are actually due to the retirement of the 9700 acres of the

³¹³ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34.

³¹⁴ See *id.*

³¹⁵ GAF treats all drainage going into the Grassland Drainage Area. There is no way to differentiate the GAF's drainage water from Westlands' if it is in fact draining into the Northerly Area at all. See *id.*

³¹⁶ The GAF, Reclamation, and FWS all test the water in the San Joaquin River and tributaries downstream of where any drainage from Westlands could enter any of these waterways. If Westlands' drainage is seeping into the San Joaquin River above Mendota, it is not doing so with high enough volumes to affect these test results.

³¹⁷ See, e.g., Letter from Carolee Krieger, *supra* note 301.

³¹⁸ *Id.*

³¹⁹ See STATEMENT ON SETTLEMENT OF SUMNER PECK RANCH, INC., *supra* note 169.

³²⁰ See *id.*

³²¹ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34; see also Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

³²² See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34; Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

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Broadview Water District fail under similar reasoning. Broadview was originally part of the GAF,³²³ but it was annexed into Westlands; its lands were retired and its water rights were transferred to Westlands.³²⁴ Even while Broadview Water District was operating under water contract reductions and consequently receiving less water from the Central Valley Project from the 1990's, it was not fully taken out of production until 2004.³²⁵ Like the *Britz* and *Sumner* retirements, drainage to the Grassland Drainage Area has steadily declined through 2004 without any sudden decrease that would suggest all reductions were caused by the retirement rather than the reuse efforts of the GAF.³²⁶

Critics' final argument is that regional reuse, such as the Reuse Area, poses hazards to wildlife.³²⁷ They argue that the drainage water that is being applied to salt-tolerant crops—and even the crops themselves—will injure wildlife in ways reminiscent of Kesterson. Outside of the extensive wildlife monitoring performed by Reclamation and FWS,³²⁸ the GAF has gone to great lengths to ensure that there are no threats to wildlife.³²⁹ The fields where the bioremediation³³⁰ crops are grown are kept in pristine condition.³³¹ There is no herbage on the sides of the fields, irrigation canals or access roads that may attract wildlife.³³² While most of the irrigation canals are unlined ditches along the sides of the fields, they are all currently being converted into enclosed pipes to

³²³ See Interview with Chris Eacock, *supra* note 5.

³²⁴ See Letter from Carolee Krieger, *supra* note 301; see also Letter from Jim Metropulos, Sierra Club California, Steven L. Evans, Friends of the River, Zeke Grader, Pacific Coast Federation of Fisherman's Federal Association Inc., Jonas Minton, Planning and Conservation League, Conner Everts, Southern California Watershed Alliance, and Byron Leydecker, Friends of the River, to Jeanine Townsend, State Water Resources Control Board (Sept. 22, 2010), available at www.swrcb.ca.gov/water_issues/programs/tmdl/docs/sjr_selenium/comments092210/jim_metropulos.pdf [hereinafter Letter from J. Metropulos et al. to Jeanine Townsend].

³²⁵ Dennis Wichelus & David Cone, *A Water Transfer and Agricultural Land Retirement in a Drainage Problem Area*, 20 IRRIGATION & DRAINAGE SYSTEMS 225 (2006).

³²⁶ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34; Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35 (Water Year (WY) 2000: volume 31,342 acre-feet (AF), Selenium (Se) 4603 lbs.; WY2001: 28,235 AF, Se 4377 lbs.; WY2002: 28,358 AF, Se 3939lbs.; WY2003: 27,345 AF, Se 4032 lbs.; WY2004: 27,640 AF, Se 3860 lbs.; WY2005: 29,957 AF, Se 4305 lbs.; WY2006: 25,995 AF, Se 3563 lbs.; WY2007: 18,531 AF, Se 2554 lbs.; WY2008: 15,665 AF, Se 1735 lbs.; WY2009: 13,166 AF, Se 1264 lbs.).

³²⁷ Letter from J. Metropulos et al. to Jeanine Townsend, *supra* note 324.

³²⁸ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34.

³²⁹ See McGahan, *supra* note 27.

³³⁰ Bioremediation is the use of biological matter like plants to remove contaminants from soil and water.

³³¹ Interview with Dennis Falaschi, *supra* note 31.

³³² *Id.*

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prevent access by animals and waterfowl.³³³ The soil is tested regularly to ensure that selenium is not dangerously building up.³³⁴ The types of crops the GAF is using in the Reuse Area absorb the selenium and salts to such an extent that the land is not becoming poisonous.³³⁵ As an additional layer of safety, Reclamation and FWS regularly monitor the area to ensure there are no dangerous impacts on wildlife.³³⁶

The practices of the GAF in the Grassland Drainage Area may not result in zero contamination, but they are hardly comparable to the actions leading to Kesterson. Drainage water discharges from the Grassland Drainage Area are typically below safe levels with only occasional exceedences.³³⁷ Further, the GAF is executing a plan to ensure continued and further compliance.³³⁸ Even though allowing the GAF to continue its plans requires an extension of the TMDL compliance schedule, the benefits of permitting the GAF to complete its plans outweigh critics' concerns about the Basin Plan Amendment.

B. CONGRESS SHOULD AMEND THE SAN LUIS ACT TO RELIEVE
RECLAMATION OF DRAINAGE RESPONSIBILITY

While the GAF is setting an excellent example of water management practices necessary to farm in a challenging region, the same cannot be said for Westlands. Should it be acceptable then for the Westlands growers to continue irrigating without a drainage outlet, with full knowledge that the result will be the ruination of their lands? Even while it is Reclamation's responsibility to provide drainage to the Westside, Reclamation has indicated that the necessary drainage plan is not economically feasible.³³⁹

As long as the San Luis Act remains in force, the Ninth Circuit's order for Reclamation to provide drainage will stand.³⁴⁰ Reclamation has stated to Congress that it would like the San Luis Act amended.³⁴¹ Reclamation would like to transfer responsibility for drainage to the local

³³³ *Id.*

³³⁴ Interview with Chris Eacock, *supra* note 5.

³³⁵ Interview with Dennis Falaschi, *supra* note 31.

³³⁶ Interview with Chris Eacock, *supra* note 5.

³³⁷ See GRASSLAND BYPASS PROJECT: ANNUAL REPORT 2006–2007, *supra* note 34; see also Letter from GAF to Central Valley Regional Quality Control Board, *supra* note 35.

³³⁸ FEIS/EIR, GRASSLANDS BYPASS PROJECT, *supra* note 236.

³³⁹ Letter from Michael L. Connor, Comm'r of U.S. Bureau of Reclamation, to Dianne Feinstein, U.S. Senator 2 (Sept. 1, 2010) (on file with the author) [hereinafter Letter from M. Connor to Dianne Feinstein].

³⁴⁰ *Id.*

³⁴¹ *Id.*

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level, with Reclamation providing background support.³⁴² By itself, Reclamation cannot provide drainage to Westlands in a way that is financially feasible.³⁴³ However, if Westlands takes on the bulk of the responsibility, it may enjoy success similar to that of the GAF. As an incentive to Westlands to take on drainage responsibility, Reclamation has offered to forgive all or a portion of the amount still owed by Westlands to repay the cost of the Central Valley Project facilities.³⁴⁴ Additionally, Reclamation has offered to extend Westlands' water contracts more than twenty-five years.³⁴⁵ Westlands should follow the example of the GAF and agree to assume control of its drainage provisions in exchange for Reclamation's forgiveness of repayment owed to it for water supplied thus far.³⁴⁶

While it is logical to transfer drainage responsibility to Westlands because it is creating the drainage, even with the incentives Reclamation is offering, there is nothing forcing Westlands to accept. Like the GAF, Westlands receives power, water, and crop profits that are heavily subsidized by the federal government.³⁴⁷ Westlands is also one of the biggest users of Central Valley Project water, receiving between \$24 million and \$110 million a year in water subsidies.³⁴⁸ In light of these practices, even with Reclamation's willingness to forgive much or all of Westlands' Central Valley Project debt, Westlands has no incentive to responsibly provide drainage for its lands.³⁴⁹ Without Congress amending the San Luis Act to implement the changes Reclamation seeks,³⁵⁰ there is nothing to stop Westlands from continuing to reap

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ *Id.* This may mean a forgiveness of up to \$497 million. *See id.*

³⁴⁵ Letter from M. Connor to Dianne Feinstein, *supra* note 339.

³⁴⁶ *Id.*

³⁴⁷ *See Sharp & Walker, supra* note 256.

³⁴⁸ RENEE SHARP, ENVIRONMENTAL WORKING GROUP, CALIFORNIA WATER SUBSIDIES (2004), available at archive.ewg.org/reports/Watersubsidies/part1.php.

³⁴⁹ *See Firebaugh Canal Co. v. United States*, 203 F.3d 568, 572 (9th Cir. 2000).

³⁵⁰ Letter from M. Connor to Dianne Feinstein, *supra* note 339. This letter was also the basis for an Oct. 19, 2010 press release by the Environmental Working Group (EWG), *Throwing Good Money at Bad Land*, available at www.ewg.org/node/28694/print. Unfortunately, the EWG grossly distorted the sentiments expressed in Commissioner Connor's letter. Commissioner Connor's letter addressed Reclamation's 2007 Record of Decision accepting the In Valley/Water Needs/Land Retirement alternative of the SLDFRE. Commissioner Connor proposed an alternative to the ROD that would require a congressional amendment to the San Luis Act. Commissioner Connor's proposal relieves Reclamation from having to provide drainage to all of Westlands and puts this responsibility in the hands of the Westlands growers. Other than EWG's unrealistic proposal to retire all of Westlands' lands, Commissioner Connor's alternative is a realistic proposal that takes into consideration the competing interests of stakeholders in the region.

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windfall benefits while carrying on the status quo for as long as the water table can manage it.

Perhaps Westlands does not believe the benefits of implementing its own drainage infrastructure and taking Reclamation's debt-forgiveness offer will create the most profit. While forgiveness of millions of dollars of debt seems like a smart financial move, it would likely not yield as great a benefit as selling subsidized Central Valley Project water to a third party. Westlands could wait until its drainage-impaired lands are no longer farmable, and then sell the water irrigating those lands to urban areas thirsty for water. Additionally, in the likely event Westlands' drainage-impaired acres salt up before Reclamation implements the SLDFRE, Reclamation will likely be legally liable for the damage done to those lands.³⁵¹ However, if Reclamation's proposal is implemented, drainage control would transfer to the growers, motivating them to take responsibility for the byproduct of their agricultural activities.³⁵²

Despite the fact that Westlands is not discharging contaminated drainage water into any waterway and avoiding the scope of the Clean Water Act, its practices should not be tolerated. Farming on the Westside cannot be done sustainably without a drainage outlet; however, any drainage from the Westside is laced with salts and selenium and thus falls under the Clean Water Act.³⁵³ By farming without a drainage outlet, Westlands is avoiding the Clean Water Act's reach by sacrificing the future of much of its farmland. Further, Westlands is doing this while reaping enormous rewards from the federal government without accepting any responsibility for its wasteful actions.

The GAF is doing just the opposite. In order to create sustainable farming practices, the GAF is accepting the reality of farming on the Westside and has been working to implement a drainage plan. The GAF is also working to comply with the Clean Water Act.³⁵⁴ While the GAF's process of implementation has been slow, it is well-thought-out and has an achievable goal in sight.³⁵⁵ Plans to allow the GAF to continue its practices should be approved in order to prevent the Grassland Drainage Area from becoming another unfarmable wasteland like much of Westlands. To that end, the San Luis Act should be amended so

³⁵¹ See discussion *supra* Part III.B.

³⁵² Letter from M. Connor to Dianne Feinstein, *supra* note 339.

³⁵³ See discussion *supra* Part III.A.

³⁵⁴ Letter from Dennis Cardoza and Jim Costa, Members of Congress, to Charles R. Hoppin, Chair, Cal. State Water Res. Control Bd. (Sept. 20, 2010), available at www.swrcb.ca.gov/water_issues/programs/tmdl/docs/sjr_selenium/comments092210/dennis_cardoza.pdf.

³⁵⁵ FEIS/EIR, GRASSLANDS BYPASS PROJECT, *supra* note 236.

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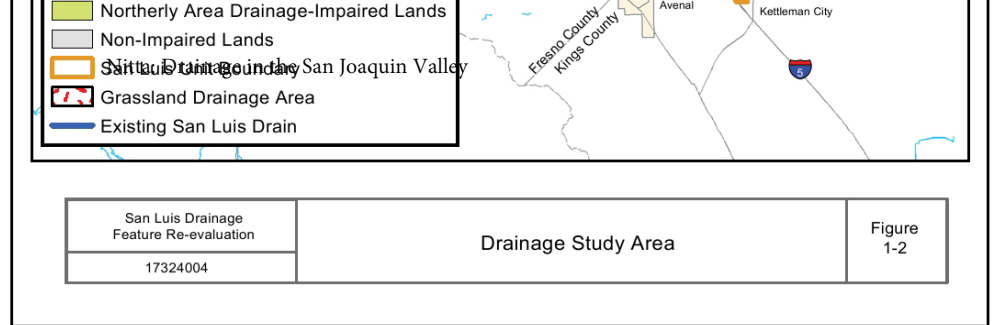
Westlands will be forced to follow the GAF's example or cease farming on its drainage-impaired lands entirely.

IV. CONCLUSION

The problems facing agriculture on the Westside of the San Joaquin Valley pose difficult challenges. On one hand, it would be unreasonable to the farmers to demand a complete end to irrigated agriculture. On the other hand, agriculture cannot ignore the interests of those who share the land and are affected downstream from its drainage discharges. Situations this complicated call for compromises. Farmers must compromise by expending great amounts of energy to eliminate dangerous toxins in their runoff and should employ sustainable irrigation practices. The GAF is currently doing this, and providing farmers, like those in Westlands, with guidance. Congress must compromise by understanding that the San Luis Act cannot fairly or feasibly be implemented as written and make necessary adjustments in order to hold those who create the drainage responsible for finding a safe outlet for its disposal or reuse. Reclamation cannot shirk all responsibility for the drainage situation on the Westside, and, while it should not have sole responsibility for drainage, it must consider that its contribution of subsidized water from the Central Valley Project has consequences. Finally, environmental interest groups have to understand that a Central Valley without agriculture is not a possibility. But agriculture can mitigate its impacts on the environment. If all the stakeholders in the western San Joaquin Valley can effectively balance their issues with those of others, perhaps the great civilization of California, built around its fertile but salt-ridden Central Valley, can escape the fate of so many desert-farming peoples of the past.

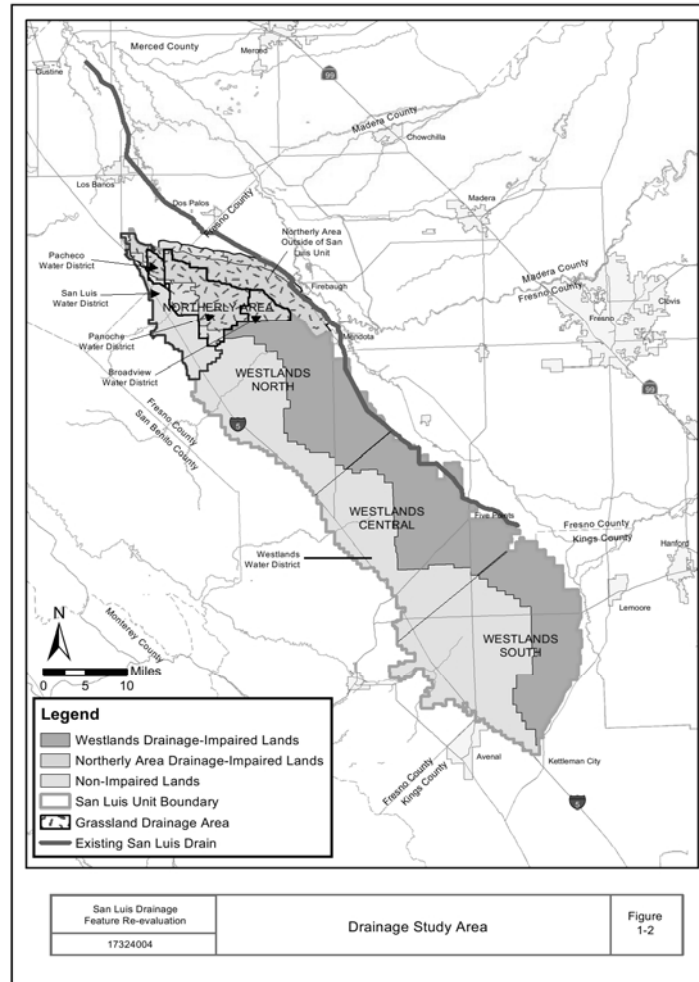
KATHLEEN NITTA *

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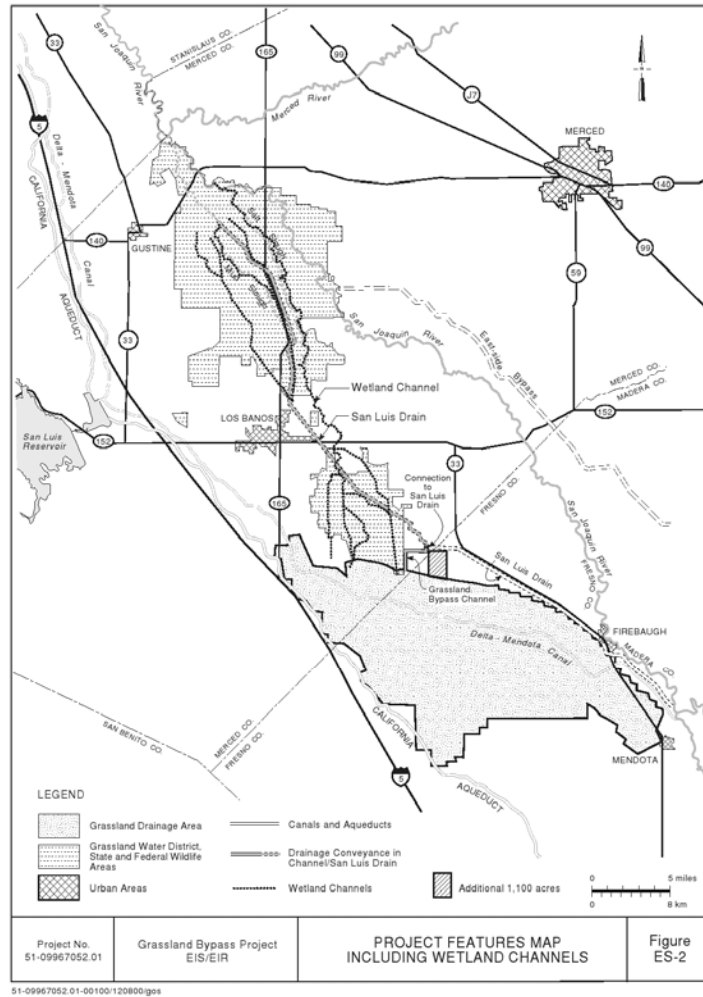


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³⁵⁶ U.S. BUREAU OF RECLAMATION, DRAFT ENVIRONMENTAL IMPACT STATEMENT, SAN LUIS DRAINAGE FEATURE RE-EVALUATION 7 (May 2005), available at www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=2251.

Figure 2: Map of Grassland Bypass Project³⁵⁷



³⁵⁷ FEIS/EIR, GRASSLANDS BYPASS PROJECT, *supra* note 236, at 5.