

The San Diego River: A Natural, Historic, and Recreational Resource

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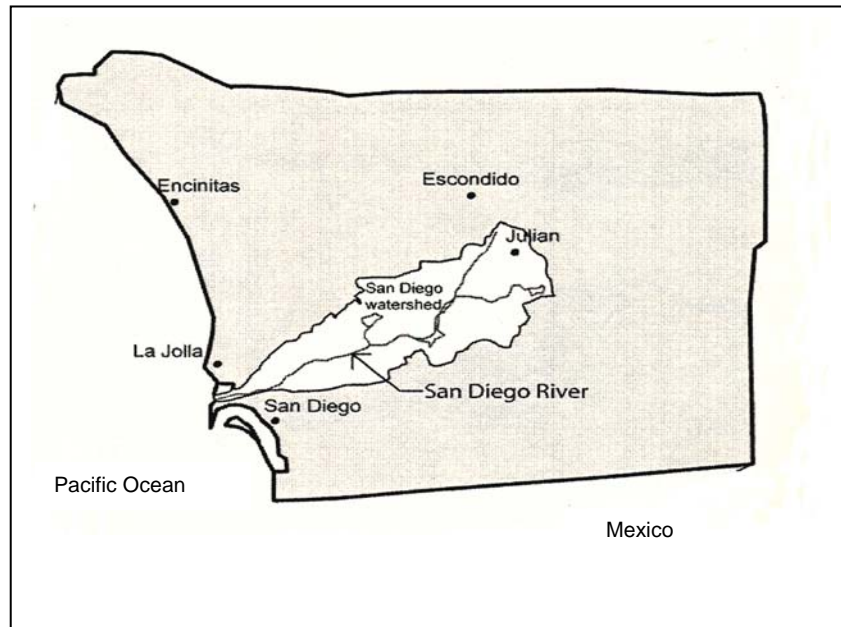
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“[M]aintaining the quality of water and the functional integrity of aquatic ecosystems is essential to the health, economic status, and long-term survival of the human race.”¹

SAN DIEGO RIVER WATERSHED



I. INTRODUCTION

The commemoration of the 50th Anniversary of the University of San Diego School of Law² provides an opportunity to reflect upon the school's beginnings and to consider the progress it has made. It also provides the opportunity to look forward. As my title suggests, the focus of this

1. WATER QUALITY IN NORTH AMERICAN RIVER SYSTEMS 3 (C. Dale Becker & Duane A. Neitzel eds., 1992).

2. The first classes at the School of Law met in April 1954 at the University High School. May 1958 saw the first graduating class, which consisted of eight men. IRIS ENGSTRAND & CLARE WHITE, THE FIRST FORTY YEARS: A HISTORY OF THE UNIVERSITY OF SAN DIEGO (1949–1989) 77 (1989).

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article is on an issue important to the future of the San Diego region: the San Diego River.

The University of San Diego sits upon a mesa with a commanding view of the lower reaches of the San Diego River. In 1945, Mother Rosalie Hill described the mesa overlooking the River on which the University of San Diego is situated:

It is called the Pueblo Lands. . . . Here in Linda Vista Heights, the Bishop [Charles Francis Buddy] has purchased a long mountain ridge, the plateau of which is more than a hundred acres. Here the Bishop plans to erect his Diocesan Seminary . . . [and] to build a college and a school for boys.³

These *pueblo lands* have stood for eons as a silent sentinal watching the River as it makes its journey from the mountains to the east to the Pacific Ocean. The reference to *pueblo lands* in Mother Hill's letter also provides an important connection to the region's history.

In 2002, the California Legislature created the San Diego River Conservancy (Conservancy).⁴ In doing so, the Legislature formally recognized the importance of the River to the public as a natural, historic, and recreational resource.⁵ Its future will impact the quality of life within the San Diego region.

3. *Id.* at 2.

4. CAL. PUB. RES. CODE § 32633 (West Supp. 2004). The San Diego River Conservancy was created for the following purposes:

(a) To acquire and manage public lands within the San Diego River Area, and to provide recreational opportunities, open space, wildlife habitat and species restoration and protection, wetland protection and restoration, and *protection and maintenance of the quality of the waters in the San Diego River for all beneficial uses*, lands for educational uses within the area, and natural floodwater conveyance.

(b) To provide for the public's enjoyment, and to enhance the recreational and educational experience on public lands in the territory in a manner consistent with the protection of land and natural resources, as well as economic resources, in the area.

Id. (emphasis added). In the future, the California Watershed Protection and Restoration Act, which was enacted to provide assistance and grants for watershed restoration and enhancement, should aid the Conservancy in carrying out its purposes. *Id.* §§ 5808–5808.2. The California Performance Review Report recommends the elimination of the San Diego River Conservancy. This recommendation will probably be considered by the California legislature in 2005. California Performance Review, *RES12 Restructure Funding and Governance for Certain Land Conservancies*, available at <http://www.report.cpr.ca.gov/cprprt/issrec/res/res12.htm> (last visited August 23, 2004).

5. *Id.* § 32631.

In order for the River to continue to perform its multifaceted resource role, its water quality must be protected, preserved, and enhanced for all beneficial uses. While the Conservancy has important water quality responsibilities, the California Regional Water Quality Control Board, San Diego Region (Regional Board), has the primary regulatory responsibility for assuring the River's water quality under the Federal Clean Water Act (CWA)⁶ and the California Porter-Cologne Water Quality Control Act.⁷ The CWA includes several programs administered by the Regional Board relevant to protecting the water quality of the River. The two most important programs considered in this article are the Storm Water Program⁸ and the Total Maximum Daily Load (TMDL) Program.⁹

The purpose of this article is to briefly consider the historical importance of the San Diego River, to examine the water quality challenges impacting the River today, and to analyze the principal regulatory programs administered by the Regional Board to meet these challenges. My premise is that the water quality of the River is essential to its functional integrity and future.

II. AN HISTORICAL OVERVIEW

The River has played an important historical role in the development of San Diego. It has been a traditional source of water supply to an arid

6. Clean Water Act, § 101, 33 U.S.C. §§ 1251–1387 (2000). The Clean Water Act is more formally known as the Federal Water Pollution Control Act. Its predecessor was the Federal Water Pollution Control Act of 1948, Pub. L. No. 80–845, ch. 758, 62 Stat. 1155 (1948). The earliest water control law was the Rivers and Harbors Appropriations Act of 1899, 30 Stat. 1121 (1899).

7. CAL. WATER CODE §§ 13000–14050 (West 1992). Section 13020 states that “[t]his division shall be known and may be cited as the Porter-Cologne Water Quality Control Act.” *Id.* § 13020. The California Performance Review Report also recommends the elimination of regional boards. This matter is also likely to be taken up by the California legislature in 2005. California Performance Review, *RES10 Consolidate State Field and Regional Offices*, available at <http://www.report.cpr.ca.gov/cprprt/issrec/res/res10.htm#5b> (last visited August 23, 2004).

8. Clean Water Act § 402(p), 33 U.S.C. § 1342(p). The municipal storm water permit applicable to the San Diego River issued pursuant to section 402(p) is the California Regional Water Quality Control Board, *Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer System (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District, Order No. 2001-01*, at 1 (Feb. 21, 2001), available at http://www.swrcb.ca.gov/rwqcb9/programs/sd_stormwater.html [hereinafter *Order No. 2001-01*]. The website contains the current MS4 permit as modified by the State Board, 2001 WL 1651932 (Cal. St. Wat. Res. Bd.).

9. Clean Water Act § 303(d), 33 U.S.C. § 1313(d). The 2002 CWA section 303(d) list, applicable to the San Diego River, is available at <http://www.swrcb.ca.gov/rwqcb9/programs/303dlist.html> (last visited Apr. 16, 2004) [hereinafter CWA 303(d) List].

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region. The indigenous people in the San Diego area have used the River as a water resource for millennia. During the Kumeyaay Period (8000 B.C.–1769 A.D.), the Kumeyaay lived along the banks of the River for at least ten thousand years.¹⁰ Village sites from this period include, among others, Cosoy and Nipaguay, located in Mission Valley, Sinyeweche in Santee, and Sinyau-Tehwir and Witlimak at the headwaters of the River. During this period, tribes lived in harmony with the River and drew sustenance from its natural bounty.¹¹

During the Spanish Period (1769–1821),¹² the Spanish began a permanent presence in the San Diego region.¹³ Led by Father Junipero Serra, the Franciscan missionaries built the first of twenty-one missions on the hillside overlooking the River and across from the present site of the University of San Diego. In 1774, the Mission San Diego de Alcalá was moved from the Presidio site overlooking the River to its current location about five miles upstream. The new site provided a reduced danger from flooding and a more reliable source of water for irrigation.¹⁴ Early efforts to manage and control the River began during this period. The Mission Dam was started in 1807, and by 1813 the friars had started work on an aqueduct to bring water from the dam to the relocated Mission and the agricultural lands in Mission Valley.¹⁵

During the Californio Period (1821–1848),¹⁶ Mexico broke away from Spanish control and started to govern the region.¹⁷ But natural events continued to dominate the lives of those who lived along the path of the

10. CAL. STATE POLYTECHNIC UNIV., POMONA, SAN DIEGO RIVER PARK CONCEPTUAL PLAN 22 (2002) (on file with author) [hereinafter SAN DIEGO RIVER PARK CONCEPTUAL PLAN].

11. *Id.*

12. *Id.* at 23.

13. The first European to visit San Diego was Juan Rodriguez Cabrillo in 1542. He was followed in 1602 by Sebastian Vizcaino who named the bay and port San Diego de Alcalá. The Spanish Period began in 1769 with the founding of the San Diego Mission on Presidio Hill. See Iris Wilson Engstrand, *A Bicentennial Guide to Significant Events in the San Diego Region*, 22 J. SAN DIEGO HIST. 1 (1976).

14. Father Serra wrote in 1774 that the Mission would be moved to its current location, which is near the Indian village of Nipaguay, because the site had more water and tillable land. Nan Taylor Papageorge, *The Role of the San Diego River in the Development of Mission Valley*, 17 J. SAN DIEGO HIST. 14, 15 (1971).

15. *Id.*

16. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 24.

17. In 1834, the missions were secularized, and their control was turned over to the civil authorities. Although some land grants were made before 1834, it was after this date that large areas were granted to ranchers and developers. The San Diego Mission was returned to church control in 1862. Papageorge, *supra* note 14, at 15–16.

River. In 1821, for example, the settlements and vineyards in Mission Valley were swept away by flooding,¹⁸ an event that would regularly repeat itself during passing years. Actual and potential flooding tended to act as a brake on development along the River.

The 1848 Treaty of Guadalupe Hidalgo¹⁹ marked the end of the Californio Period and the beginning of the American Period (1848–present). In 1850, California became a state and the city and county of San Diego were established. As the American Period progressed, so did the anthropogenic effects on the River.

To the extent that legal disputes involving the River occurred during the American Period, they are not documented in the reported California cases before 1881.²⁰ But references to the 1848 Treaty of Guadalupe Hidalgo²¹ do appear in early reported California cases. Pursuant to this treaty, the United States generally agreed to honor preexisting land titles ceded to the United States by Mexico. The Act of 1851²² created the Lands Commission, charged with validating the Mexican land grants. Most of these grants were based on sketch maps that did not meet the evidentiary standards used by the Lands Commission. As a result, most claims were not validated by the Commission. To the extent that a claim was validated, the absence of any specific pre-1848 Spanish or Mexican law, or statute delineating the nature of the water right accompanying the title to be protected by the land grant weakened the practical usefulness of the claim because access to water was essential to the productive using of the land.²³

18. *Id.* at 16.

19. Treaty of Peace, Friendship, Limits, and Settlement with the Republic of Mexico, 9 Stat. 922 (1848). Pursuant to this treaty, which ended the war and controversies between the United States and Mexico, a large territory was ceded by Mexico to the United States. Political dominion and the propriety interest in the land transferred was subject to certain provisions intended to protect private property owned by Mexicans within the territory at the time the treaty was made.

20. For the first California case involving the River see *San Diego Water Co. v. City of San Diego*, 59 Cal. 517, 517(1881) (voiding a contract to supply water to the City of San Diego as an ultra vires act).

21. Treaty of Peace, Friendship, Limits, and Settlement with the Republic of Mexico, 9 Stat. 922 (1848).

22. An Act to Ascertain and Settle the Private Land Claims in the State of California, 9 Stat. 631 (1851); see *Botiller v. Dominguez*, 130 U.S. 238, 238 (1889) (holding that no title to land in California dependent upon Spanish or Mexican land grants can be of any validity unless presented to and confirmed by the board of land commissioners within the time prescribed by Congress).

23. See generally *Feliz v. City of Los Angeles*, 58 Cal. 73, 80 (1881) (holding that government has a paramount right of water use over riparian users).

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The California courts did recognize, however, municipal water rights to the San Diego River based on the historical doctrine of “pueblo water rights,”²⁴ which includes the right to use the surface water, as well as adjacent groundwater, that runs through the former pueblo from its originating source to the ocean.

The San Diego River was at the center of a landmark pueblo water rights decision by the California Supreme Court in 1930. In *San Diego v. Cuyamaca Water Co.*,²⁵ the court applied the doctrine²⁶ to a claim by the City of San Diego as the successor of the Mexican Pueblo of San Diego. The California Supreme Court provided the historical context to its holding protecting the City’s pueblo entitlement:

That about the year 1834 there was founded, and until about the year 1850 there continued to exist upon what is now the site of The City of San Diego, a certain Mexican pueblo then designated as the Pueblo of San Diego

. . . . The City of San Diego, was incorporated on or about March 27, 1850, and thereupon became the successor and even [sic] since has been the successor of said Mexican Pueblo of San Diego

. . . [T]he San Diego River is an unnavigable natural stream of water located wholly within the county of San Diego, state of California, and takes its rise in the Cuyamaca Mountains in said county on the southerly and westerly slopes thereof, and flows in a southwesterly direction approximately fifty miles from its source until it reaches the easterly boundary of The City of San Diego, formerly the easterly boundary of said Pueblo of San Diego, from which point said river flows westerly through said The City of San Diego a distance of approximately five miles, discharging its waters into the Pacific Ocean through Mission Bay in said city and county.²⁷

This right continues to be significant today because it vests the City of San Diego with a legal priority to the River over other competing water claims.²⁸

24. The doctrine of pueblo water rights provides that any pueblo tracing its origin to a Spanish or Mexican colonization grant has a prior and paramount right to the waters of nonnavigable streams flowing through its designated area. Simply put, this water right allows a qualifying community to claim all the water needed for its growth and development regardless of other competing water user claims. JOSEPH L. SAX ET AL., *LEGAL CONTROL OF WATER RESOURCES* 311 (3d ed. 2000).

25. *City of San Diego v. Cuyamaca Water Co.*, 287 P. 475 (1930).

26. More specifically, the California Supreme Court held that San Diego had a pueblo claim to all the water of the San Diego River notwithstanding the fact that the city had not used the waters for over a century and the Cuyamaca Water Co. had invested over a million dollars to use the River for irrigation. *Id.* at 496.

27. *Id.* at 480–81.

28. See *supra* note 23 and *Feliz*, 58 Cal. at 80. See also William R. Attwater, *Symposium: Environmental Restraints on Water Law, Introduction*, 25 PAC. L.J. 901, 969 (1994). This legal priority has not been tested against conflicting environmental

The doctrine of pueblo water rights has been subject to historical and legal criticism since *Cuyamaca Water Co.* was decided.²⁹ California has continued to follow the doctrine, however. In 1975, the California Supreme Court applied it in *City of Los Angeles v. City of San Fernando*. While the court recognized the debatable historical progeny of the doctrine, it continued to rely on it principally for reasons of *stare decisis*.³⁰ Abandoning the doctrine at this late date might, in the court's view, "unjustly impair legitimate interests built up over the years in reliance on our former decisions."³¹ The link to the past was firmly forged.

Several legislative actions occurred during the American Period that would affect the River. In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act (Porter-Cologne).³² Recognizing the importance of water quality on the lives of Californians, it declared that "the quality of all the waters of the state shall be protected for use and enjoyment by the people of the state."³³ Porter-Cologne also established a statewide regulatory program to protect the waters of the state.

Under Porter-Cologne, the State Water Resources Control Board (State Board) regulates water quality in the state by establishing waste discharge policies and administering state and federal programs to control water pollution.³⁴ Nine regional boards set waste discharge requirements³⁵ for categories of discharges, issue individual permits, and establish water quality control plans (Basin Plans) for regulating water quality consistent with policies established by the State Board.³⁶

claims such as those that might be advanced under the federal Endangered Species Act.

29. See State of N.M. *ex rel.* Martinez v. City of Las Vegas, 880 P.2d 868, 876 (1994) (finding that the pueblo rights doctrine was historically invalid and refusing to follow it); see also Peter L. Reich, *The "Hispanic" Roots of Prior Appropriation in Arizona*, 27 ARIZ. ST. L.J. 649, 650 (1995) (describing other water allocation methods).

30. City of Los Angeles v. City of San Fernando, 537 P.2d 1250, 1284 (1975). This pueblo right, ascribed to Spanish and Mexican law, has been recognized by a long line of cases.

[W]e declared that by virtue of the prior line of cases the existence of a prior right of pueblos and their successors to use the waters of rivers passing through the pueblo territory as far as necessary for ordinary municipal purposes and for the use of their inhabitants was no longer an open question and had "long since become a rule of property in this state, which at this late date in the history and development of those municipalities which became the successors of such pueblos we are not permitted, under the rule of *stare decisis*, to disturb."

Id. at 1260–61, 1272–73.

31. *Id.* at 1274.

32. CAL. WATER CODE §§ 13000–14050 (West 1992).

33. *Id.* § 13000.

34. *Id.* § 13140.

35. Under Porter-Cologne, the discharge permit is referred to as "waste discharge requirements." *Id.* § 13260.

36. *Id.* §§ 13200–13247. California Water Code section 13240 requires each Regional Board to adopt a Water Quality Control Plan, which is commonly known as a Basin Plan. The San Diego Regional Water Quality Control Board adopted a Basin Plan

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Porter-Cologne was enacted in 1969, which was the same year that the industrial waste in the Cuyahoga River in Ohio caught fire.³⁷ This extraordinary fire became a national environmental alarm bell. In 1972, Congress responded to the escalating national need to address water pollution when it enacted the CWA.³⁸ Although Porter-Cologne preceded the CWA by several years, the mandates of the CWA have largely driven water quality efforts in California since 1972.

The San Diego River, both as a source of water supply and as a green ribbon of adjacent riparian habitat, has been important to our region for millennia. Its continued value is dependent on its water quality. With the passage of time and development in the San Diego watershed, the River has become increasingly degraded.³⁹ Today, much of the debate concerning the River centers on understanding the impairments to its water quality, and then using the government's regulatory authority to protect, preserve, and enhance its water quality so that present and future generations will be able to enjoy it.

III. SAN DIEGO RIVER WATERSHED CHARACTERISTICS

The water quality of the River is largely dependent on the natural characteristics of the watershed and the land uses within it. The River is the principal hydrological feature of the San Diego River watershed.⁴⁰

in 1994, as amended [hereinafter Basin Plan].

37. See ROBERT W. ADLER ET AL., *THE CLEAN WATER ACT: 20 YEARS LATER* 5, 5–6 (1993). In 1969, the Cuyahoga River in Cleveland, Ohio, coated with a slick of industrial waste, caught fire. Congress responded to this remarkable event, and to other assaults on water quality, by enacting the Clean Water Act. This event is only one of many instances when the environmental alarm bell has sounded. See, e.g., *Env'tl. Def. Fund v. EPA*, 598 F.2d 62, 66 (D.C. Cir. 1978) (suggesting that the discharge of polychlorinated biphenyls (PCBs) to the nation's waters creates a serious risk of death for aquatic organisms and disease, particularly cancer, for humans).

38. 33 U.S.C. §§ 1251–1387 (2000).

39. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION, *SUPPLEMENTAL EXECUTIVE OFFICER SUMMARY REPORT, STATUS REPORT: SAN DIEGO RIVER WATERSHED*, 23–24 (Sept. 10, 2003) (on file with author), available at <http://www.swrcb.ca.gov/rwqcb9/rb9board/sep03/item%2011%20San%20Diego%20Watershed%20ver%204.pdf> (last visited Apr. 18, 2004) [hereinafter STATUS REPORT: SAN DIEGO RIVER WATERSHED].

40. The formal designation of the San Diego River watershed is San Diego Hydrologic Unit (907.00). Throughout this article, the reader occasionally will encounter references to the San Diego watershed. The reader is alerted to the fact that the terms “San Diego River watershed” and “San Diego watershed” are used interchangeably. This convention is important to bear in mind because there are numerous watersheds other than the San Diego River watershed in San Diego.

Other important hydrological features in the watershed that impact the River are eleven significant tributaries,⁴¹ five water storage reservoirs,⁴² and several important groundwater aquifers.⁴³ Although the watershed consists of four separate hydrological areas,⁴⁴ for practical purposes it may be divided into two parts.

The dam at the El Capitan Reservoir, which is on the main stem of the River, acts as the principal physical barrier between the upper and lower parts. The upper part extends from the western edge of the reservoir through the Capitan Grande Reservation, Cleveland National Forest, and the Julian area. Land development in this part of the watershed is constrained by the Cleveland National Forest. The lower part of the watershed extends from the dam at the El Capitan Reservoir, through Lakeside, Santee, Mission Gorge, Mission Valley, and on to the mouth of the River at the Pacific Ocean.

The size of the watershed, land uses within it, and amount of precipitation are important variables affecting the fate and transport of water pollution. The River drains a watershed area of approximately 440 square miles. Rainfall in the watershed annually averages from nine to ten inches of rain near the coast to more than twenty-five inches at the Cuyamaca Reservoir. The volume of water in the River and its velocity is also affected by the dams and reservoirs that capture precipitation and impede its natural flow. The gradient of the surrounding mountains, which ranges from 6512 feet at Cuyamaca Peak to sea level, also affects the water velocity of the River.⁴⁵

41. (1) Forrester Creek, (2) Murray Creek, (3) Alvarado Creek, (4) San Vicente Creek, (5) Boulder Creek, (6) Conejos Creek, (7) Sycamore Creek, (8) Oak Creek, (9) Murphy Creek, (10) Los Coches Creek, and (11) Cedar Creek. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 32.

42. El Capitan (the El Capitan Dam was completed in 1935 and has a holding capacity of 112,800 acre-feet of water); San Vicente (the San Vicente Dam was completed in 1943 and has a holding capacity of 90,230 acre-feet of water); and Cuyamaca (the Cuyamaca Dam was completed in 1887 and has a holding capacity of 11,600 acre-feet of water). *Id.*; Lake Jennings (Lake Jennings dam was completed in 1964 and has a surface area of 85 acres), at <http://www.sdfish.com/lakes/jennings/printout.html> (last visited June 3, 2004); and Lake Murray (Lake Murray dam was completed in 1918 and has a surface area of approximately 172 acres), at <http://www.sannet.gov/water/recreation/murray.shtml> (last visited June 3, 2004) and <http://www.sdfish.com/lakes/murray/index.html> (last visited June 3, 2004).

43. Mission Valley (source for Sierra Springs), Lakeside (source for several water districts and Sparkletts), and Julian Schist (source for Julian). In addition, the City of San Diego has plans to install twelve groundwater wells in Mission Valley to augment their domestic supplies. STATUS REPORT: SAN DIEGO RIVER WATERSHED, *supra* note 39, at 4.

44. The San Diego watershed, San Diego Hydrologic Unit 907 is comprised of four hydrologic areas: Lower San Diego (907.10), San Vicente (907.20), El Capitan (907.30), and Boulder Creek (907.40). *Id.* at 3.

45. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 11–12.

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The water quality in the lower part of the watershed is affected by the fact that no surface water can pass from the dams unless an intentional or unintentional release occurs. Historically, sediment transport from the upper reaches of the watershed provided the beaches at the mouth of the River and the collection areas within the River system with a natural source of sand replenishment. The reservoir system provides flood control, water supply and recreational opportunities. But the reservoirs also act as barriers to the transport of sand and sediment to coastal areas. In general, the dams act as physical barriers to sediment transport within the River. The natural transport of sediment also has been altered by sand and gravel mining activities. The River system and its ecology has been altered by the fact that it is one of the most heavily sand-mined rivers in the nation.⁴⁶

Because the watershed drains naturally into the River, land development and use within the watershed affects both water quality and planning. The population within the San Diego watershed today is approximately 500,000 people, with the major population centers being the cities of San Diego, Santee, La Mesa, and El Cajon. The fact that the River traverses various political jurisdictions with separate land use authority complicates the coordination of comprehensive land use water policy.⁴⁷ Convincing upstream communities that they have a meaningful stake in the downstream water quality of the River is a challenge.⁴⁸

Planning is also affected by existing development patterns. Approximately 60 percent of the watershed is undeveloped, the bulk of which is in the upper eastern portion of the watershed in the Cleveland National Forest. In contrast, the lower part of the watershed is more intensely developed, and the runoff from this development directly impacts the River in many ways.⁴⁹

46. *Id.* at 30.

47. The River traverses city boundaries (San Diego and Santee) and unincorporated areas. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 11.

48. The MS4 permit, applicable to the San Diego River watershed, contains a Watershed Urban Runoff Management Program (WURMP). It is based on the principle that urban runoff does not respect political boundaries. Co-permittees are required to work together to plan for the protection of the River. At this point, coordination efforts are at a preliminary stage of development and reporting. John H. Minan, *Municipal Storm Water Permitting in California*, 40 SAN DIEGO L. REV. 245, 256 (2003).

49. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 27.

In order to meet its growing population, the San Diego region imports approximately 90 percent of its water through the San Diego County Water Authority.⁵⁰ Such imported or foreign water is a major source of the year-round flow in the lower reaches of the River through runoff from residential and commercial use, excess irrigation, and regulated and unregulated discharges. As discussed below, runoff is a major source of pollution. The reason is straightforward. Development generally increases impervious surfaces, such as roofs, roads, sidewalks and parking lots, that otherwise would be available for percolation and groundwater recharge. Because less natural filtering and absorption occurs, more pollution finds its way into the River.

Increased impervious surfaces tend to promote flooding opportunities, which affects the general ecology of the River. Flooding historically constrained development along the lower part of the River. In 1916, for example, a flood washed out Mission Valley. The construction of El Capitan Dam and the San Vicente Dam were responsive attempts to deal with the flooding problem as well as to provide water supply.⁵¹

While flooding opportunities have been reduced through engineering solutions, a new challenge has arisen with the introduction of exotic plant species. Nonnative invasive species, such as the *Arundo Donax* (Giant Reed),⁵² accumulate in mat entangling barriers during heavy rains. They form artificial dams against bridges, culverts, and other manmade obstacles, and, thus, increase the potential for flooding.

Effective flood control measures are essential to public safety, but they also increase the pressure to develop in flood prone areas. This pressure is evident today. Some structures, such as the parking structure in the Fashion Valley Mall, have been designed and constructed to withstand flooding. The leading edge of sustained land development in Mission Valley was the protective flood control channel, which began in the 1950s. The existing residential and commercial development in the Mission Valley area has been facilitated by the flood control projects that have channelized the River.

50. The Metropolitan Water District is the single most important source of water. Approximately 90 percent of the San Diego region's water supply is imported. Of this imported water, about 25 percent is furnished from the State Water Project and 65 percent comes from the Colorado River. SAN DIEGO COUNTY WATER AUTHORITY, AN OVERVIEW (2003), available at <http://www.sdcwa.org/about/sdcwa-overview-2003.pdf>.

51. Philip R. Pryde, *What Does the Future Hold for Mission Valley?*, ENV'T SOUTHWEST, Mar. 1973, 6, 6-9.

52. See National Plants Database, at http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=ARDO4 (last visited Apr. 17, 2004).

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IV. SIGNIFICANT WATER QUALITY CHALLENGES

Water quality in the River is affected by development and other anthropogenic activities along the River. Businesses and industries in the areas of Mission Gorge and Mission Valley, for example, have significantly changed the morphology of the River.⁵³ The loss of adjacent riparian habitat also has decreased the natural ability of the River to filter harmful contaminants. While the natural ability of the River to heal itself has been degraded, the assault on the River from contaminants continues.

The greatest source of pollution to the River is urban runoff.⁵⁴ In its 2001 Strategic Plan, the State Water Resources Control Board recognized the general importance of reducing the contaminants in storm water runoff:

The recent repeated closures of beaches in Southern California due to excessive bacteria levels in coastal waters has highlighted the significance of contaminated storm water in California. During a storm, or other events where water flows across large expanses of pavement, that water may pick up pollutants along the way. Water that flows down driveways and streets and into a gutter eventually makes its way into a storm drain, and then flows directly to a lake, river or the ocean. Common pollutants that are picked up along the way include motor oil, pesticides, brake dust, pet wastes, paint, and household chemicals.⁵⁵

Runoff produces a toxic brew of metals, oils, trash, fertilizers, herbicides, pesticides, and bacteria from human and animal waste. It harms the general hydrology of the River by increasing stream bank erosion, degrading benthic habitat, poisoning sediment, decreasing aquatic diversity, and limiting recreational opportunities. As more contaminants are added from diverse sources along the River, the cumulative effect on water quality intensifies as it travels through the watershed on its journey to the ocean.

In late 2003, the fires that swept through Southern California captured the nation's attention. The firestorm that raged through the San Diego area burned approximately 70 percent of the San Diego watershed. Because the principal hydrological feature of the San Diego watershed is the River, the fires produced a new threat to water quality from increased runoff.

53. STATUS REPORT: SAN DIEGO RIVER WATERSHED, *supra* note 39, at 24.

54. SAN DIEGO RIVER PARK CONCEPTUAL PLAN, *supra* note 10, at 36.

55. STATE WATER RESOURCES CONTROL BOARD & REGIONAL WATER QUALITY CONTROL BOARDS, STRATEGIC PLAN 8 (Nov. 15, 2001), *available at* http://www.swrcb.ca.gov/strategicplan/01strategic_plan.pdf (last visited Apr. 17, 2004).

Boulder Creek in April 1999



Boulder Creek on May 4, 2004, six months after October 2003 Cedar Fire



Photographs provided by David G. Gibson, San Diego Regional Water Quality Control Board staff.

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Water quality throughout the watershed, including the River, will be adversely affected both in the short-term and long-term. Runoff from fire-impacted areas will generate increased discharges of sediments, heavy metals, nutrients, and hydrocarbons. Elevated concentrations of aluminum, arsenic, barium, lead and manganese were detected by the Department of Health Services at two locations upstream of the El Capitan Reservoir shortly after the fire.⁵⁶

Increased runoff from burned areas is a natural consequence. Water-repellant soils are created when a fire breaks down the organic matter in the soils that then combine with the chemicals in the soils to produce a gas that coats the soil particles. This process results in a hydrophobic condition that reduces soil permeability. Precipitation that is not absorbed due to this hydrophobic condition, as well as from the absence of absorbing vegetation, increases runoff and promotes soil erosion and mud slides. Estimates are that the runoff potential from such *cooked soils* can be anywhere from three to ten times greater than under normal conditions.⁵⁷

Several months after this disaster, airborne ash and other particulate matter from the fires were still palpably evident on roads, sidewalks, and other surfaces throughout the watershed. Predictably, water quality in the River has also been affected. Studies from recent fires in New Mexico and Colorado⁵⁸ suggest long-term and short-term impacts on water quality. Long-term impacts include changes in macroinvertebrate communities, hydrology, and stream morphology. Short-term effects to the River include increased disposition of nutrients, turbidity, pH, and dissolved oxygen. These pollutants can lead to eutrophication and increased fish kills.⁵⁹

The impact on public drinking supplies also is a concern because the watershed includes reservoirs in the burned areas. Trihalomethanes (THM) are potentially cancerous compounds. These compounds can

56. SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD, EXECUTIVE OFFICER'S REPORT 8 (Dec. 10, 2003), available at http://www.swrcb.ca.gov/rwqcb9/eo_report/reports/12-10-03eo.pdf (last visited Apr. 17, 2004).

57. Luis Monteagudo Jr., *County Officials Pushing for More Flood Warning Stations*, SAN DIEGO UNION TRIBUNE, Dec. 29, 2003, at B1 (quoting James Bowers, Associate Chief of the Hydrologic Monitoring Program in California for the U.S. Geological Survey).

58. SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD, EXECUTIVE OFFICER'S REPORT, *supra* note 56, at 9.

59. *Id.*

form when organic carbon, which tends to be higher in burned areas, reacts with the chlorine typically used in the water disinfection process.⁶⁰

Best management practices to reduce runoff into the River are the most effective human intervention. These efforts include such practices as using fiber rolls, sandbagging, diversions, seeding erosion prone areas, and breaking up impacted hydrophobic soils to improve permeability. The success of these and other best management practices, designed to reduce runoff into the River, may ultimately be determined by the amount of rainfall within the watershed. Heavy periods of rain will increase runoff and acerbate the water quality issues.

Concrete lined flood control channels affect water quality in the River. The City of El Cajon, for example, has placed nearly all streams within its jurisdiction in concrete lined channels.⁶¹ Lined channels either eliminate or substantially reduce the pollution assimilation capacity of a natural channel. This promotes erosion by increasing the velocity of the channelized water. It also tends to increase water temperature and pH in the lined channel. Unless properly maintained, concrete flood control channels frequently become magnets for trash and other unwanted waste.

Unregulated sanitary sewer overflows also contribute to the impaired water quality of the River. The trunk of the City of San Diego's aging sewage collection system is aligned to follow the main channel of the River bed. Sanitary sewer overflows therefore have the potential for entering the River with destructive consequences. In February 2000, for example, the City of San Diego discovered a broken manhole in the Adobe Falls area. This overflow event resulted in the discharge of approximately thirty-six million gallons of raw sewage to Alvarado Creek, the San Diego River, and the Pacific Ocean. The discharge resulted in fish kills and the posting of contamination warnings from the spill site along Alvarado Creek, the River, and one mile south of the mouth of the River. Based on bacteriological sampling of the ocean waters and efforts to protect the public, the initial contamination zone was expanded to include the south end of Mission Beach and the western shore of Mission Bay.⁶²

Other spills also potentially affect the River. The Mission Valley Terminal (MVT) began operating in 1962. Petroleum is delivered to the terminal (tank farm) by pipeline from Los Angeles and is then either distributed by truck or continues by pipeline to the San Diego Harbor or the San Diego Airport. The MVT, which is located adjacent to Murphy

60. *Id.*

61. STATUS REPORT: SAN DIEGO RIVER WATERSHED, *supra* note 39, at 24.

62. SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD, EXECUTIVE OFFICER'S REPORT 9-10 (Mar. 8, 2000) (on file with author).

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Creek, overlies a groundwater system that is hydrologically connected to the River.

In 1992, gasoline discharges to the groundwater were discovered at the MVT. This discovery created two immediate concerns. One involves the possible migration of plume to the River, and the other deals with the cleanup of the groundwater contamination and its effect on the River. To address these concerns, the Regional Board ordered the dischargers (Kinder Morgan Energy Partners) to cleanup the petroleum discharge, to implement monitoring, and to install leak detection systems on all pipelines and tanks.⁶³

The migrating gasoline plume, which runs under Qualcomm Stadium, flows in the direction of the River. Small amounts of MTBE (methyl tertiary-butyl ether) have been detected on both banks of the river.⁶⁴ Yet the impact of the plume on the River is not certain at this point. While the Mission Valley Terminal 2003 Health Risk Assessment Report states that current or future water quality impacts to the River from the plume are unlikely, further monitoring, investigation and cleanup of the soil and groundwater is needed.⁶⁵ The situation also is significant, apart from its impact on the River, because the contaminated groundwater is a potential source of water supply for the City.

After the contaminated groundwater is remediated, it is discharged to the surface waters of Murphy Creek that flows into the San Diego River. This discharge, approximately forty six acre-feet per year, is subject to an NPDES permit. The MVT discharge currently violates its permit for chronic toxicity and needs to be brought into compliance.⁶⁶

63. Regional Water Quality Control Board, Investigative Order No. R9-2002-0420; *see also* CAL. HEALTH AND SAFETY CODE §§ 25270–25270.13 (West 1999) (containing California's Aboveground Petroleum Storage Act requirement that owners and operators of aboveground storage tanks in excess of 10,000 gallons file a storage statement, pay a fee, and implement measures to prevent spills).

64. In December 1997, EPA issued a Drinking Water Advisory that states concentrations of MTBE in the range of 20 to 40 ppb of water or below will probably not cause negative health effects. U.S. ENVIRONMENTAL PROTECTION AGENCY, MTBE AND UNDERGROUND STORAGE TANKS, *at* <http://www.epa.gov/swrust1/mtbe> (last visited Apr. 18, 2004).

65. *See generally* OFF-SITE AREAS—MISSION VALLEY TERMINAL, HEALTH RISK ASSESSMENT (2003) (addressing the impact of the plume on water quality) (on file with author).

66. SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD, EXECUTIVE OFFICER'S REPORT 13–15 (Mar. 10, 2004), *available at* http://www.swrcb.ca.gov/rwqcb9/eo_report/reports/3-10-04eo.pdf (last visited June 4, 2004).

V. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CWA is the principal federal statute dealing with the regulation of water quality in the United States.⁶⁷ Its goals are both ambitious and clearly stated: “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁶⁸ The CWA also states that “it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation”⁶⁹ Additional beneficial purposes, including public water supply, recreational purposes, and agricultural and industrial uses, are to be taken into consideration by regulators.⁷⁰

To meet these goals, section 301⁷¹ of the CWA prohibits the addition of a pollutant⁷² into navigable waters unless the discharge is authorized by a properly issued permit pursuant to either section 402⁷³ or section 404.⁷⁴ The overarching principle of this law is that unless authorized by a properly issued permit, the discharge of any additional pollutants is prohibited.

Depending on the program involved, the CWA is administered either by the U.S. Environmental Protection Agency (EPA) or the Army Corps of Engineers.⁷⁵ The EPA is authorized by the CWA to delegate National

67. The other dominant federal statute dealing with water quality, the Safe Drinking Water Act, directs the U.S. Environmental Protection Agency to set primary and secondary maximum levels for contaminants in public drinking water systems. Safe Drinking Water Act, 42 U.S.C. §§ 300f–300j-9 (2000).

68. Clean Water Act § 101(a), 33 U.S.C. § 1251(a) (2000).

69. Clean Water Act § 101(a)(2), 33 U.S.C. § 1251(a)(2).

70. Clean Water Act § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A).

71. Clean Water Act § 301, 33 U.S.C. § 1311.

72. See *S. Fla. Water Mgmt. Dist. v. Miccosukee Tribe of Indians*, 124 S. Ct. 1537 (2004) (holding the “discharge of a pollutant” under the Clean Water Act as including point sources that do not themselves generate the pollutant).

73. Clean Water Act § 402, 33 U.S.C. § 1342 (National Pollutant Discharge Elimination System (NPDES)).

74. Clean Water Act § 404, 33 U.S.C. § 1344 (Permits for dredge or fill material).

75. Section 404 gives the Army Corps of Engineers the responsibility for issuing permits for the discharge of dredge or fill materials into navigable waters. Clean Water Act §§ 404(a), 404(d), 33 U.S.C. §§ 1344(a), 1344(d) (2000). The legislative history to the CWA reveals this was done for two reasons. First, the Corps already administered the wetlands regulatory program under the Rivers and Harbors Act of 1899. Under this Act, the Corps originally acted to protect only navigation and navigable capacity. In 1968, the Corps expanded its permit review process to include environmental concerns related to impacts on fish and wildlife and pollution. 33 C.F.R. § 323.6 (2002). This authority under the River and Harbors Act was upheld in *Zabel v. Tabb*, 430 F.2d 199 (5th Cir. 1970). Second, the Corps wanted to preserve its regulatory authority. It did not want its extensive dredging and filling activities to be regulated by another federal agency. See JENNIFER RUFFOLO, *THE U.S. SUPREME COURT LIMITS FEDERAL REGULATION OF WETLANDS: IMPLICATIONS OF THE SWANCC DECISION* 33 (Cal. Research Bureau 02-003, 2002). Section 404 dredge or fill permits are subject to water

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Pollutant Discharge Elimination System (NPDES) permit issuing responsibilities to a state providing the state has an EPA-approved permit program that is functionally equivalent to the federal program.⁷⁶ Upon approval by the EPA, the state then becomes the primary issuer of NPDES permits. However, the state is subject to continuing oversight in its administration.⁷⁷

California has an approved program authorizing it to implement the provisions of the CWA.⁷⁸ The provisions of the federal law, as well as those contained in the California Porter-Cologne Water Quality Act, are administered by nine regional water quality control boards.⁷⁹ The California Regional Water Quality Control Board, San Diego Region, is responsible for the administration of the water quality laws affecting the River in the San Diego River watershed.⁸⁰

The dominant strategy of the federal NPDES program⁸¹ is the application of uniformly imposed effluent limits to “end-of-pipe” (point source) pollutant discharges to “waters of the United States,”⁸² which

quality review by a state under section 401 of the Clean Water Act.

76. Clean Water Act § 402(b), 33 U.S.C. § 1342(b). As part of the approval process, the state must submit to the EPA a complete description of its program that meets minimum federal requirements. 40 C.F.R. § 123.21 (2002).

77. See 40 C.F.R. § 123.63(a) (identifying the circumstances under which state permitting authority may be withdrawn).

78. See, e.g., CAL. WATER CODE § 13370(c) (West 1992):

It is in the interest of the people of the state, in order to avoid direct regulation by the federal government of persons already subject to regulation under state law pursuant to this division, to enact this chapter in order to authorize the state to implement the provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, and federal regulations and guidelines issued pursuant thereto, provided, that the state board shall request federal funding under the Federal Water Pollution Control Act for the purpose of carrying out its responsibilities under this program.

Id.; see also CAL. WATER CODE § 13399.43 (West Supp. 2004) (defining NPDES permit as a “permit issued under the national pollutant discharge elimination system program in accordance with the Clean Water Act”).

79. CAL. WATER CODE § 13200 (West 1992).

80. The San Diego Regional Water Quality Control Board’s jurisdiction extends beyond the San Diego River watershed. It “comprises all basins draining into the Pacific Ocean between the southern boundary of the Santa Ana region and the California-Mexico boundary.” *Id.* § 13200(f).

81. Clean Water Act §§ 302, 303, 33 U.S.C. §§ 1312, 1313 (2000). NPDES permits include the following standard provisions: (1) technology-based effluent limits; (2) water quality-based limits; (3) monitoring and reporting requirements; and (4) standard and special conditions.

82. The Clean Water Act NPDES permit program applies to all pollutant point source discharges into “navigable waters,” which is defined to mean “waters of the

include the San Diego River. The CWA also employs the strategy of ambient water quality standards (WQS),⁸³ which set limits based on the impact of a discharge on the receiving water. In more specific terms, WQS are locally imposed regulations or laws that consist of the following: (1) designated beneficial uses for a water body,⁸⁴ (2) water quality criteria⁸⁵ (referred to as “water quality objectives” under Porter-Cologne)⁸⁶ necessary to protect those beneficial uses, and (3) an antidegradation policy.⁸⁷

Unlike the CWA, the Porter-Cologne Act does not differentiate between *point sources* (PS)⁸⁸ and *nonpoint sources* (NPS).⁸⁹ Rather the focus is on the *discharge or the proposed discharge* to waters of the state. Any person discharging or proposing to discharge waste must secure waste discharge requirements (WDR) from the appropriate regional board.⁹⁰ The discharge must be consistent with applicable water quality standards contained in the region’s Basin Plan. For *point source* discharges, WDR and NPDES permits are essentially the same regulatory tool. Because NPS are not regulated by NPDES permits, Regional Boards may regulate such sources under WDRs because

United States, including territorial seas.” Clean Water Act § 502(7), 33 U.S.C. § 1362(7). Clean Water Act jurisdiction is based on the authority of Congress under the Commerce Clause, U.S. CONST. art. I, § 8, cl. 3. The precise limits of the Commerce Clause as it pertains to the CWA has not been answered by the Supreme Court, although it has given guidance outside the CWA in *United States v. Morrison*, 529 U.S. 598 (2000), and *United States v. Lopez*, 514 U.S. 549 (1995). In *Solid Waste Agency of N. Cook County (SWANCC) v. U.S. Army Corps of Eng’rs*, 531 U.S. 159 (2001), the Supreme Court refused to address the constitutional limits of the Commerce Clause, holding instead that Congress, as a matter of statutory construction, did not intend the CWA to extend to isolated wetlands that provide habitat for migratory birds or endangered species. In *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985), the Supreme Court held that the CWA, also as a matter of statutory construction, applies to wetlands adjacent to navigable waters. *Id.* at 138. The Court reasoned that Congress evidenced its intent to regulate some waters that would not be deemed “navigable” under the classical understanding of the term. *Id.*

83. Section 402(a)(2) provides that “[t]he Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) [§ 402(a)(1)].” Paragraph (1) requires compliance with provisions of § 301, which contain the WQS requirements. Section 301 directs, among other things, achievement of “any more stringent limitation, including those necessary to meet water quality standards” established by state law. Clean Water Act § 301(b)(1)(c), 33 U.S.C. § 1311(b)(1)(C).

84. Clean Water Act § 303(c), 33 U.S.C. § 1313(c).

85. 40 C.F.R. § 131.3(b) (2003).

86. CAL. WATER CODE § 13241 (West 1992). “Each regional board shall establish such water quality objectives in water quality control plans [basin plans] as in its judgment will ensure the reasonable protection of beneficial uses.” *Id.*

87. 40 C.F.R. § 131.12 (2003).

88. CLEAN WATER ACT § 502(14), 33 U.S.C. § 1362(14).

89. Any discharge not fitting within the definition of PS is treated as an NPS. WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW 303 (2d ed. 1994).

90. CAL. WATER CODE § 13260.

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Porter-Cologne does not exempt NPS from regulation.

A. Beneficial Uses

Water quality is directly linked to the beneficial uses that the water is expected to serve. The beneficial uses for the San Diego River and its tributaries are identified in the Water Quality Control Plan for the San Diego Region (Basin Plan).⁹¹ The Basin Plan identifies the following general beneficial uses for the various inland surface waters or coastal waters in the San Diego watershed: municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), contact and noncontact recreation (REC1 and REC2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), and rare, threatened, or endangered species (RARE). The beneficial uses for the mouth of the River include REC1, REC2, commercial and sport fishing (COMM), estuarine habitat (EST), WILD, RARE, marine habitat (MAR), shellfish harvesting (SHELL), and migration of aquatic organisms (MIGR).⁹²

To the extent that a tributary to a river in California is not listed as having a separate beneficial use,⁹³ the “tributary rule” may apply to assign a beneficial use to the undesignated tributary.⁹⁴ This rule, which applies to tributaries of the San Diego River by virtue of its adoption in the San Diego Basin Plan, provides that all water bodies have the same designated beneficial uses as the downstream water to which they are a tributary. A recent administrative decision by the State Board held that actual beneficial uses of the tributary control, as opposed to those constructively imposed by the tributary rule. In *City of Vacaville v. State*

91. *Id.* § 13240.

92. The Basin Plan for the San Diego River, Table 2-2, identifies the beneficial uses for the River and its major tributaries. Not all the general beneficial use designations apply uniformly to water bodies throughout the watershed. Thus, to determine the beneficial uses for any particular water body, the Basin Plan must be consulted. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION, WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO BASIN (9), available at <http://www.swrcb.ca.gov/rwqcb9/programs/basinplan.html> (last visited Apr. 18, 2004).

93. *Id.* The Basin Plan provides the following explanation of the tributary rule: “Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.” *Id.* at 2-12. Ruffin Canyon Creek, El Cajon Valley Creek, El Monte Creek, Flinn Springs Creek, and Littlestone Creek are not listed as having separate beneficial uses, and, thus, would be subject to the tributary rule.

94. *Id.* at 2-33–37. Footnote 2 provides that “[b]eneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.”

Water Resources Control Board,⁹⁵ the State Board sensibly rejected the application of the tributary rule when the implied beneficial uses did not factually exist.

Also at issue before the State Board in *Vacaville* was the appropriate procedural method to correct the improper designation. The State Board directed the Central Valley Regional Board to initiate a Basin Plan amendment to make the correction. Because Basin Plan amendments are lengthy and costly processes, the City of Vacaville argued that the correction could be made during the permit issuing proceeding. This argument was rejected by the State Board.⁹⁶ In late 2003, the State Board's administrative decision in *Vacaville* was pending judicial review in the Contra Costa County Superior Court.⁹⁷

Vacaville's position is problematic for at least two reasons. First, the tributary rule is normally part of the Basin Plan, and thus, if it is to be changed, amending the Basin Plan is the proper process for changing it. Second, the beneficial uses identified in the Basin Plan have broad binding consequences outside the particular permit in issue. Citizens who may not be interested in the particular permit may have a stake in the general beneficial use designation. Thus, the Basin Plan amendment process is likely to promote greater public participation, which is more desirable, given the significance of beneficial use designations, than attempting to make the correction through the permit issuing process.

B. Water Quality Monitoring and Assessment

Identifying the beneficial uses to be protected is an essential part of the process in protecting water quality in the River. But it is only one step in the pollution control process. Water quality objectives,⁹⁸ typically stated in numeric or narrative terms, are then established to provide a measurable basis for protecting the beneficial uses. When a

95. *City of Vacaville v. State Water Res. Control Bd.*, 2002 WL 31519379 (Cal. St. Wat. Res. Bd.). The State Board order reached conclusions on thirty-two different issues, and, thus, the administrative order was lengthy.

96. Also at issue before the State Board in *Vacaville* was the appropriate procedural method to correct the improper designation. The State Board directed the Central Valley Regional Board to initiate a Basin Plan amendment to make the correction. Because Basin Plan amendments are lengthy and costly processes, the City of Vacaville argued that the correction could be made during the permit issuing proceeding. This argument was rejected by the State Board. *Id.*

97. Nicholas A. Jacobs, *California: Issues Facing the State's Rivers and Streams*, 7 W. WATER L. & POL'Y REP. 302, 303 (2003).

98. CAL. WATER CODE § 13241 (West 1992). "Each regional board shall establish such water quality objectives in water quality control plans [basin plans] as in its judgment will ensure the reasonable protection of beneficial uses." The reader should recall that "water quality criteria" is the equivalent term used in the CWA.

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beneficial use is combined with a water quality objective, the result becomes known as a water quality standard (WQS).

Self-monitoring reports are the primary mechanism⁹⁹ through which a regional board determines compliance with federal and state water quality permit requirements, including WQS.¹⁰⁰ The NPDES permit program requires permittees to monitor discharges and receiving waters that may be impacted by the discharge, and to report the results.¹⁰¹ But this requirement is narrowly tailored to determining permit compliance by direct dischargers, not to generally assessing ambient water quality.¹⁰²

Monitoring other types of regulated discharges presents a similar difficulty with respect to ambient water quality assessment. Indirect dischargers, for example, do not discharge their wastewater directly to waters of the United States. Rather, they discharge it to Publicly Owned Treatment Works (POTW)¹⁰³ for processing before the POTW discharges it.¹⁰⁴ While indirect dischargers are subject to monitoring requirements to assure compliance with pretreatment standards, this monitoring is also narrowly focused and not intended to assess general water quality.¹⁰⁵

A national monitoring program under section 319 of the CWA exists

99. On-site compliance inspections by a regional board staff may be used to verify the accuracy of self-monitoring reports. Citizen complaints may also trigger investigations and monitoring requirements.

100. See CAL. WATER CODE § 13383 (outlining monitoring requirements); see also 40 C.F.R. § 122.41(1)–(4) (2002) (detailing discharge monitoring reports).

101. 40 C.F.R. §§ 122.44(2)(i), 122.48 (2003). California Water Code § 13383 contains the California monitoring requirements to assure compliance with the CWA. CAL. WATER CODE § 13383. Padre Dam POTW conducts receiving water monitoring at a number of stations on the River pursuant to its NPDES Permit No. CA0107492. The generated data has been useful. For example, the section 303(d) listings for the River and the fecal coliform and TDS section 303(d) listings for Forrester Creek were based on Padre Dam generated data.

102. The generated data may be useful in a broader context than for simply assessing permit compliance. For example, Padre Dam POTW conducts receiving water monitoring at a number of stations on the River pursuant to its NPDES Permit No. CA0107492. The section 303(d) listings for the River and the fecal coliform and TDS section 303(d) listings for Forrester Creek were based on Padre Dam generated data.

103. Clean Water Act § 212, 33 U.S.C. § 1292 (2000). Section 212 refers to “treatment works.” However, 40 C.F.R. § 125.58(u) defines a POTW as “a treatment works, as defined in section 212(2) of the Clean Water Act, which is owned by a State, municipality, or intermunicipal or interstate agency.” 40 C.F.R. § 125.58(u) (2003). The definition of treatment works excludes privately and federally owned treatment works.

104. 40 C.F.R. § 403.3(g).

105. 40 C.F.R. § 403.12(b).

for evaluating nonpoint source (NPS) pollution.¹⁰⁶ This program provides financial incentives to states to identify, plan, and implement strategies to control NPS pollution. States without an EPA-approved NPS program are not eligible for financial or technical assistance in controlling NPS pollution. But the lack of an enforceable implementation mechanism, other than the withdrawal of federal financial support, is a shortcoming of this program. In addition, section 319 programs typically rely on nonregulatory approaches, such as voluntary efforts, incentives, education and training.¹⁰⁷

Porter-Cologne contains some important provisions on monitoring. Under section 13267,¹⁰⁸ a regional board may require “any person who has discharged, discharges, or who is suspected” of the same to furnish technical or monitoring program reports under penalty of perjury. This requirement clearly applies to persons subject to WDR, but the ability to impose the requirement on persons “suspected” of a discharge goes beyond the federal requirement that a discharge occur.¹⁰⁹ Under section 13225, a regional board may require state or local agencies to investigate and report on water quality issues and submit analyses.¹¹⁰ Notwithstanding the fact that these sections may be used as the basis for monitoring, they also are not intended to provide a comprehensive and systematic method of monitoring.

The Regional Board has used several other strategies or techniques¹¹¹ designed to monitor and assess water quality. Perhaps the most

106. Clean Water Act § 319(a), 33 U.S.C. § 1329 (nonpoint source management program). These reports as well as general background information are available at <http://epa.gov/owow/nps> (last visited Apr. 17, 2004).

107. JENNIFER RUFFOLO, TMDLS: THE REVOLUTION IN WATER QUALITY REGULATION 5 (Cal. Research Bureau 99-005, 1999), available at <http://www.library.ca.gov/crb/99/05/99005.pdf> (last visited Apr. 18, 2004).

108. See CAL. WATER CODE § 13267 (West 1992) (addressing investigations and inspections). In 2001–2002, the Regional Board required the City of San Diego to investigate the sources of pathogenic impairments at the mouth of the River. The City performed the necessary monitoring and source assessments. Pathogen loading was reduced when the City started enforcing an ordinance requiring pet owners to clean up after their pets. Monitoring data showed that bacterial concentrations met REC-1 Basin Plan objectives for swimming at Dog Beach. Consequently, Dog Beach, which is at the mouth of the River, may be removed from the 303(d) list providing that sustained compliance exists. Such action would require satisfying the delisting requirements of federal law. STATUS REPORT: SAN DIEGO RIVER WATERSHED, *supra* note 39, at 8.

109. CAL. WATER CODE § 13383(a) (West Supp. 2004) (implementing the monitoring requirements of the CWA, which apply to “any person who discharges, or proposes to discharge, to navigable waters”).

110. *Id.* § 13225(c). Required reports are subject to the following limitation: “provided that the burden, including costs, of such reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom.”

111. For example, civil and criminal enforcement actions against dischargers may trigger additional monitoring requirements.

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promising source of monitoring data that may affect the general water quality in the River is the Receiving Waters Monitoring and Reporting Program, which is part of the MS4 storm water permit applicable to the River.¹¹² Among other things, its purpose is to assess the chemical, physical, and biological impacts to receiving waters from urban runoff, and to assess the overall health and evaluate long-term trends in receiving water quality.¹¹³ The co-permittees are responsible to the Regional Board for complying with this requirement.

In addition, other programs contribute monitoring information relevant to the health of the River, including the Surface Water Ambient Monitoring Program (SWAMP),¹¹⁴ the Ambient Bioassessment Program,¹¹⁵ and the Toxic Substances Monitoring Program.¹¹⁶ However, the absence of adequate funding to regularly support these programs weakens the ability of the Regional Board to provide a comprehensive and systematic monitoring effort to assess the water quality of the River.

112. *Order No. 2001-01*, *supra* note 8, at 48 & Attachment B.

113. *Id.* at Attachment B.

114. SWAMP is a statewide monitoring effort administered by the State Board and implemented by the nine Regional Boards. It is designed to assess the conditions of surface water quality throughout the state. The assessment includes sampling of macroinvertebrate populations, general water chemistry, and water and sediment toxicity. See <http://www.swrcb.ca.gov/swamp> (last visited Apr. 18, 2004). In the San Diego region, the San Diego River has been selected for SWAMP monitoring starting in mid-2004. Plans call for four sample events (June 2004, October 2004, February 2005, and April 2005) at approximately seven to eight stations in the San Diego watershed, including the San Diego River, Alvarado Creek, Boulder Creek, Cedar Creek, Chocolate Creek, Forester Creek and San Vicente Creek. E-mail from David Gibson to Brian Kelly (Jan. 2, 2004) (on file with author) [hereinafter Gibson Report].

115. This program, which began in 1997, has the following objectives: assessment of the general health of the rivers in the San Diego region, development of a diagnostic tool (Index of Biotic Integrity) for future assessment, and establishment of baseline data for biological criteria for future use. The monitoring occurred during the period 1998–2001. In general terms, the report concludes that the upper watershed of the River had a high degree of biological and physical integrity, whereas the lower watershed exhibited degraded biological and physical characteristics. Program reports are available at <http://www.swrcb.ca.gov/rwqcb9/programs/bioassessment.html> (last visited Apr. 17, 2004).

116. The Toxic Substances Monitoring Program was initiated in 1976 by the State Board to provide a uniform statewide approach to the detection and evaluation of toxic substances in fresh and estuarine waters by analyzing tissue samples from aquatic organisms. The California Department of Fish and Game carries out this Program by collecting and analyzing fish and other aquatic organisms from selected sampling stations. The requesting agency, usually a regional board, will specify the type of analysis for each sample. Several sites within the San Diego River watershed have been sampled in the past. Budget constraints precluded sampling in the fiscal year 2003–2004. Information from this long running program is available at <http://www.swrcb.ca.gov/programs/smw/index.html> (last visited Apr. 18, 2004).

While the Regional Board occupies a central role in monitoring and coordinating monitoring efforts, greater funding to support its efforts is needed. Other state¹¹⁷ and local government agencies¹¹⁸ assist in generating useful monitoring data.¹¹⁹ Volunteer monitoring programs¹²⁰ and support from academic and other research institutions with interests in water quality also contribute to monitoring and analysis.

The point may be simply stated: WQS establish enforceable standards of performance, but they do not necessarily translate into improved water quality. Only a comprehensive and systematic approach to monitoring and assessment can determine the actual health of the River. It is also essential to establishing the baseline for determining whether actual progress is being made in protecting it as a resource. At present, the closest program to satisfying this need is the Receiving Waters Monitoring and Reporting Program, which is a component of the San Diego MS4 permit. Thus, a closer examination of the storm water program is warranted.

C. The Storm Water Program

The Storm Water Program is apt to have the most important regulatory impact on water quality in the River because it imposes enforceable substantive requirements that go beyond monitoring. As indicated below, the municipal storm water permit applicable to the River is under judicial attack. This section examines this attack as well as the general structure of the Storm Water Program.

In 1987, Congress added the Storm Water Program to the CWA as section 402(p).¹²¹ The general theory of the addition was straightforward. Because many sources of storm water are discharged to receiving waters through discrete conveyance systems or separate storm sewers, Congress treated the discharge of the waste in storm water runoff as falling within the ambit of the NPDES Program applicable to point sources.

117. See Western Environmental Monitoring and Assessment Program, implemented by the U.S. EPA through the California Department of Fish and Game, at <http://www.epa.gov/emap>; see also Gibson Report, *supra* note 114 (discussing same).

118. See http://www.projectcleanwater.org/html/ws_san_diego_river_plan.html (last visited on Apr. 18, 2004).

119. The California Department of Transportation (CalTrans) has contracted with a private company to perform a study with automatic samplers along freeways, highways, park-and-ride lots, and rest stop areas. Sampling includes the measurement of usual parameters, such as TSS, DO, and pH, as well as herbicides, total metals, and dissolved metals. Roberta Baxter, *Monitoring Manual, STORMWATER, J. FOR SURFACE WATER QUALITY PROFS.*, available at http://www.forester.net/sw_0301_monitoring.html (last visited Apr. 18, 2004).

120. The San Diego Stream Team (SDST) samples approximately six sites in the San Diego watershed on a biannual basis. Sampling data is available at <http://www.sdstreamteam.org/biodata.htm> (last visited Apr. 18, 2004).

121. Clean Water Act § 402(p), 33 U.S.C. § 1342 (2000).

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The statutory structure is comprehensive, but much of the implementing regulatory detail is left to the EPA. Section 402(p) identifies five categories of discharge for which permits could be required prior to October 1, 1994: (1) activities regulated prior to 1987, (2) industrial discharges,¹²² (3) large municipal separate storm sewer systems (MS4s),¹²³ (4) medium-sized MS4s, and (5) those discharges determined to violate WQS or to be a contributor of significant pollutants.¹²⁴

The EPA's implementing regulations were divided into Phase I¹²⁵ and Phase II.¹²⁶ This two-phased approach was designed to allow regulators to focus their attention on the more serious storm water problems first. While implementing discretion was granted, section 402(p) established different substantive permit requirements for industrial dischargers¹²⁷ and for municipal dischargers.¹²⁸

Industrial storm water dischargers¹²⁹ are required to secure an NPDES permit. This permit requires the discharger to comply with the technology-based requirements of section 301(b)(2)¹³⁰ and also with the

122. Construction activities, such as clearing, grading, and excavation, are included within the industrial storm water category. Construction sites that disturb more than one acre are included. 40 C.F.R. § 122.26(b)(15) (2003). Sites between one and five acres may be entitled to a waiver. *Id.* § 122.26(b)(15)(i)(A).

123. *Id.* § 122.26(b)(4). The definition of MS4 is not limited to municipally owned storm sewer systems. An MS4 is defined as a "conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains)" owned or operated by a state, city, town, or other public body having jurisdiction over the disposal of storm water. *Id.* §§ 122.26(b)(8), 122.26(b)(8)(i).

124. Clean Water Act § 402(p)(2)(E), 33 U.S.C. § 1342(p)(2)(E).

125. Clean Water Act §§ 402(p)(1), 402(p)(2), 33 U.S.C. §§ 1342(p)(1), 1342(p)(2). The five categories identified in section (p)(2) are included in the Phase I EPA regulations, which became effective in 1990. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990 (Nov. 16, 1990) (codified at 40 C.F.R. § 122).

126. Anything not covered in one of the five categories identified in §§ 402(p)(1) & (p)(2) was included in Phase II. The Phase II regulations became effective on February 7, 2000. National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722 (Dec. 8, 1999) (codified at 40 C.F.R. § 122).

127. Clean Water Act § 402(p)(3)(A), 33 U.S.C. § 1342(p)(3)(A); *see also* 40 C.F.R. § 122.26(b)(14) (identifying industrial activities subject to regulation).

128. Clean Water Act § 402(p)(3)(B), 33 U.S.C. § 1342(p)(3)(B).

129. Discharges from any conveyance used for collecting and conveying storm water that is directly related to manufacturing, processing, or from raw material storage areas at an industrial plant in various identified categories is subject to an industrial permit. 40 C.F.R. § 122.26(b)(14)(i)–(xi).

130. *See* Clean Water Act § 301(b)(2), 33 U.S.C. § 1311(b)(2) (requiring best

WQS imposed by section 301(b)(1)(C). In the San Diego watershed, no industrial facilities have individually issued industrial storm water permits, but slightly more than one hundred industrial facilities are regulated by a statewide general storm water permit.¹³¹

In contrast to industrial dischargers, the NPDES permits for discharges from municipal separate storm sewer systems (MS4s)¹³² are subject to a different set of substantive requirements:

Permits for discharges from municipal storm sewers—

- (i) may be issued on a system- or jurisdiction-wide basis;¹³³
- (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable [MEP],¹³⁴ including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.¹³⁵

The proper statutory construction of the substantive requirements applicable to MS4 regulation has been subject to an onslaught of administrative and judicial challenges.¹³⁶ One issue that has not been

available/best conventional technology).

131. STATUS REPORT: SAN DIEGO RIVER WATERSHED, *supra* note 39, at 16–19. Industrial facilities covered by the Statewide General Industrial Storm Water Permit are regulated by State Board Order No. 97-03 DWQ. General permits allow similarly situated permittees to be governed by a common permit. *See* 40 C.F.R. § 122.28(a)(2)(i) (authorizing general permits for storm water). Certain construction activities are also subject to regulation. In general, the San Diego watershed is one of the least active construction watersheds in the San Diego region due to the *built out* nature of the lower watershed. Those construction activities within the watershed that are regulated are governed by the Statewide General Construction Storm Water Permit, State Board Order 99-08-DWQ. Information on the permit is available at <http://www.swrcb.ca.gov/stormwtr/construction.html> (last visited on Apr. 18, 2004).

132. Storm sewer systems may be *separate* or *combined*. An MS4 includes any conveyance or system of conveyances owned or operated by a state or local government that is designed or used for collecting and conveying storm water. A *combined* system is connected to the sanitary sewer system. *Combined* systems are subject to normal NPDES permit requirements and therefore are excluded from regulation under Clean Water Act § 402(p)(3)(B). 40 C.F.R. § 122.26(a)(7).

133. Issuing permits on a system-wide basis allows municipal entities and other political subdivisions responsible for different parts of a single MS4 system to be co-permittees on a single permit. Co-permittees are only responsible for complying with the permit terms applicable to that part of the MS4 that they are deemed operators. 40 C.F.R. § 122.26(a)(3)(ii). This approach is advantageous to co-permittees because it facilitates coordination and consolidation of MS4 activities and spreads the burden for monitoring, analysis, and development and implementation amongst them.

134. Hereinafter, the acronym MEP will be used in place of the term “maximum extent practicable.”

135. Clean Water Act § 402(p)(3)(B), 33 U.S.C. § 1342(p)(3)(B).

136. *See, e.g.,* Defenders of Wildlife v. Browner, 191 F.3d 1159 (9th Cir. 1999) (holding that MS4 permits are not required to comply with state WQS, but the EPA has

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judicially resolved at the appellate level is whether Phase I MS4 permits may legally prohibit discharges that violate WQS. This issue is pending, however, in *Building Industry Ass'n (BIA) v. California State Water Resources Control Board*.¹³⁷ Regardless of the outcome in the appellate court, there is likely to be a petition for review by the California Supreme Court.

In the BIA case, California argues that the statutory language of section 402(p)(3)(B)(iii), excerpted above, gives it the discretion to impose stricter controls than MEP. It argues that the statutory language "such other provisions as the Administrator or State determines appropriate for the control of such pollutants" authorizes it to prohibit discharges that exceed WQS.¹³⁸

At the core of its argument, the BIA contends that the statute draws a distinction between when WQS are an appropriate reference point in storm water permitting and when they are not. Industrial storm water permits are expressly subject to WQS, MS4 permits are not.¹³⁹ It argues that MS4 permits are subject to a different statutory standard: reduction of pollutants "to the maximum extent practicable (MEP)."¹⁴⁰ Discharges that exceed WQS are legally allowed, and, thus, may not be prohibited so long as the permittee meets the MEP standard. Any regulation

the discretion to impose such a requirement); *City of Abilene v. EPA*, 325 F.3d 657 (5th Cir. 2003) (rejecting the claim that the storm water permit violated the 10th Amendment to the U.S. Constitution); *Env'tl. Def. Cent., Inc. v. EPA*, 319 F.3d 398 (9th Cir. 2003) (affirming the Phase II regulations against statutory, administrative, and constitutional challenges, including those based on the 1st and 10th Amendments; because the case was remanded to correct procedural deficiencies, the principal effect of the 9th Circuit's decision will be to delay the general permitting scheme for discharges of storm water for small MS4s and to require them to go through a more complicated permitting process); see also John H. Minan, *Municipal Storm Water Permitting in California*, 40 SAN DIEGO L. REV. 245, 246-47 (2003) (listing various administrative challenges).

137. *Bldg. Indus. Ass'n v. Cal. State Water Res. Control Bd.*, 4th App. Dist. Civil No. D042385 (2003) (reviewing the San Diego County Superior Court, Dec. No. GIC780263, upheld the MS4 permit in early 2003).

138. The permit prohibition has been interpreted to trigger an *iterative* process when a discharge violates WQS. This process requires co-permittees to continually review and improve controls, known as best management practices, and work toward compliance. Thus, strict compliance is not required. *Bldg. Indus. Ass'n of San Diego County & W. States Petroleum Ass'n*, SWRCB Order 2001-15 (Nov. 15, 2001), 2001 WL 1651932 (Cal. St. Wat. Res. Bd.).

139. The irony of the BIA being the champion of this position should not be lost. The building industry's construction activities are subject to the industrial storm water permits, and thus WQS requirements. See 40 C.F.R. § 122.26(b)(14)(x) (2003).

140. *Bldg. Indus. Ass'n of San Diego County & W. States Petroleum Ass'n*, SWRCB Order 2001-15 (Nov. 15, 2001), *supra* note 138, at 2.

beyond that limit is not “practicable.” The BIA also argues that the “such other provisions” language of section 402(p), which is relied upon by California as its source of authority, is limited by the MEP standard.¹⁴¹ In short, the plain meaning of the statute dictates that MEP is the sole standard.

The language actually used by the legislature is always the polestar to statutory construction. To the extent that the language is clear and admits no ambiguity, no construction or interpretation is needed. The application of this principle to resolve the statutory disagreement is unavailing in this dispute because the precise relationship between MEP and the authority vested in the “such other provisions” language is subject to varying interpretations. The opportunity for disagreement is ripe because the contours of MEP were left for the EPA to work out. The Phase II storm water regulations reveal that Congress intended to allow the permitting authorities and the regulated MS4’s maximum flexibility in developing and implementing their storm water programs. The EPA has attempted to reduce the uncertainty surrounding the meaning of term by identifying various factors relevant to determining MEP.¹⁴²

On the one hand, one may argue that MEP standard grammatically controls or limits everything following the word “including” in section 402(p)(3)(B)(iii).¹⁴³ On the other hand, the “such other provisions” language is grammatically set apart by punctuation and is dissimilar from “management practices” and “methods.”¹⁴⁴ Thus, a contrary interpretation is also possible.

The result is a grammarian’s puzzle. The first step in the solution is recognition that the plain meaning of the statute may not be clear. Thus, it is necessary to go beyond textual plain meaning arguments. When this is done, California’s claim becomes more convincing for several reasons.

First, allowing WQS to be imposed independent of MEP is generally consistent with the statutory provisions recognizing the sovereign authority of the states. The CWA recognizes that states have the general

141. *Id.*

142. *See* National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722, 68,754 (Dec. 8, 1999) (outlining Phase II storm water rules).

143. *See* Clean Water Act § 402(p)(3)(B)(iii), 33 U.S.C. § 1342(p)(3)(B)(iii) (2000) (stating that permits for discharges from municipal sewers “shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants”).

144. *Id.*

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regulatory authority to impose stricter conditions than provided by federal law.¹⁴⁵ The view that states lack this authority would diminish the role of the states on matters of traditional local concern, which is a dubious result in light of this recognition of authority.

Second, allowing states to Prohibit MS4 discharges that violate WQS based on the “such other provisions” language of section 402(p)(3)(B)(iii)¹⁴⁶ is consistent with the Ninth Circuit decision in *Defenders of Wildlife v. Browner*.¹⁴⁷ This decision recognizes the ability of the states to impose stricter controls based on the express language of the statute.¹⁴⁸ While one might argue that this part of the decision is dicta, it was not. The intervening municipalities in the *Defenders of Wildlife* sought to overturn the MS4 permit based on the claim that the EPA, which was the permit issuing authority, could not require strict compliance with WQS “through numerical limits or otherwise.”¹⁴⁹ The Ninth Circuit rejected this argument recognizing the discretionary authority to impose stricter controls.¹⁵⁰

Third, the general structure of section 402(p) supports the view that WQS may be imposed independent of MEP considerations. Congress expressly directed that, prior to 1994, storm water permits were not required *except* to the extent that the storm water discharge contributed to a violation of a WQS.¹⁵¹ To the extent that any discharge did contribute to a WQS violation prior to 1994, a permit was required. In such cases, the standards applicable to all NPDES permits arguably apply, namely those contained in section 301(b)(2) (technology-based) and section 301(b)(1)(C) (WQS). The argument that MEP is the sole touchstone requires one to accept the proposition that Congress intended WQS to be relevant to pre-1994 MS4 discharges, but that they not be considered by the states or EPA for post-1994 MS4 discharges. There is no obvious policy justification for such a result.

Fourth, the declared goals and policies of the CWA support

145. Clean Water Act § 510, 33 U.S.C. § 1370 (authorizing states to impose stricter standards).

146. Clean Water Act § 402(p)(3)(B)(iii), 33 U.S.C. § 1342(p)(3)(B)(iii).

147. *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999) (holding that MS4 permits are not required to comply with state WQS, but the EPA has the discretion to impose such a requirement).

148. *Id.* at 1166.

149. *Id.*

150. *Id.* at 1165–66.

151. Clean Water Act § 402(p)(2)(E), 33 U.S.C. § 1342(p)(2)(E).

California's interpretation.¹⁵² As a matter of policy, the contrary view is not appealing. Urban runoff, much of it discharged by MS4s, is a significant source of water contamination. It is also clear that WQS are an important pollution control legal threshold designed to protect the public interest. The argument that all other NPDES permittees are subject to WQS limitations, but that MS4 permittees may not be constrained by WQS, would undercut and contradict the goals of the CWA.

Finally, the WQS prohibition is consistent with the Phase II administrative requirements. Small MS4s are required to develop, implement, and enforce a storm water management program designed to meet the MEP standard and to "satisfy the appropriate water quality requirements" of the CWA.¹⁵³ Subjecting Phase I permits to a potential WQS prohibition under state law is structurally consistent with EPA-Phase II administrative regulations.¹⁵⁴ In contrast, exempting discharges that violate WQS is inconsistent with these regulations.

The resolution of whether MS4 discharges in excess of WQS may be legally prohibited is important to the future water quality of the River. The MS4 permit applicable to storm water discharges to the River contains such a prohibition.¹⁵⁵ Consequently, discharges by MS4 co-permittees¹⁵⁶ that exceed WQS are prohibited. Order No. 2001-01 states that "[d]ischarges from MS4s which cause or contribute to exceedances of receiving water quality objectives for surface water or groundwater are prohibited"¹⁵⁷ and that "[d]ischarges from MS4s that cause or contribute to the violation of water quality standards . . . are prohibited."¹⁵⁸ Although the prohibition is stated in absolute terms, the State Board has construed the prohibition to require co-permittees to implement a review process and improved controls for the purpose of working toward achieving WQS should a violation occur.¹⁵⁹ Unless the water quality is fully protected through the application of discharge prohibitions in

152. Clean Water Act § 101, 33 U.S.C. § 1251.

153. 40 C.F.R. § 122.34(a) (2003).

154. Technically, this view does not seek to trigger Chevron deference to the EPA's determination because the Phase I and Phase II regulations are legally distinct. *See Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 844 (1984) (holding that considerable weight be given to administrative agency construction of statutory language).

155. *Order No. 2001-01, supra* note 8, at 9–10.

156. Co-permittees subject to the San Diego MS4 permit in the San Diego watershed include the cities of El Cajon, La Mesa, San Diego, Santee, and Poway, as well as the County of San Diego. *Id.* at 7.

157. *Id.* at 9.

158. *Id.* at 10.

159. Bldg. Indus. Ass'n of San Diego County & W. States Petroleum Ass'n, SWRCB Order 2001-15 (Nov. 15, 2001), *supra* note 138.

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excess of WQS, the River's role as a resource for the people of the state is threatened.

D. The Total Maximum Daily Load (TMDL) Program

The TMDL Program is another CWA program important to the future of the River. It operates as a water quality safety net based on a simple premise: The water is polluted, and should be cleaned up. The starting premise is that monitoring data supports the conclusion that the water is in fact polluted. Thus, a systematic and comprehensive system of monitoring is important to this decision and to the operational integrity of the TMDL Program.

The core of the Program is found in section 303(d).¹⁶⁰ In general terms, a TMDL is a calculation of the maximum quantity (or *load*)¹⁶¹ of a given pollutant that may be added to the *waters*, if any, from all sources¹⁶² without exceeding the applicable WQS. Section 303(d) requires states to identify the waters that are and will remain polluted after the application of technology standards,¹⁶³ to prioritize those waters, taking into account the severity of their pollution,¹⁶⁴ and to establish TMDLs for those impaired waters at levels necessary to meet applicable WQS. The TMDLs are also to account for seasonal variations and provide a margin of safety to reflect lack of certainty about discharges and water quality.¹⁶⁵

The TMDL Program has been part of the CWA since 1972. But it was

160. Clean Water Act, 33 U.S.C. § 1313(d) (2000).

161. Clean Water Act § 303(d)(1)(C) provides that “[s]uch load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.”

162. TMDLs apply to point sources; their application to nonpoint sources is controversial. In *Pronsolino v. Nastri*, 291 F.3d 1123, 1140–41 (9th Cir. 2002), the Ninth Circuit Court of Appeals ruled that Clean Water Act § 303(d) authorizes the EPA and the states to list and to establish TMDLs for waters impaired only by nonpoint sources. *Id.* at 1140–41. The court held that “the CWA is best read to include in the § 303(d)(1) listing and TMDLs requirements waters impaired only by nonpoint sources of pollution. Moreover, to the extent the statute is ambiguous—which is not very much—the substantial deference we owe the EPA’s interpretation . . . requires that we uphold the agency’s more than reasonable interpretation.” *Id.* While section 303(d) is unclear as to the application of TMDLs to NPS, the *Pronsolino* decision controls San Diego River TMDLs until the U.S. Supreme Court or Congress decides otherwise.

163. Clean Water Act § 303(d)(1)(A), 33 U.S.C. § 1313(d)(1)(A).

164. *Id.*

165. Clean Water Act § 303(d)(1)(C), 33 U.S.C. § 1313(d)(1)(C).

largely ignored by regulators and the public until the mid-1980s, when environmental groups began using the citizen suit provisions of the CWA¹⁶⁶ to sue the EPA and the states to force them to comply with TMDL Program requirements.¹⁶⁷ These suits were largely successful because the TMDL obligation was clearly stated by Congress. Thus, it is not surprising that in 2002, the EPA was under court order or consent decree to comply with the TMDL law in more than twenty states.¹⁶⁸

In California, the TMDL process is implemented by regional boards using the following procedure: (1) Preparation of the problem statement, which describes the water quality objectives not being attained and the beneficial uses being impaired; (2) Identification of numeric targets that will attain the water quality objectives and protect beneficial uses; (3) Development of a source analysis that identifies the PS and NPS and the estimated pollution load of each; (4) Determination of the TMDL (loading capacity) of the waterbody for the specific pollutant(s); (5) Development of a linkage analysis, which confirms the attainment of water quality objectives; (6) Allocation of the total loading capacity to the contributing sources (*waste load allocations* are assigned to PS, whereas *load allocations* are assigned to NPS); (7) Selection of a margin of safety to account for uncertainties in analysis; and (8) Identification of seasonal variations and critical conditions. The document containing these components is referred to as the Technical TMDL. Once completed, a plan to implement the TMDL and monitor results is then developed.¹⁶⁹

The CWA does not provide for federal implementation.¹⁷⁰ Rather, this

166. Clean Water Act § 505, 33 U.S.C. § 1365. The EPA's failure to act also may be challenged under § 706(1) of the Administrative Procedures Act (APA). 5 U.S.C. § 706(1) (2000). *But see* Hayes v. Whitman, 264 F.3d 1017, 1025 (10th Cir. 2001) (dismissing the APA claim because an adequate remedy was available under Clean Water Act § 505).

167. *See* Scott v. City of Hammond, 741 F.2d 992, 996, 998 (7th Cir. 1984) (holding that a state's failure to submit a TMDL over an extended period could be treated as a "constructive submission" of no TMDL triggering the EPA's obligation to act).

168. *See* EPA, *TMDL Litigation by State*, at <http://www.epa.gov/owow/tmdl/lawsuitl.html> (last visited Apr. 20, 2004).

169. *See generally* California Regional Water Quality Control Board, San Diego Region, Resolution No. R9-2002-0123, *Total Maximum Daily Load (TMDL) for Diazinon in the Chollas Creek Watershed, San Diego County* (Apr. 26, 2002), available at http://www.swrcb.ca.gov/rwqcb9/tmdls/tmdl_files/chollas%20creek%20diazinon (last visited Apr. 20, 2004).

170. In *Pronsolino v. Nastri*, 291 F.3d 1123, 1140 (9th Cir. 2002), the Ninth Circuit Court of Appeals found that the EPA lacked the authority to directly regulate NPS under the CWA and that implementation of "load allocations" in a TMDL is left to the state. The Eleventh Circuit recently held that a consent decree between the EPA and the Sierra Club did not require the EPA to include implementation plans in the TMDLs the EPA established for impaired waters in Georgia. *Sierra Club v. Meiburg*, 296 F.3d 1021, 1030-34 (11th Cir. 2002). The court found that the District Court had improperly

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task is assigned to the states. Section 303(e) requires each state to have “a continuing planning process” that includes “adequate implementation.”¹⁷¹ Thus, the methodology to be used in allocating and implementing the *load* or burden of the TMDL between sources is left to the states. If a state fails to fulfill its duty under the TMDL Program, the EPA is responsible for the initial generation of the lists and standards. But unless TMDLs are effectively implemented by the states, the Program may simply produce hypothetical calculations needed to meet WQS. In short, it may result in the generation of reams of data, but not the improvement of water quality.

Another aspect of implementation is problematic. In order to be effective, the TMDL must identify all the significant sources of pollution contributing to the impairment. This is no simple task. As a practical matter, this leaves ample opportunity for finger pointing that “I am not the problem, it’s somebody else.” To the extent that both point sources (PS) and nonpoint sources (NPS) contribute to the water quality impairment, fairness dictates that the load allocation formula distribute the compliance burden among the contributing sources of pollution. When all the contributing sources of pollution are PS regulated by NPDES permits, the NPDES permits may be used as the implementing mechanism to allocate the TMDL load.

A special problem exists when NPS contribute to the impairment. Using NPDES permits to implement TMDLs is not possible when NPS contribute or are the sole source of the water quality impairment because only PS are subject to NPDES permits.¹⁷² Thus, one must look to state law to resolve this dilemma. Section 13374 of Porter-Cologne provides that the term “waste discharge requirements” is the “equivalent of the term [NPDES] ‘permit’” as used in the CWA.¹⁷³ This section, which is part of chapter 5.5 of the Water Code, was enacted to allow California to administer the CWA. If read in isolation and without a broader understanding of the independent provisions of Porter-Cologne, one might mistakenly conclude that WDR may not be used to regulate NPS discharges. WDR may be used to regulate NPS under the independent

modified the consent decree to require EPA preparation of implementation plans. Such modification was not needed because the consent decree achieved its purpose, which was the establishment of TMDLs. *Id.*

171. Clean Water Act § 303(e)(3)(F), 33 U.S.C. § 1313(e)(3)(F).

172. NPDES permits for PS must be consistent with any “wasteload allocation” in the TMDL. 40 C.F.R. § 122.44(d)(1)(vii)(B) (2003).

173. CAL. WATER CODE § 13374 (West 1992).

state authority in Porter-Cologne. Section 13260(a)(1) provides that “[a]ny person discharging waste or proposing to discharge waste¹⁷⁴ within any region that could affect the quality of the waters of the state” is subject to WDRs.¹⁷⁵ “Waters of the state” is broadly defined to mean “any surface water or groundwater, including saline waters, within the boundaries of the state.”¹⁷⁶ In contrast to the CWA, there is no jurisdictional tie to “waters of the United States.” In situations involving NPS, waste discharge requirements under Porter-Cologne are available as the regulatory tool to enforce TMDLs against NPS.

Additional implementation strategies exist. As part of the regulatory process, TMDLs are incorporated into the Basin Plan. They become legally effective after review and approval by the state board,¹⁷⁷ the Office of Administrative Law, and the EPA. Once approved, implementation of the TMDL against PS and NPS may occur through the normal enforcement powers available to a Regional Board, including cease and desist orders,¹⁷⁸ cleanup and abatement orders,¹⁷⁹ and the imposition of administrative civil liability.¹⁸⁰

In addition to enforcement actions based on the Basin Plan, the MS4 permit may be used as an implementation mechanism. Ultimately, using the MS4 permit to implement the TMDL may be the most effective implementing strategy. MS4 co-permittees are uniquely situated in controlling the input and output from their storm water system by virtue of their standing as the operator of the conveyance system and controlling land use authority.

In California, the development and implementation of TMDLs is an important priority. In 2001, the TMDL Program was listed as a *key strategic project* in the State Board’s Strategic Plan.¹⁸¹ The 2002 section 303(d) list of impaired waters identifies four water segments on the River.¹⁸² The preparation and implementation of TMDLs to these

174. The term “waste” is broadly defined without reference to “point source.” *Id.* § 13050(d).

175. *Id.* § 13260(a)(1).

176. *Id.* § 13050(e).

177. *Id.* § 13245.

178. *Id.* § 13301.

179. *Id.* § 13304.

180. *Id.* §§ 13323, 13385.

181. STRATEGIC PLAN, *supra* note 55, at 19.

182. (1) San Diego River: fecal coliform (lower 6 miles); low dissolved oxygen (lower 12 miles); phosphorus (lower 12 miles); total dissolved solids (lower 12 miles). (2) Pacific Ocean Shoreline: bacteria indicator (0.37 miles). (3) Forrester Creek: fecal coliform (lower 1 mile); pH (upper 3 miles); total dissolved solids (lower 1 mile). (4) Famosa Slough: eutrophication (32 acres). San Diego Regional Quality Control Board, 2002 CWA Section 303(d) List of Water Quality Limited Segment, *available at* <http://www.swrcb.ca.gov/tmdl/docs/2002reg9303dlist.pdf> (last visited June 3, 2004).

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impaired segments has not reached the point where its actual impact on water quality can be assessed. Nevertheless, one may predict that TMDLs are apt to have an important impact on the future water quality of the River. This prediction is based on the mandates of the CWA, the priority accorded TMDLs by the State Board, and the continuing interest of environmental groups in assuring that the state and federal governments comply with the law.

While TMDLs are complex and costly to generate, they are premised on the idea that is easily grasped by the public: Polluted waters ought to be cleaned up so that their beneficial uses may be realized. This message is one that is important to the future of the San Diego River.

VI. CONCLUSION

The San Diego River has been an important community resource for millennia. In 2002, the California Legislature created the San Diego River Conservancy, which has refocused public attention on the River as a community resource. Protecting its water quality is essential to maintaining the River's multiple beneficial uses for present and future generations. This water quality task falls primarily on the regulatory shoulders of the California Water Quality Control Board, San Diego Region. While this responsibility is clearly assigned to the Regional Board, community support and cooperation is essential to successfully addressing water quality issues.

This article has traced the historical importance of the River, discussed the water quality challenges it faces, and analyzed the principal Federal Clean Water Act (CWA) programs available to meet these challenges. Understanding the San Diego watershed is critical to implementing water quality control initiatives. Improved water quality monitoring is essential to appropriate regulatory action.

The principal strategy of the CWA has been to use technological standards applicable to point sources to achieve national clean water goals. While significant results have been achieved using this strategy in the San Diego region, the water quality challenges in the San Diego watershed are driven largely by anthropogenic forces, such as urban runoff and hydromodification. The Storm Water Program and the Total Maximum Daily Load (TMDL) Program are regulatory programs available to meet these challenges.

The TMDL Program is triggered when technologically based requirements are insufficient to protect beneficial uses and identified

waters have been designated as being impaired. Although the TMDL Program has been part of the CWA since 1972, it is too early to assess its impact on improving water quality in California because it has only recently been recognized as a state priority. Several segments of the River meet the impaired water quality classification. The TMDLs for these water quality segments are at a preliminary stage of development, and, therefore, the impact of the program is not possible to assess at this time. Nevertheless, the TMDL Program promises to be an important regulatory tool in the fight to improve the degraded portions of the River.

Preventing pollution is also important. The Storm Water Program, which has an industrial and municipal component, has been part of the CWA since 1987. Unlike the TMDL Program, which is remedially designed to address waters classified as impaired for identified pollutants, the Storm Water Program is more proactive in operation. It is designed to control and prevent pollution from adversely impacting the water quality of the River. The San Diego Municipal Separate Storm Sewer System (MS4) component of the storm water program has the potential for having the greatest impact on water quality. The MS4 permit prohibition on discharges in violation of water quality standards has been controversial and is currently under judicial attack. An important unresolved issue considered in this article is the extent to which the San Diego MS4 permit legally can prohibit discharges in violation of water quality standards.

The water quality monitoring of the San Diego River indicates that the River has been impacted adversely by population growth and development in the San Diego watershed. The political will of state and local authorities will continue to be tested as this assault on water quality continues. The success, or failure, will be our legacy to the future.