The Rising Sea Level and an Anticipatory Public Trust Doctrine in California

by

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This paper will examine the public trust doctrine and its legitimacy and viability as an anticipatory response by the California courts to a rising sea level. Under the public trust doctrine, the State holds certain lands, notably tidelands and those beneath navigable waters up to the high water mark or between mean low tide and mean high tide, in trust for the public. The first section of the paper will trace the history of and rationale behind the public trust doctrine from Rome to its current application by the California courts and by the United States Supreme Court. The second section will briefly investigate the predictions by the scientific community of a rising sea level in response to global warming. The third section addresses the legitimacy of an anticipatory use of the public trust doctrine by the California courts. The fourth section will explore the normative desirability of judicial use of the doctrine in response to a rising sea level, as opposed to a more global legislative response. The study then concludes that while judicial application of the public trust doctrine may deal effectively with public interests whenever the question arises in an ad hoc dispute, it would be less effective in addressing the more polycentric and global nature of the problems posed by a rising sea level. The California Legislature and its designated agencies would be more appropriate fora for handling the public interests affected by the problem as long as they do not lose sight of the public trust interests they are charged with guarding. The courts would still be able to strike down a legislative response which substantially impaired public trust interests.

I. History of the Public Trust Doctrine

A. Ancient Rome

The Romans realized that certain resources were necessary to the livelihoods of the populace. "By the law of nature these things are common to mankind--the air, running water, the sea and consequently the shores of the sea."[1] Rivers and ports as well as the right of fishing were common to all men, and all were free to use the seashore to the highest tide as long as this use didn't interfere with use by others. Even where banks were owned privately, anyone had the right to use the banks for tying up and unloading his vessels.[2]

B. English Common Law

English common law as of the thirteenth century apparently had borrowed the Roman notion of resources "common to all" or "res communes." Bracton declared the shores of the sea "common to all" and inalienable.[3] There ensued a struggle between the Crown and Parliament as to whether the Crown could grant such lands to private parties to fill the royal coffers.[4] It was determined that the ownership of such lands resided in the Crown rather than the public but that the Sovereign's own-

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[1]The Institutes of Justinian 2.1.1.

[2]Stevens, The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Right, 14 Univ. Cal. Davis L. Rev. 195, 197 (1980)(citing Justinian 2.1.4 and R. Tyler, A Treatise on the Law of Boundaries and Fences 44 (1874).

[3]Lazarus, Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine, 71 Iowa L. Rev. 631, 635 (1986)(quoting 2 H. Bracton, On the Laws and Customs of England 39-40 (S. Thorne trans 1968)).

[4]Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 63 Mich. L. Rev. 471, 476 (1970)(citing R. Hall, Essay on the Rights of the Crown and the Privileges of the Subject in the Sea Shores of the Realm 106 and 108 (2d ed. 1875)).

ership remained subject to rights of the public to use of the lands for fishing, trading and other reasons.[5] The common law thus introduced the concept of ownership into the public trust as the Romans knew it.[6] This action on the part of the common law thus added to the rationale behind the public trust doctrine. Not only did it exist to protect the rights of the public in certain lands, but it also reflected a distrust of the Sovereign. The Crown was permitted to own the land, but it could not be trusted to use it with the public interests in mind.

B. United States

This same rationale of distrust has apparently carried over into public trust doctrine in the United States. Since the concept of ownership has remained a part of the doctrine in this country, the courts have had to struggle with efforts by state legislatures and land offices to transfer away the historic rights of the people in these lands "under the theory that navigable waters and tidelands were actually swamps susceptible of reclamation."[7] The courts have responded to these efforts by declaring that the public trust is inalienable, and that the legislature does not have the right to give away the discretion of its successors.[8] The public trust was thus seen as no more capable of conveyance than the police power itself.[9]

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[5] Id.

[6] See generally Stevens, supra note 2, at 197.

[7] Stevens, supra note 2, at 196.

[8] City of Berkeley v. Superior Court, 26 Cal. 3d 515, 522, 162 Cal. Rptr. 327, 606 P.2d 362 (1980); Mallon V. City of Long Beach, 44 Cal. 2d 199, 207, 282 P.2d 481 (1955); People v. California Fish Co., 166 Cal. 576, 593, 138 P. 79 (1913); see Stevens, supra note 2, at 196.

[9] Stevens, supra note 2, at 195-96.

In one of the most famous and frequently cited public trust cases in this country, Illinois Central Railroad Company v. Illinois, the Illinois Legislature had granted the railroad virtually the entire Chicago waterfront in fee simple, 1,000 acres of submerged lands. Four years later, the Legislature passed legislation revoking the earlier legislation. The United States Supreme Court upheld the later legislation, holding that the legislature does not have the power to convey the entire city waterfront free of trust, thus barring all future legislatures from protecting the public interest.[10] "A grant of all the lands under the navigable waters of a State has never been adjudged to be within the legislative power; and any attempted grant of the kind would be held, if not absolutely void on its face, as subject to revocation. The State can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them,...than it can abdicate its police powers in the administration of government and the preservation of the peace."[11]

"At common law, the title and dominion in lands flowed by the tide water were in the King for the benefit of the nation.... Upon the American Revolution, these rights, charged with a like trust, were vested in the original States within their respective borders, subject to the rights surrendered by the Constitution of the United States.... The new States admitted into the Union since the adoption of the Constitution have the same rights as the original States in the tide waters, and in the lands un-

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[10] National Audubon Society v. Superior Court, 33 Cal. 3d 419, 437, 189 Cal. Rptr. 346, 658 P.2d 709 (1983) (citing Illinois Central Railroad Company v. Illinois, 146 U.S. 387, 453, 36 L.Ed. 1018, 1042, 13 S.Ct. 110 (1892)).

[11] Illinois Central Railroad Company v. Illinois, 146 U.S. 387, 453-54, 36 L.Ed. 1018, 1042-43, 13 S.Ct. 110 (1892).

der them, within their respective jurisdictions."[12] Dominion and control over navigable waters therefore pass to a newly admitted state as a constitutional right.[13]

Control of public trust lands is vested in the state. Since submerged lands and waters may be seen as related to interstate commerce, one might expect the commerce clause of the United States Constitution to give their exclusive regulation to Congress. The United States Supreme Court held, however, that dominion and control over navigable waters pass to a newly admitted state as a constitutional right.[14] "The states are free to prescribe their own definitions of navigability, and, when not in conflict with federal dominion, 'the exclusive control of waters is vested in the state, whether the waters are deemed navigable in the Federal sense or in any other sense.' [citations omitted]"[15] With regard to tidelands, the Court held that "the soils under tidewaters within the original States were reserved to them respectively, and the States since admitted to the Union have the same sovereignty and jurisdiction in relation to such lands within their borders as the original States possessed."[16]

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[12]Phillips Petroleum Co. v. Mississippi, 108 S.Ct. 791, 794 (1988); Shively v. Bowlby, 152 U.S. 1, 57, 14 S.Ct. 548, 569, 38 L.Ed. 331 (1894); Martin V. Waddell, 41, U.S. (16 Pet.) 367, 413 (1842).

[13]Oregon ex rel. State Land Bd. v. Corvallis Sand & Gravel Co., 429 U.S. 363 (1977); Pollard v. Hagan, 44 U.S. (3 How..) 212, 228-30 (1845).

[14]Id.

[15]Hitchings v. Del Rio Woods Recreation & Park Dist., 55 Cal. App. 3d 560, 567, 127 Cal. Rptr. 830 (1st Dist. 1976).

[16]Borax Consolidated Ltd. v. Los Angeles, 296 U.S. 10, 15, 30 L.Ed. 9, 13-14, 56 S.Ct. 23 (1935), citing Martin v. Waddell, 16 Pet. 367, 410; Pollard v. Hagan, 3 How. 212, 229, 230; Goodtitle v. Kibbe, 9 How. 471, 478; Weber v. Harbor Commissioners, 18 Wall. 47, 64, 67; Shively v. Bowlby, 152 U.S. 1, 15, 26.

The Supreme Court in Phillips Petroleum Co. v. Mississippi in 1988 echoed its earlier holdings that the states have dominion over lands beneath tidal waters.[17] In Phillips Petroleum, petitioners attempted to prove that the original states did not claim title to non-navigable waters and that therefore today's public trust does not include tidelands which are under non-navigable waters.[18] The Court pointed out, however, that the individual states "have the authority to define the limits of the lands held in public trust and to recognize private rights in such lands as they see fit. [citing Shively v. Bowlby]"[19] American public trust doctrine covers tidal waters and tidelands as well as navigable fresh waters and the lands beneath them.[20]

C. California

California took title to submerged lands beneath navigable waters and to tidelands in trust for the public when it gained statehood status.[21] California also saw fit to express part of this trust in constitutional terms in guaranteeing a right of access to navigable waters.[22] For fed-

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[17] Phillips Petroleum Co. v. Mississippi, 108 S.Ct. 791, 795 (1988).

[18] Id., at 794.

[19] Id.

[20] Id., at 797.

[21] Borax Consolidated Ltd. v. Los Angeles, 296 U.S. 10, 15, 30 L.Ed. 9, 13-14, 56 S.Ct. 23 (1935); Martin v. Waddell, 16 Pet. 367, 410; Pollard v. Hagan, 3 How. 212, 229, 230; Goodtitle v. Kibbe, 9 How. 471, 478; Weber v. Harbor Commissioners, 18 Wall. 47, 64, 66; Shively v. Bowlby, 152 U.S. 1, 15, 26; Phillips Petroleum Co. v. Mississippi 108 S.Ct. 791, 796 (1988).

[22] Article X, section 4 of the California Constitution states:

> No individual, partnership, or corporation, claiming or possessing the frontage or tidal lands of a harbor, bay, inlet, estuary, or other navigable water in this State, shall be permitted to exclude the right of way to such water whenever it is required for any public purpose, nor to destroy or obstruct the free

eral commerce clause purposes, waters have been held to be navigable when they are "in fact, used or susceptible to being used in their natural condition 'or with reasonable improvements' for purposes of trade and commerce."[23] California courts have applied a more expansive test for navigability however, extending the public trust even to the rights of the public to hunt on these waters.[24]

California courts appear to be the most receptive in the nation to the public trust doctrine.[25] From its earliest public trust cases, the California Supreme Court has shown its willingness to curb abuses by legislative bodies which attempt to sever land from the public trust.[26] The California cases thus echo the English common law and early American common law rationale for the public trust, which is that of protecting the interests of the public in the lands to which the sovereign, or the state, holds title. "[W]here the legislature had clearly authorized a grant of tidelands, it was necessary to fall back on the doctrine that what had passed was a 'naked fee' subject to all of the public rights incident to

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navigation of such water; and the Legislature shall enact such laws as will give the most liberal construction to this provision, so that access to the navigable waters of this State shall be always attainable for the people thereof.

[23]United States v. Appalachian Power Co., 311 U.S. 377, 406-409 (1940); see generally Stevens, supra note 2, 15 202-03.

[24]Forestier v. Johnson, 164 Cal. 24, 40, 127 P. 156 (1912).

[25]Interview with Professor Joseph Sax, in Berkeley (March 27, 1989).

[26]See Forestier v. Johnson, 164 Cal. 24, 127 P. 156 (1912); People v. California Fish Co., 166 Cal. 576 (1913).

sovereign lands. Thus the grantee received bare title, with the public trust lingering over the land like the smile of a juridical Cheshire cat."[27]

Lands were sold in California during the nineteenth century under laws providing for the sale and reclamation of the swamp and overflowed lands granted to the state by the United States. It was frequently difficult to distinguish these lands from tidelands as they often abutted. The California Supreme Court held that "sale under these laws authorizes no destruction of any public easement and that whenever a navigable channel or navigable water may extend over any tide land granted by the state under these statutes, the public right of navigation therein is not destroyed, the purchaser takes subject thereto, and he has no right to enjoin or prevent any citizen from exercising the public rights incident thereto."[28] The California Supreme Court in an early case held that the Legislature may not sever tidelands from the public trust unless it is necessary to the interests of navigation.[29]

In People ex rel. Baker v. Mack, the court held that "[m]embers of the public have the right to navigate and to exercise the incidents of navigation in a lawful manner at any point below high water mark on waters of this state which are capable of being navigated by oar or motor propelled small craft."[30] California then departs from the federal commerce clause definition of navigability.[31] People v. El Dorado County recognized the

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[27]Stevens, supra note 2, at 215 (citing Forestier v. Johnson, 164 Cal. 24, 30, 127 P. 156, 158-59 (1912); Taylor, Patented Tidelands: A Naked Fee?, 47 Cal. St. B.J. 420 (1972)).

[28]Forestier v. Johnson, 164 Cal. 24, 32-34 (1912).

[29]People v. California Fish Co., 166 Cal. 576, 597 (1913).

[30]People ex rel. Baker v. Mack, 19 Cal. App. 3d 1040, 1049, 97 Cal. Rptr. 440, 454 (3d Dist. 1971).

[31]See supra notes 21-22 and accompanying text.

constitutional public right to navigate even though the navigation in question in the case was rafting by nonresidents.[32]

An oft-cited California Supreme Court case of recent years examined whether the State could transfer title to tidelands and submerged lands in the San Francisco Bay free of the public trust.[33] An 1870 legislative act authorized the State Board of Tide Land Commissioners to subdivide certain San Francisco Bay tidelands into lots and to sell them at auction.[34] The Court held that "submerged lands as well as lands subject to tidal action that were conveyed by [State Board of Tide Land Commissioners] deeds under the 1870 act are subject to the public trust."[35] The transferee then does not take the land with a clear title but rather subject to the public trust.

While most cases stress the inseverability of the public trust from the land, others have recognized severance of the trust in certain situations. In City of Long Beach v. Mansell, the California Supreme Court stated:

> [T]he state in its proper administration of the trust may find it necessary or advisable to cut off certain tidelands from water access and render them useless for trust purposes. In such a case the state through the Legislature may find and determine that such lands are no longer useful for trust purposes and free them from the trust. When tidelands have been so freed from the trust--and if they are not subject to the constitutional prohibition forbidding ali-

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[32] People v. El Dorado County, 96 Cal. App. 3d 403, 407, 157 Cal. Rptr. 815 (3d Dist. 1979).

[33] City of Berkeley v. Superior Court, 26 Cal. 3d 515, 162 Cal. Rptr. 327, 606 P.2d 362 (1980).

[34] Id., at 525.

[35] Id., at 534.

> enation--they may be irrevocably conveyed into absolute private ownership.[36]

The trust in traditional California law has been tied to navigation, fishing and commerce.[37] Trust rationale will therefore allow the Legislature to sever lands from the trust if by so doing it is advancing trust interests, i.e. in traditional terms, navigation, commerce or fisheries. The courts will, however, be extremely careful in examining legislative motivation where such a severance has been effected. In City of Berkeley v. Superior Court, the California Supreme Court stated that "statutes purporting to abandon the public trust are to be strictly construed; the intent to abandon must be clearly expressed or necessarily implied; and if any interpretation of the statute is reasonably possible which would retain the public interest in tidelands, the court must give the statute such an interpretation."[38]

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[36] City of Long Beach v. Mansell, 3 Cal. 3d 462, 482, 476 P.2d 423, 437, 91 Cal. Rptr. 23, 37 (1970). The "constitutional prohibition forbidding alienation" in the Court's decision refers to Cal. Const. art. X, section 3 which states:

> All tidelands within two miles of any incorporated city, city and county, or town in this State, and fronting on the water of any harbor, estuary, bay or inlet used for the purposes of navigation, shall be withheld from grant or sale to private persons, partnerships, or corporations....

See also People v. California Fish Co., 166 Cal. 576, 597 (1913).

[37] See generally Forestier v. Johnson, 164 Cal. 24 (1912); People v. California Fish Co., 166 Cal. 576 (1913); Boone v. Kingsbury, 206 Cal. 148 (1928). For expansion of the tidelands trust to scientific study, open space and ecosystems to be preserved, see Marks v. Whitney, 6 Cal. 3d 251, 98 Cal. Rptr. 790, 491 P.2d 374 (1971).

[38] City of Berkeley v. Superior Court, 26 Cal. 3d 515, 528, 162 Cal. Rptr. 327, 606 P.2d 362 (1980).

Any statute purporting to sever the land from the trust must contain "a clear intent expressed or necessarily implied that the purpose of the act [is] to further navigation or some other trust use."[39] In City of Berkeley, the Court held that the "grantees' title was subject to the trust, both because the Legislature had not made clear its intention to authorize a conveyance free of the trust and because the 1870 act and the conveyances under it were not intended to further trust purposes."[40] The Legislature thus must first make explicit its intention to authorize a conveyance free of the trust and, second, must make clear that the statute and the conveyances are intended to further trust purposes. The court will not imply such a finding. The result is that unless the Legislature makes a clear and explicit finding that the severance of the trust will further a trust use, the court will continue to hold the land subject to the trust and will prevent any interference with trust uses. The California courts thus continue to rely on Illinois Central Railroad Company v. Illinois.[41]

In Marks v. Whitney, the California Supreme Court explained what rights are included in public trust easements: "the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes the navigable waters of the state, and to use the bottom of the navigable waters for anchoring, standing, or other purposes. [citations omitted] The public has the same rights in and to tidelands."[42] The Court went on to state

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[39] Id., at 529.

[40] National Audubon Society v. Superior Court, 33 Cal. 3d 419, 439, 189 Cal. Rptr. 346, 658 P.2d 709 (1983) (citing City of Berkeley v. Superior Court, 26 Cal.3d 515, 162 Cal. Rptr. 327, 606 P.2d 362 (1980)).

[41] See supra notes 10-11 and accompanying text.

[42] Marks v. Whitney, 6 Cal. 3d 251, 259, 98 Cal. Rptr. 790, 491 P.2d 374 (1971).

that the public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs.[43] "There is a growing public recognition that one of the most important public uses of the tidelands--a use encompassed within the tidelands trust--is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area."[44] According to the Court, this list is not all-inclusive.[45]

While the above represents the purpose of the trust, National Audobon Society v. Superior Court is a clear statement of the scope of the trust.[46] The California public trust includes tidelands as well as all navigable lakes and streams.[47] "A waterway usable only for pleasure boating is nevertheless a navigable waterway and protected by the public trust."[48] The Court went on to hold that the public trust doctrine also protects navigable waters from harm caused by diversion of nonnavigable tributaries.[49]

The United States Supreme Court in its recent Phillips Petroleum decision lends support to the California courts' interpretation of the public trust. In deciding whether the public trust in Mississippi is applicable

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[43] Id.
[44] Id., at 259-60.
[45] Id., at 260.
[46] National Audobon Society v. Superior Court, 33 Cal. 3d 419, 435, 189 Cal. Rptr. 346, 658 P.2d 709 (1983).
[47] Id.
[48] Id., at 435 n. 17.
[49] Id., at 437.

to all tidelands, not just those that are navigable, the Court's holding is a very important one for the future of the trust in California:

> We have recognized the importance of honoring reasonable expectations in property interests. [citation omitted] But such expectations can only be of consequence where they are "reasonable"ones. Here, Mississippi law appears to have consistently held that the public trust in lands under water includes "title to all the land under tidewater. [citations omitted] Although the Mississippi Supreme Court acknowledged that this case may be the first where it faced the question of the public trust interest in non-navigable tidelands, [citation omitted], the clear and unequivocal statements in its earlier opinions should have been ample indication of the State's claim to tidelands. Moreover, cases which have discussed the State's public trust interest in these lands have described uses of them not related to navigability, such as bathing, swimming, recreation, fishing, and mineral development. [citation omitted] These statements, too,should have made clear that the State's claims were not limited to lands under navigable waterways. Any contrary expectations cannot be considered reasonable.[50]

The Court reiterated its earlier holding that each state deals with the tidelands within its borders according to its own views of justice and policy.[51] California's public trust decisions seem to echo the Mississippi decisions cited by the Court in the Phillips Petroleum decision upholding public trust in non-navigable public trust waters. The decision also legitimates California's wide variety of trust uses, such as for hunting,

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[50] Phillips Petroleum Co. v. Mississippi, 108 S.Ct. 791, 798 (1988).

[51] Id., at 798-99; see also Shively v. Bowlby, 152 U.S. 1, 26, 14 S.Ct. 548, 557, 38 L.Ed. 331 (1894).

bathing, swimming, general recreation, preservation of the lands in their natural state and scenery.[52]

III. Danger of a Rising Sea Level

The National Academy of Sciences suggests that an expected doubling of atmospheric carbon dioxide and other greenhouse gases could raise the earth's average surface temperature 1.5-4.5 degrees C (3-8 degrees F) in the next century.[53] Scientists predict that global warming could cause a sea level rise of 0.5 to 2 m by 2100, inundating wetlands and lowlands, eroding beaches, exacerbating coastal flooding, and increasing the salinity of estuaries and aquifers.[54] There is a strong scientific consensus that "a continuing increase in the atmospheric concentrations of the Greenhouse gases (carbon dioxide, methane, chlorofluorocarbons, nitrogen dioxide and ozone) will cause an increase in the Earth's average temperature of 1.5 to 4.5 degrees Celsius (approximately 3 to 8 degrees Fahrenheit) by the middle of the next century. Because rising temperatures cause ice to melt and water to expand, rising sea level is an inevitable consequence of the warming trend; the predicted increase is in the range of 0.5 to 1.5 meters (roughly, 2-5 feet) over a similar time period."[55] Coastal geologists have recognized a thirty centimeter (one foot)

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[52] See supra notes 42-44 and accompanying text.

[53] Titus and Barth, An Overview of the Causes and Effects of Sea Level Rise in Greenhouse Effect and Sea Level Rise 1 (1984).

[54] 2 United States Environmental Protection Agency Office of Policy, planning and Evaluation Office of Research and Development, The Potential Effects of Global Climate Change on the United States: Draft Report to Congress ch. 9, at 1 (1988).

[55] Implications of Global Warming for Natural Resources: Before the Subcommittee on Water and Power Resources of the House Interior and Insular Affairs Committee, San Francisco, Oct. 17, 1988 (testimony of Dr. Robert W. Buddemeier of the University of California's Lawrence

rise in sea level along much of the United States coast in the last century, and they suggest that it could be responsible for the serious erosion problems faced by many coastal communities.[56]

An immediate concern is that the projected global warming could heat ocean water which would then expand.[57] This expansion would be accompanied by the mountain glaciers and parts of ice sheets in West Antarctica, East Antarctica, and Greenland melting or sliding into the oceans, causing a rise in sea level by as much as one meter in the next century.[58]

The San Francisco Bay Conservation and Development Commission (BCDC) has done a study containing projections of mean sea level rise on San Francisco Bay of between 0.37 feet and 2.78 feet by the year 2006 and between 0.48 feet and 5.76 feet for the year 2036, depending on the location.[59] Based upon this study, BCDC adopted amendments to the San Francisco Bay Plan regarding the safety of fills and directed its staff to work with local jurisdictions to monitor sea level changes in the Bay area and to encourage coordinated local planning in response to future hazards of tidal flooding.[60] In one response to such encouragement, the Contra Costa County East County Regional Planning Commission staff took BCDC's

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Livermore National Laboratory, The Impacts of Climate Change on the Sacramento-San Joaquin Delta).

[56]Titus and Barth, supra note 52, at 1.

[57]Id., at 2.

[58]Id.

[59]San Francisco Bay Conservation and Development Commission, Sea Level Rise: Predictions and Implications for San Francisco Bay 47 (1987, revised 1988).

[60]Letter from Joan L. Lundstrom, Permit Analyst with the San Francisco Bay Conservation and Development Commission, to the author (Feb. 26, 1990).

recommendation that planning for a four foot rise is prudent in its recommendations on a General Plan Amendment request.[61]

It is estimated that improving the levees in the Sacramento-San Joaquin River Delta just to protect them against flooding at the current sea level could cost at least $4 billion.[62] The cost of maintaining the levees could increase with an increasing sea level.[63] Failure of the levees will create a large body of water with a longer water residence time.[64] Any salt or other contamination would be more difficult to flush out of the delta region, and significant amounts of freshwater would be needed to flush out the salt if salt water fills the islands when the levees fail.[65]

Effects of sea level rise on the San Francisco Bay area wetlands could be dramatic. Just a few of the possibilities include levee failure causing many marshes to become deepwater areas.[66] Loss of emergent vegetation could significantly reduce the numbers of migratory waterfowl using the area.[67] With the failure of the levees, a large inland lake with fresh to brackish water quality could be created in the delta.[68] This

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[61] Contra Costa County East County Regional Planning Commission Staff Report and Recommendations on Ujdur General Plan Amendment 7 (August 22, 1989).

[62] 1 United States Environmental Protection Agency Office of Policy, Planning, and Evaluation Office of Research and Development, The Potential Effects of Global Climate Change on the United States: Draft Report to Congress ch. 4, at 28 (Oct. 1988) (citing California Department of Water Resources, 1982).

[63] Id., at 28.

[64] Id.

[65] Id.

[66] Id., at 31.

[67] Id.

[68] Id.

could reduce the spawning of striped bass and shad which spawn in essentially freshwater conditions.[69] Despite a fairly low rate of sea level rise over the past century, there has been a loss of tidal wetland in the South Bay.[70] With sea level rise, it is likely that the amount of tidal marsh in this area will decrease substantially with severe consequences for both endangered wildlife species as well as other birds and mammals that are dependent on tidal marshes for their habitat.[71]

Several scenarios could be projected from scientists' prediction of a sea level rise in California. In one, a local agency could approve a toxic waste facility or landfill on a site currently high enough and far enough back from, for instance, San Francisco Bay or the Delta so as not to create a problem. Should the sea level rise, however, the landfill could be inundated, carrying toxic waste into the Bay and on up into the Delta. This could affect both agriculture and freshwater sources in the area. Without taking this scenario into account, the local agency would be approving a potential toxic dump into the ecologically sensitive Bay and wetlands.

In another scenario, property owners could individually be taking action which would ultimately affect many others. For example, one or several property owners could shore up their property with levees, which would then cause the water to flood other lands adjacent to the Bay and the Delta.[72]

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[69] Id.

[70] San Francisco Bay Conservation and Development Commission, Sea Level Rise: Predictions and Implications for San Francisco Bay 65 (1987, revised 1988).

[71] Id.

[72] See 1 United Stated Environmental Protection Agency Office of Policy, Planning, and Evaluation Office of Research and Development, The

IV. Anticipatory Public Trust Doctrine

As evidence of the rising sea level becomes more real for greater numbers of people, the California courts will be faced with suits concerning scenarios like those described supra. Given the California courts' willingness to apply the public trust doctrine, it is likely the doctrine will be argued by counsel and even used by the courts in response to these and similar scenarios.[73] The application of the public trust doctrine in anticipation of actual inundation due to sea level rise may be a solution to the perceived ill effects of individuals taking action action to prevent harm to their property interests or individual use of property which could ultimately harm interests of others as sea level rises.

Before determining whether a court would be justified in applying the public trust doctrine not only in response to sea level rise, but also in anticipation of the rise, it is necessary to understand and apply the rationale behind the doctrine as it exists in the State. The existence of the doctrine, as it is applied in English and American common law, reflects a basic distrust of the Sovereign/State as property owner and trustee for the public interest.[74] The fear is that the State will grant title in the land so as to infringe on the public's ability to maintain navigation, fishing, recreation, and other recognized public interests in the submerged lands and tidelands.[75] If a given landowner's response to a potential rising sea level eliminates navigable wetlands or tidelands, there would be a possible cause of action against that landowner using the public trust ra-

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Potential Effects of Global Climate Change on the United States: Draft Report to Congress, ch. 4, at 26-28.

[73] See supra notes 21-51 and accompanying text.

[74] See supra notes 6-7 and 26-27 and accompanying text.

[75] Id.

tionale. Similarly, if a present use threatens future public trust interests, an anticipatory public trust rationale may be available.

In order to apply the trust in anticipation of the actual formation of the trust lands, it is necessary to determine whether the public trust applies to tidelands and submerged lands as they existed at the time the state came into the Union or whether the trust is ambulatory as sea level changes. Since the rationale behind the trust is to protect certain public interests in tidelands and submerged lands, it would appear patently absurd to maintain, for example, that the state holds certain lands in trust to protect navigation, when the water over which to navigate is no longer there. Conversely, the state's ability to protect the public would be very limited indeed if it could not defend the public interest in navigation over newly submerged land. A good illustration would be that of a river changing course.[76] The state would appear ridiculous attempting to exercise public trust rights in navigation over a dry riverbed while a private landowner could exercise unfettered discretion over the newly carved channel, thus effectively preventing the public from using that portion of the river.

The United States Supreme Court has held that riparian landowners are entitled to gradual accretion in their land caused by dereliction or alluvion.[77] The rationale for such a rule is based on reciprocity in that the landowner who bears the risk of loss to a river, lake or sea is also enti-

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[76] See generally Jefferis v. East Omaha Land Co., 134 U.S. 178 (1890).

[77] Id., Hughes v. Washington 389 U.S. 290 (1967).

Blackstone defines alluvion as "the washing up of sand and earth, so as in time to make terra firma" and dereliction as the shrinking back of the sea below the usual water mark. Blackstone, 2 Com. 262; Jefferis v. East Omaha Land Co., 134 U.S. at 192.

tled to any additions.[78] "[T]he rule has been vindicated on the principle of natural justice, that he who sustains the burden of losses and of repairs, imposed by the contiguity of waters, ought to receive whatever benefits they may bring by accretion..."[79] Blackstone justifies such a rule in the same way for "these owners being often losers by the breaking in of the sea, or at charges to keep it out, this possible gain is therefore a reciprocal consideration for such possible charge or loss."[80]

The landowner whose land is near the water therefore runs the risk of either gaining or losing land to the action of nature. Finnell distinguishes littoral and riparian land law from land law generally and defines the resulting doctrine as a "migrating" or "rolling" easement, migrating with the water.[81] In Phillips Petroleum, the United States Supreme Court affirmed the decision of the Mississippi Supreme Court that "by virtue of becoming a State, Mississippi acquired 'fee simple title to all lands naturally subject to tidal influence, inland to today's mean high water mark....'"[82] The public trust is therefore not frozen at the boundaries of the public trust lands acquired by a state at the time of admission to the Union. "Erosion will cause a loss of private dominion; reliction and allu-

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[78]Jefferis v. East Omaha Land Co., 134 U.S. at 189.

[79]Jefferis v. East Omaha Land Co., 134 U.S. at 189; Banks v. Ogden, 2 Wall. 57, 67.

[80]Blackstone, 2 Com. 262; Jefferis v. East Omaha Land Co., 134 U.S. at 192.

[81]Finnell, Public Access to Coastal Public Property: Judicial Theories and the Taking Issue, 67 N.C.L. Rev. 627, 651-653 (1989).

[82]Phillips Petroleum Co. v. Mississippi, 108 S.Ct. 791, 793 (1988) (quoting Cinque Bambini Partnership v. State, 491 So.2d 508, 510 (1986).

vion will cause a gain of land to the private landowner. [citations omitted]"[83]

Under the current state of the law, the California courts would be justified in applying the public trust once sea level has risen and inundated lands currently landward of the high water mark. No law, however, exists on the question of whether they could apply the public trust doctrine in anticipation of the inundation. Application of the reasoning behind the doctrine aids in determining the legitimacy of its anticipatory application.

The public possesses certain interests in tidelands and submerged lands which it is the duty of the State to protect.[84] The public uses to which public trust lands are subject are sufficiently flexible to encompass changing public needs.[85] Since natural forces cause gains and losses to the lands in which the public possesses these interests, the boundaries of the actual public trust lands migrate.[86] In certain cases, however, it may be clear where the new boundaries will be before the actual change occurs. In such a case, it appears to be against public policy to prevent courts from enjoining action which will clearly harm the public trust once the new boundaries are in place. The potential harm to the public interests should justify an early application of the public trust doctrine to soon-to-be-created public trust lands.

In order to arrive at the determination that anticipatory application of the public trust is justified, the courts will have to determine:

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[83]Finnell, supra note 81 at 652.

[84]Supra notes 1-51 and accompanying text.

[85]Marks v. Whitney, 6 Cal. 3d 251, 259, 98 Cal. Rptr. 790, 491 P.2d 374 (1971).

[86]Supra notes 76-83 and accompanying text.

(a) that there exists a significant likelihood that the lands in question would, if left to nature, become submerged, and thus navigable, or subject to the tide;

(b) that such lands once submerged would be subject to the public trust;

(c) that a current given course of action would harm future public trust interests; and

(d) that the courts may assert this public trust in anticipation of the actual submersion.

The courts will be faced with difficult choices in light of the increasing acceptance by the scientific community that sea level will rise over the next century.[87] Three approaches with respect to the application of the public trust doctrine to such a rise appear to be open to the courts:

(a) Reject the doctrine entirely as an anachronism incapable of fair application to the great change about to take place in public trust lands;

(b) Apply the public trust doctrine in its present form to public trust lands as they presently exist; or

(c) Adapt the doctrine to the changing circumstances in public trust lands.

Rejection of the doctrine hardly seems likely in light of how well entrenched it is in California law. The historical justification for its use will not disappear with the changes in the level of the sea. Application of the doctrine in its current form appears woefully inadequate in face of the drastic changes in topography which are predicted. Adaptation of the doctrine seems to be the most viable alternative, and I would suggest the

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[87] Supra note 55.

anticipatory use of the doctrine would serve the public interests in the spirit of the historical underpinnings of the doctrine.

While the courts will be faced with individual instances in which the application of an anticipatory public trust doctrine may be called for, they will only be able to deal with the problems on an ad hoc basis. That is the nature of adjudication.

V. Legislative Alternative

While adjudication by its nature deals with problems only as they arise on an ad hoc basis, legislation is designed to deal with problems of a more generalized nature and can make laws before the fact to deal with problems before they arise.

Nothing in the public trust doctrine prevents the Legislature from legislating with regard to public trust lands as long as it does so in a way that does not substantially impair any of the rights for which those lands are held in trust for the public.[88] In Boone v. Kingsbury, the California Supreme Court in 1928 upheld oil leases in public trust lands off the Ventura County coast based on its understanding and the understanding of the Legislature that the operation of the oil wells would be as safe and scientific as the operation of oil wells prior to that time and that their presence would not substantially interfere with fishing, commerce and navigation in the area.[89] It seems safe to assume that such a list of public trust interests would be expanded today in light of later decisions including such uses as swimming and ecological preservation.[90] While the

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[88]Boone v. Kingsbury, 206 Cal. 148, 193 (1928); Illinois Central Railroad Company v. Illinois, 146 U.S. 387, 36 L.Ed. 1018, 13 S.Ct. 110 (1892).

[89]Boone v. Kingsbury, 106 Cal. at 193.

[90]Marks v. Whitney, 6 Cal. 3d 251, 259-60, 98 Cal. Rptr. 790, 491 P.2d 374 (1971).

rationale in Boone v. Kingsbury is sound in allowing use of public trust land which would not interfere with public trust interests, it is not clear that the Court would reach the same decision today to allow the drilling of oil wells. For one thing, the Court and the Legislature assumed at that time that the operation of oil wells would be safe based on then current experience. Experience since that time, however, seems to have shown the assumption to be false. Public trust interests, whether they be limited to the 1928 list or expanded to the current view, could easily be seen as being impaired by the granting of oil leases.

The public trust doctrine thus does not prohibit legislative action with regard to public trust lands as long as it is in the public trust interest. Since fear of capture of the Legislature by interests adverse to those of the public is a large part of the rationale behind the American and California public trust doctrine, the courts would have no reason to upset a legislative enactment aimed at protecting public trust interests. If the Legislature acts to protect public trust interests from effects of the rising sea level and actions by landowners adverse to such interests, the Court would likely not be inclined to interfere on account of the public trust. It would not be the same as the case of the Sovereign selling off public trust lands for profit, nor would the Legislature be releasing land from the public trust. It would be working toward the solution of a wide-ranging problem affecting public trust interests.

The traditional distrust of the Legislature therefore would not be applicable in such a situation. Public trust cases frequently point up the fact that the courts do not trust the Legislature to carry out its responsibility with regard to the public trust. Were the Legislature to show good faith in dealing with the potential problems posed by the rising sea

level, the distrust would be unfounded.[91] A prototypical example would be the response by the San Francisco Bay Conservation and Development Commission recommending that local land use decisionmakers take the rising sea level into account in reaching their land use decisions.[92]

The Legislature could likely use the public trust doctrine to advantage in fending off private complaints to legislation aimed at protecting the public interests in light of a rising sea level. As long as the State can show that the legislative action is in a public trust interest, the courts would have to uphold the action on public trust grounds. Of course, the State would be required to convince the court that the trust should be applied anticipatorily to lands not yet subject to the tides. This is the same hurdle that the courts would have to get over to apply the public trust in a case of a single landowner's action if the Legislature did not act. In the case of review of legislative action, the court will uphold the legislation as long as it does not substantially impair public trust interests.[93]

Both judicial and legislative responses can be examined for the two scenarios mentioned supra, of the landfill site and of the construction of levees. In the first case, a judicial response would be limited to this one particular landfill and the owner of the land in question versus a single opponent or class of opponents. While there may be intervenors or amici filing briefs in the case, this is an expensive proposition, so judicial action will be limited to those who can afford to present their case to the judge. The court may find against the landfill site, but the owner of the

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[91] See generally Boone v. Kingsbury, 206 Cal. 148 (1928).

[92] See supra notes 58-60 and accompanying text.

[93] Boone v. Kingsbury, 106 Cal. at 193.

site may not have been aware beforehand of the way the public trust could be used anticipatorily against him/her. On the other hand, were legislative action taken before the courts are faced with these questions, landowners would be on notice that such uses of the land will be prohibited, and much uncertainty could be avoided. The Legislature is also more open to a thorough presentation of the polycentric issues involved. While adjudication is usually a two-sided situation, legislation involves the presentation of the views of many sides. It is also less expensive to present views to a legislator than it is to submit a brief in a judicial case. Of course, a sophisticated lobbying effort costs money, but, on the other hand, any constituent can contact his/her legislative representative.

In the case of the levees, the court will find for one side or the other based on the evidence presented in that one case. While the holding may be justified in that particular case, it may be setting precedent for a case in which the result would not be the best. Once again, the fact that the Legislature would be taking into account different situations throughout the State or the region should produce a superior result. The polycentrism of environmental problems would seem to dictate a legislative response rather than a judicial one.

By its nature, the judicial branch is reactive. It cannot respond until a cause of action is brought before it. The legislative branch, on the other hand, has the capacity to be proactive. While frequently it merely responds to public pressure once a problem has become too great to be ignored, it can anticipate problems and legislate accordingly. The Legislature can also deal with a problem on a uniform basis while taking many sides into consideration. Given the large numbers of property owners and members of the public who will be affected by a sea level rise, the

Legislature would be the proper forum for a response. The courts would naturally remain in the picture with their ability to review legislative action. The test they would apply would be the Boone v. Kingsbury test of substantial impairment of public trust interests. As long as the legislative action does not substantially impair public trust interests as currently defined, the courts would uphold the legislative action.

VI. Conclusion

The public trust doctrine can be a very powerful legal tool for dealing with the sea level rise anticipated over the next century. The doctrine dictates that the State holds tidelands and submerged lands in trust for the public. The State must protect the public's interests in these lands, and these interests consist, among others, of navigation, fishing, commerce, hunting, recreation, ecological preservation and scenic preservation. These interests, however, must remain flexible to change with current needs. Under federal law, the boundaries of the trust lands change with the forces of nature. Since sea level rise is predicted to be a relatively rapid change, courts should be able to apply the public trust doctrine to lands which will fairly soon become public trust lands in anticipation of the actual rise of sea level. To assure a uniform and informed response by the State to public trust needs, the Legislature should anticipate use of the public trust doctrine to sea level rise and legislate accordingly.