



Defining and Contesting Environmental Justice: Socio-natures and the Politics of Scale in the Delta

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Abstract: This article examines a contemporary process intended to “identify a strategy for managing the Sacramento–San Joaquin Delta as a sustainable ecosystem that would continue to support environmental and economic functions that are critical to the people of California” (Delta Vision 2008, <http://deltavision.ca.gov/AboutDeltaVision.shtml>). Environmental injustices in the Delta are exacerbated by connected conflicts between knowledge and power, over the scale at which “environmental justice” and the “Delta” are understood through public policy. The rejection of environmental justice and the socio-natural in the Delta Vision process represents how contemporary policy processes are recreating and reenacting the power/knowledge dynamics that have defined the Delta, placed it on a path to ecological collapse and injected high levels of social and racial injustice in its landscape over the past 150 years. Our article combines an ethnographic and a historical geographical approach that contributes to the literature on environmental justice and scale and links with the literature on water governance and power to advance the task of defining environmental justice from the academic and policy perspectives.

Keywords: environmental justice, socio-nature, Delta, California, scale, water governance

Introduction

This article examines a contemporary policymaking process known as the “Delta Vision”, intended to “identify a strategy for managing the Sacramento–San Joaquin Delta as a sustainable ecosystem that would continue to support environmental and economic functions that are critical to the people of California”.¹ The Delta, located in the Central Valley Region in California, is a complex aquatic and terrestrial wetland ecosystem, through which approximately 40 million acre-feet² of water flow each year. Eighteen million acre-feet of this water are diverted for agriculture and urban consumptive use, including diversion to southern CA (Lund et al 2007). The Delta is the largest freshwater (formerly tidal) estuary on the West Coast, encompassing 738,000 acres of wetlands and islands, and 700 miles of meandering waterways (Delta

Protection Commission 2007). It is formed by the convergence of the Sacramento and San Joaquin Rivers and the San Francisco Bay. The Delta region bisects California's Central Valley, dividing it into the Sacramento Valley to the north and the San Joaquin Valley to the south. The Central Valley is a vast plain surrounded by mountains and covering nearly 15 million acres—an area as large as England (Johnson, Haslam and Dawson 1993). The Delta is the conveyance mechanism that waters California's massive and global agribusiness and that lubricates the state's growth machine of urban and suburban development. As such, Delta water supplies drinking water to 20 million people from the San Francisco Bay Area to the Los Angeles Basin, nearly half of California's population.

The Delta is considered in "crisis" by politicians, scientists and environmentalists due to a combination of water management decisions, impaired water quality, invasive species, and upstream and upland land-use impacts. Pressures on the Delta include rapid urban and suburban encroachment, agricultural chemical runoff, contamination by mercury and other legacies of the state's mining and industrial production, subsidence of peat soils due to cultivation, and broader-scale, complex climatic changes such as sea-level rise. Together these forces have brought the Delta to the brink of an ecological collapse with the loss of wetlands, negatively impacted water quality and the near-total collapse of several animal and plant populations, including several endangered fish species (Little Hoover Commission 2005). In what otherwise might simply be a vast and peaty wetland, the needs and desires of the state (principally continued economic growth from urban and agricultural development) have collided disastrously with the health and continued function of the ecosystem.

These environmental, land-use and population pressures have prompted a policy response, the Delta Vision. The Delta Vision is a technocratic-managerial process that has further centralized decision-making about the fate of the Delta into the hands of public regulatory agencies and powerful water, utility and agricultural interests. The Delta is the narrative, symbolic, and material site of struggle between the forces of state, capital, and nature. However, in this clash of the titans, the voice, interests, and visibility of human communities, especially socially vulnerable populations, whether defined by race or class, have been marginalized in policy debates on the Delta. This marginalization is neither new, nor surprising, yet it is still important to document and understand. During the long and convoluted history of efforts to guide and shape the workings and fate of the Delta, its ecosystems and its ecological processes, political and economic interests have and continue to circumscribe, discipline, and name the Delta as the unruly place that once was many places and no place at once. The Delta has been shaped by desires to know and to own it through twin projects of

furthering capital-intensive economic development and of state-building in California.

Our research focuses on competing definitions and representations of environmental justice and scale in the Delta. Specifically, our analysis is focused on identifying whether and how environmental justice as a conceptual category is understood and interpreted in the Delta Vision process. We seek to highlight what environmental justice in the Delta means, but, to do so, we first articulate several contested questions related to this domain of environmental justice, scale and the Delta. How is the Delta bounded and understood as a both a material place and as a locus of state intervention? What are the spatial boundaries of the Delta? How were these boundaries set and to serve whose interests? What is within its boundaries and what lies outside, and what are the relationships between these inside and outside realms? In sum, how is the conflict over scale at the core of the politics in the efforts to both “save” and “manage” the Delta through the Delta Vision process?

This scalar ambiguity does not merely imply a question of descriptive clarity. Rather, it signifies and provokes fundamental questions of political power. Within the initial act of setting the boundaries of the Delta as a unit of analysis and enacted through policy intervention inheres its “always already political” character. Within the inscription of the Delta’s boundaries are complex politics of representation, both of membership and of discourse. What actors are considered legitimate (and illegitimate) stakeholders in the management of the Delta? What issues are legible (and illegible) in the Delta Vision policy framework? More broadly still, the scaling of the Delta sets the terms of the subsequent struggles. This article explores both the struggles by contending actors within the Delta as well as the struggles over scale as different political actors seek to bound the issue in a fashion that privileges their interests over others. For the purposes of our analysis, we define the Delta as a geographical region characterized not solely by its political boundaries nor lines drawn on a map, but rather by its environmental history as a site constructed by large-scale human intervention. The Delta is a region that resource extraction (namely water), capital accumulation, human exploitation and engineering have inscribed as a socio-natural space, susceptible to and at the same time driving the ever-present and always-evolving desires of numerous and varied human populations that seek to leave their mark on its particular geographic and physical environment. We draw on theoretical definitions of socio-nature to describe the interrelationships “between society and nature” and socio-ecological products (Swyngedouw 1996) and which are created through the “social production of nature” (Harvey 1996; Smith 1984).

Our methods are based on historical geographic and discursive analyses of the political and social processes by which the socio-nature

of the Delta has been constructed and continues to be shaped. This article also draws on 12 months of fieldwork examining the Delta Vision Process and over 20 semi-structured interviews with key actors (scientists, policymakers, and activists). Our linking of the historical processes of exploitation of the Delta, especially relating to water, with the contemporary policy process is an explicit rejoinder to decision-makers who actively seek to erase the history of this exploitation. Our analysis is filtered through our multidisciplinary lenses drawn from geography, sociology, ecological science, and the environmental humanities. This article is part of a larger research project that examines science and policymaking in the Delta.³ Our analysis is also informed by participant observation, based upon attendance at, observation of, and participation in a number of Delta Vision Blue Ribbon Task Force meetings and Stakeholder Coordination Group meetings sponsored by the Delta Vision program, as well as several public education meetings sponsored by the Delta Vision program and other organizations.⁴ We also draw heavily from environmental justice activist conceptions of the Delta, primarily from an organization known as the Environmental Justice Coalition for Water (EJCW).

One key finding from our data is that “environmental justice”, as a meaningful analytic or political dimension, is marginalized within the Delta Vision process, understood as a “special interest”, rather than a term that has particular legal/regulatory meaning and activist articulation. The Delta Vision process can be characterized as one in which dominant actors rationalize their positions, in the service of an abstract and ostensibly apolitical capital and a self-legitimizing state. We argue that the production of environmental injustices in the Delta (some of, but not all of which are experienced in racially disproportionate terms) is exacerbated by connected conflicts between knowledge and power, particularly over the scale at which “environmental justice” and the “Delta” are experienced, understood, or acted upon through public policy. Whereas the central vision of the Delta Vision process imagines what it terms “co-equal” goals that balance economy and the environment, our analysis rejects the separation of these two domains. Indeed, our critique of the Delta Vision process foregrounds the embeddedness of the economic/environmental drawing from socio- and techno-natures⁵ literatures that highlight the fusion of the social and the natural, particularly through the mechanisms of what Kaika (2005) calls modernity’s Promethean project symbolized by water infrastructure like dams enabled through the confluence of engineering, science and modern state formation (Carroll 2006).

As a complex socio-nature located in the geographic, ecological and economic heart of California, the Delta is an appropriate site to develop critical perspectives in environmental justice research that are simultaneously focused on contemporary politics and grounded in the

insights from research on environmental history and radical geography. The Delta's socio-nature is shaped by complex and hierarchical social, political, economic, and ecological forces that have thrust the regulatory state and capital resources into action. The Delta's socio-nature is produced by pumping water through and out of the region using a vast network of gargantuan pumps, aqueducts and canals that convey it over hundreds of miles from the wet and less-populated north to the dry and booming Central Valley and southern California. The Delta is also criss-crossed by a vast levee system to "reclaim" and protect riparian lands for settlement. This system is now considered to be on the brink of collapse, as urbanized regions in the Delta face flooding risk on par with post-Hurricane Katrina New Orleans.⁶

At the same time, the Delta is an interconnected system of everyday places where diverse populations live, work, and play. Like California and its Central Valley in general, the Delta embodies extremes of affluence and poverty and faces a myriad of social and environmental problems, including poor air quality, water contamination, and pesticide poisoning (Harrison 2006). Scholars such as geographer Ruth Wilson Gilmore (2007) document the history of how water politics and the rise of agribusiness shaped the political and social landscape in the Central Valley as a site of both extreme wealth generation and conditions of abject poverty. Historical patterns of labor exploitation continue with farm workers (now primarily, but not exclusively Mexican and Mexican-American) toiling in the Central Valley to wrest "nature's bounty" from the soil. Their labor is repaid by low-wage, hazardous and mostly seasonal work, living in relatively low-quality and high-cost housing, with uneven access to safe drinking water as well as educational, health and other services (McWilliams 1999 [1935]; Villarejo et al 2000). Gilmore (2007) links this political and economic history to the region's current status as the state's dumping ground for prisons and environmental pollution.

We argue that the rejection of both environmental justice and technonatural perspectives under Delta Vision represents how contemporary policy processes are recreating and reenacting conflicting structures of knowledge and power that have shaped the Delta and placed it on a path to ecological collapse and which have defined the region by high levels of social and racial injustice over the past 150 years. Through continued state agency and industrial interventions—modernizing engineering and institutional regulation—the Delta extends beyond its current political boundaries and continues to engage our collective geographical and political imaginaries.

The article begins by reviewing the literature on environmental justice and scale and water and power. We then highlight the historical formation of the Delta's "socio-nature" (White and Wilbert 2009). The policy context of the Delta Vision process is outlined,

as well as its immediate predecessor, California Federal Bay-Delta Program (CALFED), which was an attempt to manage the Delta under a joint state–federal policy process. In contrast to the state-sanctioned perspective on environmental justice, we present the competing social movement articulation of environmental justice in the Delta, primarily through a non-governmental organization, Environmental Justice Coalition for Water. We then offer a conceptual framework for understanding and articulating environmental justice in the Delta that both builds upon environmental justice activist articulations and goes beyond them, through an analysis drawing heavily on the concept of socio-nature. Our analysis of environmental justice in the Delta thus includes the particular problems of where disproportionate environmental pollution occurs along racial lines, and connects these to other pollution problems associated with the Delta. Our broad view of environmental justice draws upon a wide array of critical, historical and theoretical frameworks, from both the ecological and social sciences.⁷ The final section considers the implications of our case study as a rejoinder to influential critiques of environmental justice from radical geography, specifically Harvey’s (1996) critique of environmental justice movements as militant particularism, and Sywngedouw and Heynen’s (2003) critique of environmental justice research for privileging local notions of distributive justice while missing important critical analysis of capitalism that cannot be gained except at broader scales and framed through Marxist urban ecology.

Scaling Environmental Justice and Water in the Delta

The relevance of scale within environmental justice movements has been addressed in a number of important works, emerging from political and radical geographers. Scholars note that: “the continuous reorganization of spatial scales is an integral part of social strategies to combat and defend control over limited resources and/or a struggle for empowerment” (Sywngedouw and Heynen 2003). Struggles over scale are not simply over who controls a given territorial unit, but about the scale at which that unit is defined (Herod 1991, 1997). Thus, we agree with scholars who take scale to be both an empirical and epistemological tool of understanding and representing the world. Scale is not understood as natural but instead both socially produced (derived from social processes, and often social struggle) and socially producing (exerting coercion and hegemony in a Gramscian sense) (Williams 1999:52). Towers (2000), for instance, argues that the environmental justice movement is “defined by scale”, or more specifically, by a tension between local scale(s) at which grassroots protest over unwanted pollution takes place, and the broader geographic scales at which

the discourse of environmental justice is directed. Williams (1999) focuses on the mismatch between the scales at which the problems of environmental inequality are most clearly manifested and experienced and the scales at which they are produced and can therefore be resolved (or at least targeted for action). Kurtz (2003:891) similarly observes that: “[T]he very concept of environmental injustice precipitates a politics of scale, as the locally experienced problem of burdensome pollution can hardly be resolved at the local scale, whether by capital or the state, when it originates in political and economic relationships that extend well beyond the scale of the locality”.

Another scalar problematic is what Kurtz (2003) calls its spatial or scalar “ambiguity”. Such ambiguity derives partially from the “modifiable areal unit” problem (Openshaw 1983) in which “different statistical relationships between spatially aggregated data can be derived using different spatial units of analysis” as a result of both “scale effects” of aggregating data at different resolutions and “aggregation effects” of the different groupings of units. The finding of race as a primary factor at certain analytical scales and class (or “normal” market functioning) at other scales is a primary example of this ambiguity. This research on the centrality of scale for environmental justice movements builds upon earlier work by social movement scholars on the articulation of environmental racism and how problem identification contributes to the formation of the environmental justice movement (Sze and London 2008). Whereas the focus of environmental injustice in the academic literature is generally on controversies over specific siting of polluting facilities, our case stands in contrast by focusing on how environmental injustices are geographically and temporally dispersed. This is necessary in part because the nature of water and water politics in the Delta requires defining and categorizing environmental justice as extremely diffuse.

The diffuse property of water and the theoretical and pragmatic implications of this diffuse quality are a central problematic in the geographic literatures on firstly water and secondly power, which collectively highlight the “already always political” character, politics and scale of water. Recent literature on water management in diverse geographies from Australia, Latin America and Europe highlights the ways in which social and economic power flows in and through water and how social conflicts and power inequalities course through river and ecosystem management (Hillman 2006; Swyngedouw 2004). Radical geographers and others ask: What is water for and for whom is it flowing? How is it managed and indeed, “made”? As Kaika (2005:32) argues, the very “nature” of water is highly technological. She writes that “water enters in one end of the [water supply] network as H₂O and subsequently undergoes a chemical and social transformation to end up at the other end (the tap) as potable water, as a commodity properly priced and treated”. This literature on water and power

parallel the critical conversations about the social construction of environmental justice movements. Thus, the “nature” of water, like that of environmental justice and scale, is an epistemologically contested and charged terrain. Dams and other objects of water “management” systems represent and embody ideologies of progress, modernity and social control (Swyngedouw 1999), as water becomes “controlled, tamed and domesticated” (Kaika 2005:141).

These questions about water and ideology are also connected with scale in that the command over geographic and regulatory scale is itself illustrative of power. Conflicts over the “appropriate scale for organizing water systems (local, watershed, regional, national, transnational) each evoke different power geometries and may lead to radically different socioecological conditions” (Swyngedouw 2004). Competing scale definitions of particular problems associated with water shape how opponents construct their activist campaigns against water-related facilities. One example is in Native activism against a hydroelectric dam that highlighted a historically and culturally based relationship to rivers and water. In the case of the struggle of the Eeyouch (East James Bay Cree) people against the province of Quebec’s construction of the LeGrand River hydroelectric complex, Desbiens (2007) charts a “rescaling of water” and a “rescaling of the nation” in which the Eeyouch took their fight across the border to enlist allies in the United States while the Québécois sought to “downscale” the issue as a domestic negotiation. In addition to competing geographic scales are definitions of scale beyond the spatial. Loo argues, in her history of the damming of Peace River in British Columbia, that scales have “sensual, spatial, and temporal dimensions” (2007).

Our case study of environmental justice in the Delta lies at the nexus of these theoretical conversations on environmental justice and scale, and water and power. Our study of the Delta Vision process employs conceptual tools synthesized from the scale and the social movement literatures that Kurtz has termed “scale frames” (2003:894) as well as analyses of scale that are sensual, spatial and temporal. Kurtz describes scale frames as “the discursive practices that construct meaningful (and actionable) linkages between the scale at which a social problem is experienced and the scale(s) at which it could be politically addressed or resolved” (2003:894). The competing nature of scale frames in the Delta is highlighted in conflicts over defining environmental justice issues and in defining the Delta itself. By situating our case study within critical conversations on environmental justice and scale, and water and power, we simultaneously address critiques of the environmental justice movement that take the movement to task for its place-based and “militant particularism” (Harvey 1996:399). In a similar vein, Swyngedouw and Heynen (2003) and Heynen (2003) critique environmental justice scholarship for privileging local notions

of distributive justice while missing important critical analysis of capitalism that cannot be gained except at broader geographic and political scales. This critique of environmental justice as local neglects cases in which that scale is consciously chosen for its political efficacy and radical analysis. For instance, Towers (2000:25) counters Harvey's cosmopolitanism to assert that local or "tactical environments may encourage radical goals and visions". Others observe a rejection of the charge of local and reformist identities in examining environmental justice activists as movements struggle to expand both their scale of analysis and networks of solidarity to regional, national and increasingly global systems (Agyeman 2002; Pellow 2007). Likewise, Schlosberg (2007) argues that notions of environmental justice are built upon sophisticated notions and critical analyses of political injustice, often at the scale of the global. Our analysis builds upon this emergent scholarship on environmental justice movements that are attuned to these critiques of environmental justice as primarily a local and reformist frame that pays insufficient attention to the forces of capital.

Historical and Socio-Natural Formations in the Delta: 1850–1980

For thousands of years, the Delta was a place where Native American peoples made their living from the land and waters of the landscape, which also served as the source and center of cultural identity practices for these groups. A mix of freshwater rivers and saline tidal waters created a huge area of tidal marshlands, low-lying islands, floodplains, and wildlands (Thompson 1957; Wolff 2003). The Delta's large indigenous population (primarily, but not exclusively Miwok) used these resources to form a thriving material culture, but dwindled rapidly in the mid 1800s with the introduction of European explorers and their associated diseases and violent expropriation of land. The region quickly became populated with settlers and others seeking to exploit its natural resources like beaver and mink (Nash 2006). Then gold was found in a Delta tributary, the American River, in 1848, and the urgent, irrevocable re-imagination and transformation of the region and the state began.

After 1860, the spatial imaginary of the Delta landscape was disrupted and consolidated as water policy and large-scale engineering and irrigation projects helped to "win" the West and California in particular in the nineteenth century (Hundley 2001; Pisani 1984; Worster 1985). People in distant cities claimed ownership of the land and became wealthy from the productive labor of people who toiled on the land but could never own it, due to racial exclusions on land ownership targeting, at different times, Chinese, Japanese and other non-white agricultural laborers (Chan 1987). The meaning of the land was decentered from the physical place even as it took on a new meaning as a symbol of

the paradise and possibilities for the wealthy. In addition to serving as a fertile site for producing agricultural crops, irrigated with its vast supplies of surface water, the Delta soon became the center of the state's Romanesque plumbing system, the vast network of gargantuan pumps, aqueducts and canals that convey water over hundreds of miles from the northern areas to the dry and booming Central Valley and southern California. Such massive infrastructure to facilitate water transfer is a crucial element to California's "hydraulic society" (Worster 1985) and the cultivation of bureaucratic, hierarchical, and inequitable structures that such societies tend to produce. The development of water infrastructure normalizes the accessibility of water, first for urban sanitation, then for urban expansion, dual processes that some argue are central to the redistributive function of modern states (Kaika 2005:142).

Since California was ceded by Mexico under the Treaty of Guadalupe de Hidalgo and became a State in 1850, the Delta has been subjected to ever more aggressive attempts to control the hydrological and ecological processes that have shaped it for millennia, specifically the regular flooding from rain and the snowmelt from the Sierra Nevada mountains streaming in cyclic inundations onto the plain below, coursing toward the salt water estuary of the San Francisco Bay. The Delta is at the epicenter of California's large-scale engineering projects and technologies to "control nature" in McPhee's (1990) famous words. Beginning in the mid-nineteenth century, the "unruly waters" (Jones and Macdonald 2007) of the Delta had to be disciplined and made economically productive and rational. The Delta is a notoriously flood-prone system, with floods heavily damaging or destroying cities around the region (Isenberg 2006; Thompson 1957) and underscoring the unreliability of the water supply and the need for flood control (Mitchell 1996). While to early boosters the Delta represented nature's dangers to be tamed, eventually its fertile soils and easy access to abundant water, capital and markets made it an almost ideal site for agriculture. Indeed, between 1850 and 1868, federal and state legislation encouraged "reclamation" of swamplands and concentrated land ownership and wealth. The control of nature in the Delta was made possible through the labor exploitation of subjugated peoples, such as the Chinese whose labor "reclaimed" 88,000 acres of the Delta swampland for more "productive" uses by building levees and islands, dredging canals, and constructing small water projects to supply water for goods movement and drinking water for San Francisco (Arreola 1975; Chan 1987). The Delta began to resemble less a marshy, swampy wildland and more a collection of very large and productive agricultural enterprises bound by levees holding back the deluge (Wolff 2003).

For the last 80 years, the state's primary water policy objective has been to maintain the Delta as a freshwater system through water flow regulation supported by agricultural levees (Lund et al 2007). The

growing need for freshwater by surrounding irrigated agriculture in the 1930s (Mitchell 1996) synched with the economic disaster of the Great Depression. The result of this conjoining was the State Water Project, proposed in 1931, authorized by the Central Valley Act in 1933, and implemented as the Central Valley Project (CVP) by the federal government in 1935 (State Water Project 2008). What began as a flood control project was later used to provide water for agricultural and urban interests. The purpose of the State Water Project (SWP) approved in 1960 (and enacted as the Burns-Porter Act) was to provide flood control and water to urban interests, and to create a supplemental supply of fresh water that would control saltwater intrusions and compensate for diminished flows during peak water usage and north-south water transfers to southern California (Lund et al 2007; Mitchell 1996).⁸ The Central Valley Project is one part of the SWP. Funded as a Depression Era project, construction of the California Aqueduct started in 1937 and continued until 1990. The CVP provides water from Shasta and Trinity Rivers to the Central Valley agricultural fields and urban centers.

The Delta was thereby transformed in the state's spatial imaginary from an unruly and flood-prone wetland to a vast water supply transfer node and conveyance system through giant feats of engineering (Mitchell 1996). Through its transformation, the Delta became a freshwater environment, a change that has had profound effects on the region's ecosystems. The water resources of the Delta thus became valued by the state of California as the Delta became the primary water conveyance structure to enable the large-scale urbanization of southern California and to feed capital, both industrial growth in the Bay Area and the agricultural sector in the San Joaquin Valley. In other words, the technological, environmental and political history of the Delta illustrates how more than a century of water policy changed conceptualizations of geographic scales, transforming the Delta from a local ecosystem to one that could be used and exploited in larger regional and state-wide extents. Thus, through public policy, modern engineering, and discourses of economic necessity, desires both proximate and distant have reached into the Delta, gripped its waterways and soggy soils, and bent them to their liking, diverting rivers, reshaping landscapes, and altering everything from microhabitats to the very current of the water via the power of the pumping stations.

For a full century beyond California's statehood, the twin forces of the state and capital interests dominated how the Delta was perceived and managed, organized around a view of nature to be dominated and controlled and its water resources exploited. This view was first challenged in the 1960s by the ascendant environmental movement and by a whole host of federal and state legislation to protect water quality, unimpeded flow, and endangered species (Little Hoover Commission 2005; Lund et al 2007). These new laws and public dissension over

unchecked water use and disposal of natural resources halted further work on the SWP. The State Water Resources Control Board made various efforts throughout the 1970s and 1980s to require that some Delta water be used for environmental (defined as water quality) purposes; each attempt touched off a backlash of lawsuits by agricultural interests, and contention over rights to Delta flow-through intensified (Lund et al 2007). Perhaps the most incendiary of conflicts during this period was over the proposal for a “peripheral canal” as an alternative to the current water conveyance/pump system. The 1000-foot wide canal was designed to bypass the Delta, taking water from rivers in Northern California and diverting it around Sacramento directly to the San Joaquin Valley and points south. The peripheral canal was not built because a majority of California voters rejected the approval of bonds to build it in 1982. A peripheral canal has long been considered a third rail of California politics (akin to taxes), and this proposal has been recently resurrected by some interests as the only hope for balancing environmental and economic interests in the state (Lund et al 2007).

Controlling the Delta in the service of the economic growth of California depended upon particular goals of controlling nature and its risk (such as flooding) through technology and engineering. At the same time, human systems of injustice are central to this history, specifically the displacement and destruction of Native American populations and the labor exploitation of racialized populations (in both the engineering projects of Delta reclamation and the agricultural industry that emerged from its wake). These historical processes of social injustice, shifting geographic conceptions of Delta water, and environmental exploitation converged to set up the ecological conditions for its collapse. The next section examines how current policy attempts to fix the Delta—the Delta Vision process—recreate and exacerbate the very problems they aim to correct.

The Delta Vision and CALFED: Contesting the Politics of Scale, Process and Politics: 1980–2008

At a recent meeting of the Blue Ribbon Task Force (BRTF), the Delta as Place Working Group submitted a report with initial questions and recommendations about the future shape of the Delta as it concerned the residents and infrastructure in the region (28 February 2008). The Working Group proposed that the Delta be considered a mosaic of possibilities and disparate concerns rather than a uniform problem to be solved. The Working Group proposal was met with a stern admonishment from the Delta Vision leadership. The chair of the BRTF reminded the group to keep their thinking about the possible future of the Delta “rational and pragmatic”, saying that “where you wind up

is largely determined by where you start” (Delta Vision Blue Ribbon Task Force Meeting, 28 February 2008). Let us begin at this conflictive moment between the rational (and thus the implied “irrational” view) and this articulated notion that “where you wind up is largely determined by where you start”. Where do we begin to understand how to rationalize the Delta, given the complex social, ecological, technological and political histories outlined in the preceding section? What is the Delta Vision? Where did the process emerge from? Who is involved? What politics are embodied in the Delta Vision process? Whose vision is implied in the naming of the Delta Vision itself? Do the environmental, technological, social and racial histories outlined in the preceding section make it into the frame and discourse of visibility in the Delta Vision?

Delta Vision emerges from a process that extended from the late 1980s through the 1990s to “fix” the problems of the Delta. This process is known collectively as the California Bay Delta Agreement (CALFED) and is comprised of a group of 18 federal and state agencies formed in 1994 to work on long-term solutions to Delta water problems (Jacobs, Luoma and Taylor 2003). CALFED’s goals rested upon the idea that all interests in and needs for the Delta and its resources could be met without any of the main interest groups—water exporters, in-Delta users, environmental groups, agriculture—having to give up what they desired. The idea was that, “everyone would get better together” (Lund et al 2007:ix) through managing the Delta as a single unit. However, in trying to make everyone happy, no one truly was.⁹ Conflicts over multiple water uses in the Delta were aggravated by a drought that lasted from 1987 to 1992 and resulted in cuts to water for all Delta users to preserve water flows; even these cuts couldn’t stave off the listing of two Delta fish species under both federal and state endangered species laws (Lund et al 2007:ix). In 1992, Congress passed the Central Valley Project Improvement Act, which reallocated some water from the CVP to protect fish and restore ecosystems and also authorized water marketing and the sale of water among water users. This authorization of water marketing is not exceptional, but rather exemplifies the ascendant moment of neoliberalism of water management and capital in the context of privatization and deregulation in the 1990s. As Kaika (2005:154) describes in her account of water politics in London and Athens, “casting nature as a source of crisis and defining water resources as scarce provided the context in which the dominant neoliberal rhetoric and attitude towards water resource management (ie demand management through pricing) could be further applied”.

In the midst of the legislative and legal chaos around the Delta, the three-way water rivalry among agricultural, urban, and environmental interests began to subside when the groups came together in a collaborative truce. During this period, multiple federal agencies began an alliance to coordinate their management of the Delta—it was

dubbed “ClubFed” by its members. Commodification of one form of nature (water supply) at the expense of another (fish populations and ecosystem function) was theoretically balanced by mitigation activities intended to protect the natural system. For example, fish screens and mechanical movement of whole populations of juvenile fish was carried out in order to reduce harm to endangered species caused by the massive hydraulic pumps. Furthermore, those deemed “third parties” without a direct economic or political standing (eg the low-income and communities of color effected by the management decisions) had little to no representation in the process (for a view of environmental justice under CALFED, see Shilling, London and Liévanos forthcoming A). Since the signing of the CALFED Record of Decision in 1996, the Delta has fallen into further disrepair, its fisheries are failing, its native species being pushed out by invasive species, its levees crumbling, and its water quality diminishing. Although there is no causal connection between these collapses and the existence of CALFED, neither is there evidence of improvement. Disagreement among interest groups over causes of these failures came to a head in 2004 and 2005 with legislative budget cuts, gubernatorial audits of CALFED’s governing and financing structures, lawsuits by environmental groups, and Hurricane Katrina, which called into serious question the safety of Delta levees (Little Hoover Commission 2005; Lund et al 2007). Finally, the withdrawal of Federal agency funding and participation has pulled apart the Cal and Fed components leaving the state agencies alone to collaborate among themselves and with environmental interests.

CALFED made little headway and is being bypassed by combatants in the water wars, primarily Delta Vision. During the 2005–2006 California legislative session, two bills (along with an executive order) were passed and signed by Governor Arnold Schwarzenegger to deal with the failure of state and federal governments to improve Delta conditions. These actions required a strategic Delta Vision and the creation of a comprehensive Delta plan, facilitated by the BRTF.¹⁰ According to their website, the mission of the Delta Vision is to “identify a strategy for managing the Sacramento–San Joaquin Delta as a sustainable ecosystem that would continue to support environmental and economic functions that are critical to the people of California” (Delta Vision 2008). The BRTF is advised by four working groups, which focus on how to plan in the context of the “co-equal” goals of the Delta Vision. They are: Delta as Place, Water, Governance/Financing and Estuarine Ecosystem. This Task Force created a “durable vision for the sustainable management of the Delta” that was delivered by the Task Force to the Governor in January 2008, with a strategic plan that is to be delivered by November 2008 (BRTF 2008).

To examine the environmental justice implications of this “vision” we will begin with a seemingly simply, yet incredibly vexed question:

what is the scale of the Delta embedded within Delta Vision, and how does the Delta Vision process and its preferred choice of regulatory and geography scale exacerbate environmental and social injustice? To clarify the multiple scales at play, we draw upon Kurtz's (2003) description of three scale frames adopted by environmental justice activists in a particular struggle against a proposal to site a controversial polyvinylchloride production facility in Louisiana. In her formulation, the local environmental justice movement use what she calls "scale-oriented collective action frames". She defines three discursive and political constructions of geographic scale: scale of regulation; scale that legitimates inclusion and exclusion in political debates; and scale as analytical category of academic and bureaucratic projects. Thus, following Kurtz, we trace how these scale frames are mobilized in our case.

Scale Frame 1: Scales of Regulation: Defining and Regulating the Delta

Scales of regulation are domains for spatial practices such as the setting and operation of jurisdictional boundaries, through which the state incorporates and regulates the Delta. The Delta Vision comes out of a history of state attempts to regulate and manage the Delta for interests at the state level, a particular geographic, regulatory and political position. In 1959, the California Legislature passed the Delta Protection Act, setting the legal boundaries of the Delta (Figure 1) and requiring future engineering efforts and water appropriations to consider the water quality of the Delta in order to maintain the viability of agriculture within it (Lund et al 2007). This spatial bounding of the Delta in 1959 in legal terms has significant regulatory and political impacts.

The Delta Vision process builds in scale conflict most clearly between the question of whether the Delta is a site through which natural resources flow, in this case water, or whether it is an integral and valued ecological and social unit *itself*. Though the scale at which problems are defined and solutions for them are sought has been ostensibly the legally defined Delta, in reality and for decades, the problems and potential regulatory solutions extend well outside this spatial extent. In addition to the Legal Delta, the Delta can also be understood through wider geographic contexts, such as ecosystems that interact with the Delta including the Sierra Nevada, Northern Coast Ranges, and areas that receive Delta Water in the Delta "solution area" (Figure 2). Although state regulatory processes such as Delta Vision and its predecessor, CALFED, have acknowledged the presence of these broader geographic areas, these processes have focused on the Delta itself and its immediate tributaries without supporting or coordinating with activities in the broader areas (BDPAC 2007; Little

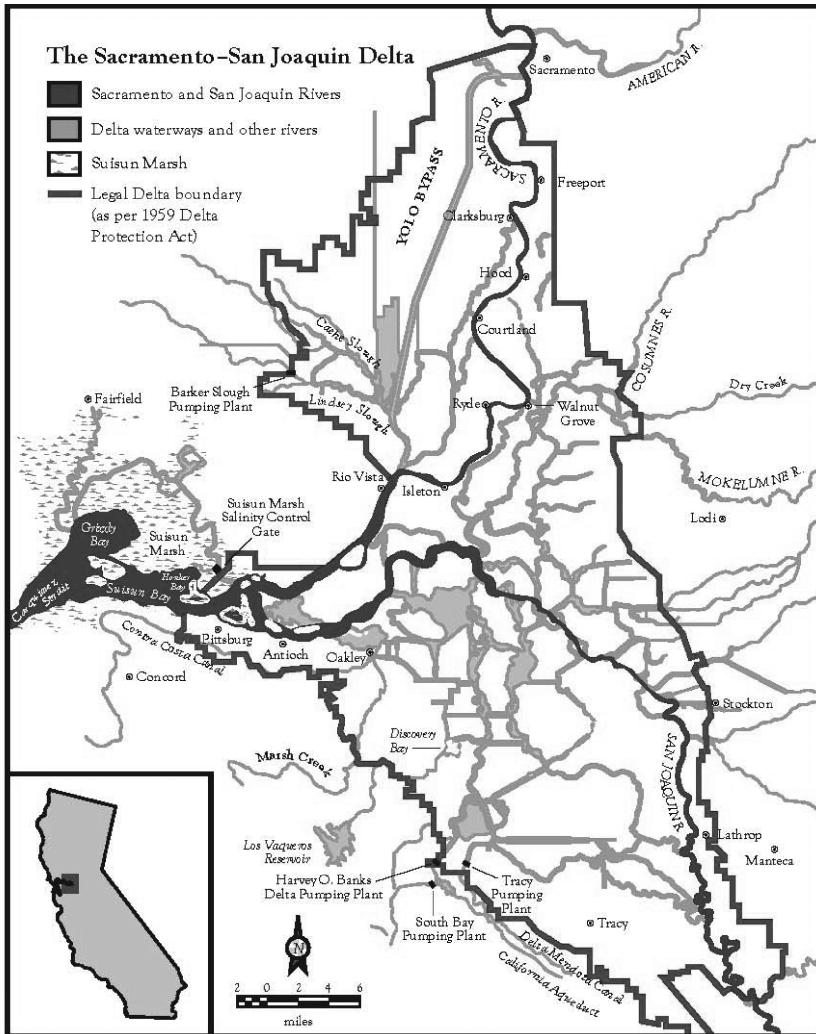


Figure 1: Sacramento-San Joaquin Delta (inset: Delta region within the State of California, from Lund et al 2007) (source: map by Janice Fong, UC Davis Geology Department)

Hoover Commission 2005). By focusing attention on the Delta and its immediate tributaries for mitigation solutions, the state obscures and avoids conflicts at the broader scale of the water source and use areas. This choice of the more legal Delta as the scale of regulation ensures that certain mitigation decisions render the sources of pollution and scales of water consumption, extraction and usage irrelevant and illegible to the process. In reality, however, they are central to understanding and solving of the problems within the Delta ecosystem.

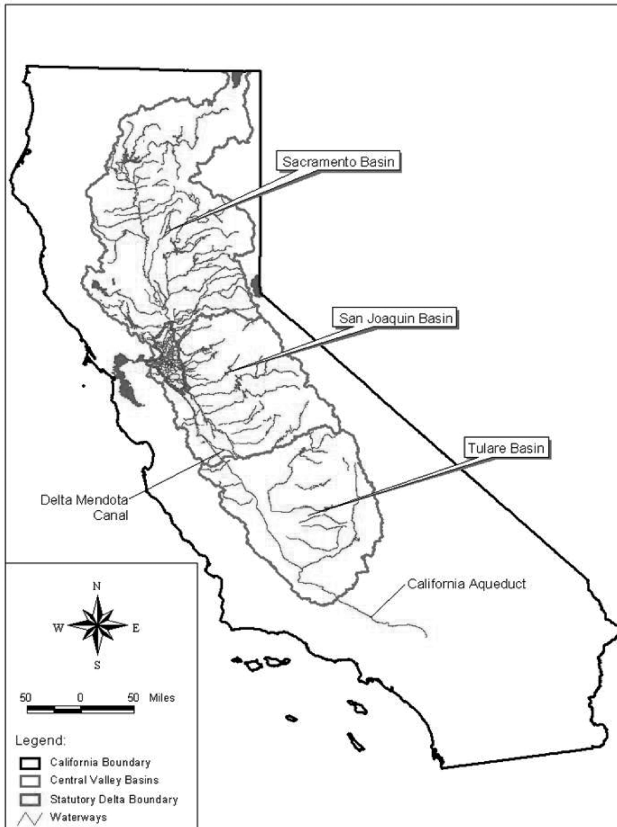


Figure 2: Watersheds and major waterways leading to the Delta (source: State Water Resources Control Board)

For the Delta Vision process, as with CALFED, the choice of the Delta as a regional unit of analysis is the political and geographical construct through which decision-making is intended to “flow”. The legal problems were identified at the scale of the Delta (e.g. declining fish populations) and water being conveyed through the Delta. A technocratic and scientific core of institutions developed around this ideological construct, including regional scientific conferences, a scientific journal, and multi-million dollar studies and ecological restoration projects (including land acquisitions and restoration along the Sacramento River riparian corridor, on specific Delta islands, and water acquisitions to benefit fish; see BDPAC 2007). Some of the more complicated environmental problems requiring investigation (eg agricultural intake and discharge effects on aquatic life) remained the least analyzed and received minimal financial resources from the state for study, arguably because the scale of regulation limits the Delta to its legal boundaries.¹¹

Scale Frame 2: Scales of Inclusion/Exclusion

One of the central features of the Delta's history as a socio-natural space is its embodiment of the conflict between the state-building apparatus for capital development, and its status as a functioning and vital ecosystem, whose natural cycles (like flooding) are inconvenient and physically dangerous to cities and threatening to the imperatives of state and capital. This contradiction between the Delta's social purpose (to supply industrial agriculture and urban water users) and the Delta's ecosystem functions is reflected in the Delta Vision mission statement. According to the overview on the Delta Vision website, the process is aimed to "identify a strategy for managing the Sacramento–San Joaquin Delta as a sustainable ecosystem that would continue to support environmental and economic functions that are critical to the people of California" (Delta Vision 2008). Thus, the goals are to manage the Delta as a sustainable ecosystem (a local, place-based construct), and second, to support environmental and economic functions critical to the people of California (a statewide political construct). In our analysis of the Delta Vision process, however, we find numerous examples of how the statewide political interests hold far more weight than the local, place-based analyses.

For instance, the assumption by the BRTF is not that the local does not matter but that it only matters as a place for mitigating impacts of water management—it is not seen as a place for decision-making. According to the public discussions of the BRTF, the Delta and its massive ecological and infrastructural issues must be dealt with by agents acting on a regional and state level and regulatory scales, especially in the face of climate change, if the "co-equal goals" of ecosystem protection and water supply are to be met. In a recent public meeting the chairman of the Task Force said, "the co-equal goals will become measures of future efforts, even if it's not what people in the Delta would wish". In other words, the local view is not important to consider in decision-making. To further emphasize this view of the local, the Chair said, "the Delta as Place Working Group must look at the whole vision from the state perspective, which is not a comfortable way for Delta interests to start" (Delta Vision BRTF 28 February 2008). The Task Force chairman views the Delta Vision process from the scale of regulation of the state of California. This view of the state as the appropriate and preferred scale of regulation creates conditions of relative inclusion and exclusion in the political process, with interests deemed as "special" (ie local) being marginalized relative to more abstract interests of the state and the ecosystem itself. This view of the state scale of regulation is the dominant perspective adopted by the Task Force in creating a strategic plan that foregrounds maintaining water for economic uses for agriculture and for water transfer. In other words, the BRTF suggests that the Delta should

be a placeless space that fulfills the twin goals of ecosystem health within the Delta and water “for the people” outside the Delta proper. The dual narratives of state building and “the-good-of-the-people” (abstracted as non-local citizens of the state) is repeatedly invoked throughout the Delta Vision Process. These narratives are reinforced by major regional scientific bodies, exemplified by a recent report (Lund et al 2007), which describes the parameters to consider when choosing management and restoration options for a future Delta. These parameters include: “flooding, predicted sea level rise; water quality and the recognition that the new ecosystem will be a different ecosystem than the one we currently have. This means that there is a unique opportunity to rebuild the ecosystem into one with attributes that society decides are desirable. By recognizing that the ecosystem will undergo major change with or without human intervention, it is possible to capitalize” on the opportunity of the Delta decision-making process in response to the crisis in the Delta (Lund et al 2007:56).

The Delta as Place Working Group is, by accident more than design, the work group where all issues that do not fit into the other more politically powerful work groups (Water, Governance/Financing and Estuarine Ecosystem) are allocated, however awkwardly. Thus, the wide-ranging topics addressed by the Working Group include: land use and infrastructure; levees and flood plains; emergency management and response; recreation and tourism; and transportation and utilities. Despite this agglomeration of issues, the Delta as Place Working Group has attempted to conceptualize the variations in needs, cultures, and landscapes within the Delta in order to come up with a plan that will forward the desires of in-Delta interests (Delta Vision BRTF 28 February 2008). The Working Group allows for discussion of the Delta as a spatial patchwork of possibilities in flux. This allowance of flux acknowledges ecological and cultural variability and contrasts squarely with the politics and ideology of the BRTF writ large. The BRTF embodies a state-scale of regulation approach that frames a more abstracted problem needing a more across the board and aggressive response, especially in advocating engineering solutions, and through a relatively closed political process.¹² The Delta as Place Working Group also imagines the Delta in a different temporal scale than the BRTF. The Working Group discusses and makes legible the immediate and longer-term impacts on the actual people who live in the Delta. They have invoked the narrative of the “working landscape” as a way to construct their own Vision for the Delta, as well as proposing several regional governance structures to deal with the varied needs of the southern, central, and northern Delta’s islands and unique ecologies and communities. In contrast, the BRTF, and its state-scale of regulation approach, desires predictability, consistency and control, a view of

nature, places and people at odds with the Delta as a dynamic ecosystem or a place where humans matter and where social and environmental injustice take place.

This discursive conflict between the local and the state is how the construction of geographic scale maps the scale of inclusion/exclusion onto the political process. In other words, local interests are constructed as parochial, short sighted, and irrational, whereas advocates for the state are considered to be acting for the abstract good, rather than in the service of capital and large water users (agriculture and urban water districts). What then becomes of Kurtz's scale frame of scales of inclusion/exclusion, and the question of environmental justice itself? While the Delta as Place Working Group does not explicitly invoke environmental justice in its mandate or its vision, its focus on broadening the bounds of the Delta geographically and epistemologically, as well as their sensitivity to spatial/temporal variability and the dynamics of inclusion and exclusion, offers an implicit conceptualization of environmental justice in the Delta. It is to this contested representation of environmental justice in the Delta that we now turn.

Scale Frame 3: Scale as an Analytic Category: Defining Environmental Justice in the Delta

Recent literature has disputed whether environmental justice movements and the academic evaluations in the literature are politically reformist rather than radically transformative. As Schlosberg (2004:518) points out, distributive justice ignores "the social, cultural and symbolic, and institutional conditions underlying poor distributions in the first place". Distributive justice, a central element of environmental justice claims, limits the possibility of radical confrontation in that environmental justice discourse can serve to promote the distribution of resources in a way that creates a veil of appeasement among those with limited access to the distributed resources. The claim for fair distribution suggests that if everyone receives equal access to the distribution of resources in a society, justice is achieved, thus eliminating conflict over resources themselves. In addition to the focus on distributive justice, the environmental justice movement has emphasized a procedural sense of justice, claiming representational space in the political and policymaking arena and the right to "speak for ourselves" (Cole and Foster 2001). To these questions of distributive and procedural justice, Schlosberg adds that "recognition" of diverse cultural identities in a critical pluralism is a pre-condition for entry into the distributional system and ought to be considered a third definition of justice in environmental justice.

Questions about the nature of environmental justice claims include theoretical questions taken up by critics of environmental justice

movements (Harvey 1996; Swyngedouw and Heynen 2003) who consider environmental justice to represent reformist and primarily local claims. However, environmental justice analyses of the Delta are not necessarily politically reformist, narrow, or geographically local. This critique of environmental justice is echoed by the Delta Vision BRTF, which framed the local—and, by extension, environmental justice—as a narrow and parochial “special interest”. During the final stakeholder meeting for the Delta Visioning process, for example, when questioned about the lack of mention of environmental justice principles or goals in the final Delta Vision product, the executive director of the BRTF said that it was the decision of the Task Force not to include “technical or special language” from any stakeholder group in the final Vision (Delta Vision Stakeholder Coordination Group Meeting 17 December 2007). This interpretation of community needs and environmental justice issues as “special interests” particular only to *them* downgrades the scale of their argument from the accepted state/Delta scale to the merely local. Environmental justice has been relegated to a small and—in the eyes of the decision-makers—a “special case”, therefore, non-includable entity in the Delta Vision (Water Education Foundation Delta Vision Workshop 7 March 2008).

What exactly are these environmental justice issues and communities in the Delta? Like the seemingly simple, but exceedingly complex nature of the Delta, environmental justice is a highly contested term. There are at least three interconnected levels at play, although the last is the least understood: the policy/legal, the activist, and the theoretical, in the view of socio-nature (which we analyze in the next section on the socionatural Delta and environmental justice).

First, California has a number of state laws that explicitly define environmental justice (London, Sze and Liévanos 2008). By these policy measures, the Delta Vision’s characterization of the requirements for the Vision likely violate state law requiring that state agencies act to prevent disparities in harm and to facilitate participation of affected parties in decision-making. This interpretation of what is required of the state ignores the Record of Decision (ROD) that theoretically provides the state with the legal right to cause harm to the Delta. In the ROD, the state must include environmental justice concerns and communities as defined in state law in implementation of all CALFED program plans.

Second, activist conceptions of environmental justice in the Delta have been highlighted by advocacy organizations such as the Environmental Justice Coalition for Water along with other environmental justice groups. These problems include higher than average rates of mercury contamination in Southeast Asian and other racial minority communities (related to consumption of local fishes), and access to poor-quality water in farmworker communities as the result of pesticide runoff, and limited in-community water infrastructure.

Large percentages of Southeast Asian refugee populations living in and around the Delta face elevated mercury contamination risk (a legacy of the state's gold mining practices), as a result of subsistence fishing practices that lead to their high rates of fish consumption from the polluted rivers (Shilling, White and Lippert forthcoming; Silver et al 2007). Advocates such as the Community Water Center (2008) highlight the cruel irony of poor water quality and lack of water infrastructure in poor, primarily Latino rural communities. In other words, clean water comes through the California Aqueduct to feed the thirsty fields of industrial agriculture, bypassing farmworker communities who drink from water contaminated by nitrates and pesticides [Environmental Justice Coalition for Water (EJCW) 2005]. As one environmental justice advocate identified:

you've got these canals with pristine Delta water flowing through them, and literally they're 100 feet from a drinking water well that's supplying communities with nitrate-laden drinking water. So there, these communities don't have safe drinking water while this great water is literally flowing along through their backyards (interview 28 July 2008).

In response to these problems, a number of organizations have engaged in a range of activities, from protests, to educational forums. On the issue of mercury contamination, a number of events were organized by groups. For example, in 2008, community meetings composed of the Lao, Mien, Hmong and Russian communities were held. These meetings were translated into Lao, Hmong, Mien, and Russian and consisted of exchanges of technical information and concerns about environmental contamination among academic, community organizations, and community members (see Figure 3).



Figure 3: Sacramento community meeting, 2008 (source: photo by Fraser Shilling)

The EJCW is the organization that has most consistently tracked environmental justice with respect to water policy in California. The EJCW is a network of more than 50 grassroots and intermediary organizations that helps to “empower people to advocate for water justice in their own communities and assures policy makers listen to the concerns of those local community members” (2008). The EJCW membership ranges across California and is not solely devoted to matters within the Delta. It is not a local in-Delta organization, and it is, therefore, an example of the “scaling up” of environmental justice advocacy to a regional and state-wide basis. The EJCW defines “environmental justice communities”, as exhibiting at least two of the following three criteria: economically disadvantaged; disproportionately composed of people of color (defined as higher proportion of color than state percentages); and disproportionately impacted by environmental hazards.¹³ The EJCW also articulates their work through a frame of “water justice”, which they define as “the ability of all communities to access safe, affordable water for drinking, fishing, recreational and cultural uses”.¹⁴

The EJCW has been publicly critical of the Delta Vision process, and what it calls in a letter to the task Force, its “ill-conceived notion of environmental justice in Delta Vision deliberations”, which essentially ignores the existing state legislation governing environmental justice, specifically the legal language and moral responsibility to protect socially vulnerable and environmentally overburdened communities.¹⁵ At the same time, the EJCW has continued to be engaged with the process, primarily around educating others about how environmental justice is not just a narrow set of issues (or “special interest”), but a cross-cutting analytic framework that should be incorporated across the Delta Vision process. The 2 September 2008 EJCW letter to Delta Vision makes a number of recommendations for an environmentally just Delta Vision, including: disciplinary and credential diversification within the Delta science program; increasing disaster preparedness and enhanced flood protection for socially vulnerable and environmentally overburdened communities; democratization of Californian water for socially vulnerable and environmentally overburdened communities; ensuring that water supply quality and reliability is carried out to provide safe, affordable water for drinking, subsistence, cultural, and recreational uses for California communities; promoting just and sustainable local and state economies and land uses within the Delta that are connected to vital drinking water sources throughout the state.

In sharp contrast to the Delta Vision process and its rejection of local and/or so-called special interests, the EJCW conducted its own research project on environmental justice in the Delta, which culminated in a 2009 report entitled “Third parties no more: Envisioning an

environmentally just and sustainable Sacramento–San Joaquin Delta” (Liévanos et al 2009).¹⁶ The report focused on the socially vulnerable and environmentally overburdened communities that the Delta Vision ignores, specifically highlighting the plight of racial minorities and economically disfranchised communities. It addresses the potentially disproportionate impact of flooding and other hazards and their differential impact on socially vulnerable populations (Cutter 1996; Cutter, Boruff and Shirley 2003).¹⁷ The report exposes the power dynamics of the Delta Vision process itself and how it disregards the concerns of low-income communities and communities of color, including fears about loss of land and community. It also reports how these same communities have had to pay inequitable fees for levee restoration and flood protection, to drink potentially compromised drinking sources, and to fish for subsistence in contaminated waters (pollution legacies from point and nonpoint polluting sources). For some of the indigenous populations of the Delta, the pollution, water diversions, and land development in the region have reportedly exterminated or seriously degraded the materials they use for traditional medicines and basket weaving. In terms of procedural justice, these communities have had little to no public input into the decisions giving rise to these conditions due to the history of backdoor deals in water governance and current biases towards sporadic town hall meetings and often English-only, internet-based modes of information dissemination.¹⁸

The specific realities of Native populations are a particularly poignant example of how the politics of distributive and procedural justice and cultural recognition are intertwined, yet deliberately excluded from the state scale of regulation through the Delta Vision process. As one representative from an environmental justice organization explained, because of the history of the California Water Project:

dams and diversions have depleted the salmon populations that are the lifeblood of tribal, headwater communities. Those people really suffer. Some of the coastal streams are talked a lot about, but in the Bay-Delta system, they are not talked about. Those people feel they won’t heal until the river is healed” (interview 2 July 2008).

Another interviewee from an environmental organization concurred that:

north of the Delta, there are tribal impacts, as well as other impacts, when the Trinity River is diverted into the Delta. That has huge impacts on the Hupa tribe, and the Shasta Reservoir has significant impacts on the Winnemem Wintu that don’t even have recognition anymore most likely because of their proximity to the Shasta Reservoir (interview 8 July 2008).

The Winnemem Wintu have lived in a valley where four rivers meet, and have fished and farmed for centuries at the confluence of these rivers. Much of the tribe's ancestral land in Northern California was submerged when the federal government built a 602-ft dam downstream of their ceremonial and prayer grounds in 1945, with the rest facing inundation if a proposed US Bureau of Reclamation to enlarge Shasta Dam as a way to boost California's water supply is approved (Egelko 2008). Indeed, the comprehensive study plan covering raising Shasta Dam and inundating the historical and sacred lands of the Winnemem Wintu provides just two sentences to describe the ability of the tribe to provide input, but no official recognition that the lands or tribe will be impacted (US Bureau of Reclamation 2007).

In addition to Native concerns (which are arguably distinct from environmental justice frameworks because of the unique history and land sovereignty issues), questions about the existence of environmental justice communities, and exactly where they are located in the Delta are complex affairs. In both the Delta Vision process and our supplemental interviews, particular towns or neighborhoods did not come up as having specific environmental justice issues. Rather than being place-based or local communities, "environmental justice" instead seemed to be loosely defined by interest or issue groups who depend on the Delta for economic and/or cultural purposes. These everyday populations include migratory and settled agricultural laborers; people dealing with poor water quality or disparities in water deliveries; groups facing a loss of heritage due to regional policymaking; subsistence fisher groups whose food sources are diminishing due to ecosystem collapse or poisoning by mercury and other toxins; people living in urban-fringe and in-Delta areas that face the real possibility of inundation due to sea level rise, seasonal flooding, or levee failure, and who are at greater risk because of uncoordinated emergency planning efforts by counties and municipalities; and people who must deal with poverty and economic underdevelopment because of skewed land-use priorities (Fielding and Burningham 2005). In other words, environmental justice is not a specific group of people or discrete pollution sources, but a framework of analysis, grounded on articulating the connections between racial and social injustice with ecological problems.

During the Delta Vision Process in 2007–2008, environmental justice advocates had a small but earnest trio of representatives at the Stakeholder Coordination Group decision-making table. According to one of these individuals, the group did their best to educate the rest of the assembled stakeholders (including mainstream environmental groups, recreation groups, in-Delta town leaders, water exporters, agricultural groups, and Southern California water importers) about the immediacy and relevance of environmental justice issues to every other issue

brought into the discussion. One of our informants felt that the trio of environmental justice advocates had begun to make significant inroads into alliance building with formerly hostile stakeholders, although their success in persuading the BRTF was minimal (interview 28 July 2008). During the Delta Visioning process, in which 43 officially recognized stakeholders were allowed to collectively create their own vision for the Delta, a document was produced to elucidate their vision. Some of it was eventually incorporated into the BRTF's Official Vision document (Delta Vision Stakeholder Coordination Group 2007), but the amount of attention their vision was given is subject to interpretation. In addition, individual organizations submitted their input, under the rubric of "External Visions".

In this context, the EJCW articulated their "Environmental Justice Vision" for the Delta (EJCW 2008). This Vision included key procedural justice elements, such as enhanced capacity for participation in the process, incorporation of "meaningful stakeholder engagement", identification and correction of data gaps relevant to communities, and a requirement that decisions made with inconclusive data be made reversible and provisional. Their Vision also included provisions for adequate drinking water quality and supply for all state residents and for removing methylated mercury, which poisons fish and adversely affects subsistence fishers. Environmental justice advocated consideration of the needs of low-income Delta residents: during processes of land-use change their property would not lose value or be irrevocably lost in emergency situations; environmental justice communities would not be disproportionately affected by increased flooding risk due to land-use changes; and emergency response mechanisms would be in place. It stated that disadvantaged communities should have access to economic development opportunities and that adverse economic impacts due to the loss of the Delta's agricultural base should be considered. The environmental justice vision also recognized the impacts of upstream flood and flow control on the health of the Delta. Finally, it also called for adequate flows of water and future flexible responses to maintain Delta ecosystem health, and the importance of processes besides flow on the health of the Delta. In short, an environmentally just Delta Vision, according to EJCW and other environmental justice activists, would include means to address distributive and procedural injustices as well as ways to incorporate cultural recognition into the planning and governance processes. Cultural recognition incorporates the worldviews and histories of disenfranchised and subaltern populations, and the history and cultural practices of Native populations in the Delta. The EJCW Vision used both "narrow" scales of community and individuals and "broad" scales of ecosystem, economy, and emergency management to construct a comprehensive, but specific list of the needs and concerns that the Delta Vision might address.

Environmental Justice and Socio-nature in the Delta

Environmental justice advocates within the Delta Vision process were marginalized. Despite this, their collective efforts represent some of the most vigorous efforts within the process to take human populations seriously and from a standpoint that is not in the service of capital and the state (agricultural and urban water interests). Environmental justice advocates attempted to reconstruct the framework in which the stakeholders were placed as something fluid, shared, and truly collaborative. This can be construed as an attempt by a marginal perspective to claim the center of discourse and policymaking. Nearly every group participating in the Delta Vision process referred to it as “Delta Vision”, discursively denoting a single “vision” even if in their minds they had constructed their own narratives about the region’s utility, meaning, history, and best future uses. In our fieldwork and interviews, only one respondent, a member of the environmental justice advocate group, repeatedly invoked the process as the “Delta Visions”, thereby acknowledging the simultaneity and possible confluence of all the groups’ desires. Environmental justice advocates best articulate the need for these “multiple visions” because of their discursive focus on interconnections, with a strong focus on socially vulnerable and racial minority populations (Cole and Foster 2001). That is, environmental justice analysis, as a political script, parallels the critique of socio-nature, which rejects the formulation of the society–nature or technology–nature dualism. But, because of the structure of the Delta Vision process, environmental justice is primarily articulated by activists pressing the state to fulfill its statutory obligations for addressing environmental justice, which are still reformist rather than radical. This tension between the reformist and the radical is yet another example of Audre Lorde’s poignant question as to whether the master’s tools (in this case, the Delta Vision process in particular, and regulatory action more generally) can dismantle the master’s house or, in this case, water networks. For example, the EJCW focuses primarily on disparities in access and quality, not exclusion from and lack of ownership of the decision-making process about water. Even the EJCW view of the Delta does not incorporate a theoretical view of the Delta based on a socio-natural critique. That said, environmental justice analyses in the Delta, primarily (but not exclusively) represented through the EJCW report, suggest that discourses of justice can complicate and potentially be a policymaking process by highlighting the power of the state and of capital to exacerbate conditions of social injustice that have ecological effects in the Delta, primarily through telling different stories.

This articulation of the possibility of multiple visions challenges the political fictions that underwrite the script of the Delta Vision: that co-equal and separate domains of economic and ecosystem exist, and that there is a single vision that would enable both to thrive. In

reality, economic and ecosystem functions are thoroughly embedded within one another, in a complicated agglomeration of socio-natural and techno-natural spaces. This critique is especially needed in light of the re-emergence of large-scale engineering solutions, particularly the Peripheral Canal, as solutions for the problems that past engineering infrastructure helped to create.

Any future action in the Delta that ignores the environmental history of the region, and the critique that engineering solutions have created many of the problems in the Delta, will probably lead to a costly repetition of past failures. Engineering solutions depend upon economic and utilitarian analyses that are deeply ideological, even if understood by their practitioners and advocates to be apolitical. One academic scientist we interviewed understood environmental justice in these terms:

If you do not choose the Peripheral Canal, pretty much everybody else loses...the biggest hit goes to the San Joaquin Valley [agriculture]... with the biggest impact onto essentially poor working, the impact on the poor, over 100,000 [jobs] (interview 5 August 2008).

In other words, in his estimation, unless water supply to industrial agriculture is stabilized, the loss to farm labor was the main environmental justice problem. Similarly, another university engineer conflated environmental justice with economic concerns, and dismissed health concerns about water quality as largely “unsubstantiated” (interview 21 August 2008).

In our analysis of the Delta Vision process, there are several dominant assumptions: history does not matter to public policy; economic impacts are distinct from the ecosystem (which humans do not inhabit); and any local scale or discursive frame of environmental justice is seen as “political” and suspect. In contrast, the state scale of regulation is seen as effectively possessing a sufficiently broad geographic and regulatory scope to “fix” the Delta. These assumptions also ignore the notion that, just as we create socio-nature in the form of the Delta, the Delta also influences. Here, the literature of socio- and techno-natures is particularly useful. This perspective highlights how people, places and things are technologically mediated, produced, enacted, and contested (White and Wilbert 2009). In sharp contrast to the Delta Vision process, we see the Delta as a hybrid waterscape of socio-natural production (Swyngedouw 1999). The lens of “socio-nature” allows us to illuminate the politics of the Delta’s transformations. In apprehending the Delta as a hybrid socio-nature we have attempted to present a vision of the Delta that highlights the ways in which the control of water is bound up in the control of human populations and economic processes, and how such control is central to the modernization project of the state. Drawing on Robbins (2007) we suggest that the agency of non-human nature, expressed by its unruly and inconvenient floods, species

movement, and feedback loops is an integral part of this socio-natural production. We defetishize the human labor that invested itself in this production. That means excavating the efforts of the Chinese laborers who built the Delta's levees, highlighting the lives of the agricultural laborers that worked the Delta's soils, and who now increasingly build sprawling suburbs where orchards and row crops once reigned supreme. It is in this everyday Delta, this historical Delta of lived experiences where the abstractions of the Delta as an ecosystem and Delta as an economic engine fall away and a more complex reality emerges. It is here that a vision of an environmentally just Delta can begin to be articulated.

Conclusion: Imagining Ecological and Environmental Justice in the Delta

Overall, our research shows that the master narrative currently coalescing around the Delta Vision suggests that there is no way to incorporate people into the state-sanctioned vision of what the Delta should be without compromising the goals of that vision—the co-equal goals of undertaking economic development and maintaining ecosystem functions. Local people within the system are a “distraction”, to borrow the language of one of our respondents (interview 5 2008). They both (people in general and racial minorities in particular) make it harder to recommend and embark upon desired courses of action because they add messiness and contentiousness to the process, as does injecting considerations of justice. If they and their issues are recognized, they will demand to be included, to have their concerns met, to have representation, to receive equal consideration, and to work towards justice—all of which are protected by a number of state and federal law and executive orders (London, Sze and Liévanos 2008).

Our findings are that the populations and communities in the Delta, who themselves possess little political or economic power but who bear the brunt of a number of (state-sanctioned and state-caused) problems, are largely excluded from regional decision-making processes in the institutionalized policymaking arena (as in the Delta Vision) and in efforts to combine science—defined in particular ways and by particular people—with policymaking. The Delta Vision process has, by seeking to “balance” the co-equal goals of protecting the Delta as an ecosystem and the Delta as a water conveyance mechanism posited these elements as separate, and thus irreconcilable. Therefore, in the very formulation of the problem lies the obstacle to its resolution. Furthermore, by taking up the entire space of the policy debates, these two goals have restricted questions of social equity and environmental justice to a small part in the drama and incarcerated them in a parochial rendition of the local. Indeed, even the potentially liberatory discourses of environmental

justice are consigned to the narrow view. There is no space, therefore, for a radical critique of the ways in which the “nature” of the Delta has been transformed by social, economic, and political systems far outside its boundaries; how the scaling and representations of the Delta in public policies designed to “save” it reflect these dominant interests; and how the framing of the Delta within these policies erases or negates the voice and interests of subaltern populations inside and outside the region.

These results are not unique to California’s water planning processes; however, they are significant, in part, because of how they impinge upon the public image California has constructed for itself—a place of liberal and inclusive ideals, a state where all are welcome to create and indulge in the opportunities that abound within its borders. While the state weaves a story about the importance of the Delta as being “indispensable to a modern California” (BRTF 2008:3), it excludes many of those it purports to welcome from participating as modern citizens. This research offers a reminder of the mechanisms in the state’s employ that allow it to protect its economic interests. These include using the politics and narratives of scale to make invisible the localities that are most useful to the state as resources for, or drivers of, industry and profit, and the populations living in those localities who might offer counter hegemonic claims and counter narratives that, if allowed to enter the public discourse, might displace the state’s claim upon the resources it desires (Desbiens 2007). In many ways, the state has effectively separated itself from the interests of the people, as expressed by the people themselves, instead aligning itself with a conceptual framework of agricultural and urban water needs, as expressed by water agencies. The Delta as a highly constructed socio-nature has become integral to the collective vision that the state has created for itself and, by extension, for the entire population of California. Without maintaining control over the Delta and its future material and narrative constructions, the state faces losing its own identity as a modern force for progress, industry, agriculture, and urbanization. Therefore, it may be imperative for the state to construct the “population” served by the Delta Vision process (and therefore benefiting from an “improved” export system and ecosystem) as the collective body of all the state’s residents, rather than as individual groups with conflicting needs and desires. Constructing them as irrational, illegal, or illegitimate, as the state has done to the north-of-Delta tribe, the Winnemem Wintu, allows the state to maintain control over the conversation about who is a legitimate stakeholder in this grand, modern re-engineering water project that is the Delta Vision.

The cultural and ecological discourses employed by the Delta as Place Working Group and the EJCW, or by Native American tribes who experience the Delta through cultural practice, counter the Task Force’s choice of scale or view of nature. Each is seen by the state and capital, through the Delta Vision process, as obstructionist. These discourses

are not seen as adding texture and nuance to a plan that will shape the future of all in-Delta residents; they bring the rest of the state's notice and concern to the Delta's resilience and longevity. The Delta Vision process very consciously builds in scale conflict, ignores different visions of justice, and depends upon views of nature that, as befitting its larger ideological underpinnings, are in the service of the state and capital. Intentionally inappropriate scales of scientific study and managed solutions have led to massive disconnects between the semblance of public process and the actuality of water management decisions.

Water management in California, the Central Valley, and the Delta has suffered from decades of control by forces opaque to the public in whose name many decisions are made. The structures of governance, alongside commodification of nature and extraction of water, have brought the ecosystem to the brink of collapse. Historical and contemporary water management policy in the Delta and throughout California ignores cultural experience, perspectives and insights of ecological sciences, and is profoundly ahistorical. Instead, an ecologically just Delta planning process might imagine and re-envision the region as actively connecting and re-connecting with people, place and water, at complex and diverse geographic and temporal scales. It would also recognize multiple forms of knowledge, acknowledge the socio-natural dimensions of the Delta rather than treat the economic and ecological dimensions as separate, view the Delta as a problem to be solved, and no longer dismiss alternative views of Delta planning as "special interest", while the broader scale of decision-making is represented as rational, rather than itself interested in protecting the forces of state and capital.

In other words, environmental justice and scale *do* matter in the Delta in rather complex and profound ways. Environmental justice in the Delta necessitates an understanding of the interconnections between distributive injustice, procedural factors, and the politics of cultural recognition, and an understanding of space and scale as geographic, sensual and temporal. This approach is a radically different approach than the status quo in which the state characterizes the needs and desires of socially vulnerable populations in California as local and parochial at the same time as advocating forcefully for capital and urban interests. In summary, an ecologically just process of decision-making for water in the Delta would: include in all scales of decision-making the human communities impacted by delivering water (from source areas), conveying water (through the Delta), and using water (in urban and agricultural areas); redistribute power over water management to non-traditional stakeholders, including those representing natural systems; distribute the entire costs of conserving water, conveying water, and mitigating the impacts of water management to those who have benefited fiscally; eliminate the decision-making bodies and processes that have to date led to the conflicts and impacts over water in

California, as described here and in previous studies; and set as a goal, both an ecologically restored Delta and watershed, and restoration of connections between people, places, and water.

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Endnotes

¹ From <http://deltavision.ca.gov/AboutDeltaVision.shtml>

² Acre-feet is a measure of water volume. It is the amount of water needed to cover an acre of land to the depth of one foot. 1 acre-foot = 325,851 US liquid gallons.

³ In probing the connections between science and Delta policymaking, we chose to conduct interviews both with people involved directly in the Delta Vision process and with people involved with organizations associated tangentially with Delta-related environmental and science-making issues. Some people were chosen from a list of participants in the Delta Vision Stakeholder Coordination Group: these interviewees were chosen based on their affiliation with science-making or sympathetic (environmental justice and environmental) policymaking groups or non-profit organizations. Other people were chosen by the principal investigators on our research team based upon their own ideas of who might be informative to talk to about the intersections of science and policy in the Delta. Subsequent interviewees were chosen based on recommendations from the first set of interviewees, through a snowball sample technique. A total of 13 interviews have been done to date.

Because of the sensitive political nature of the topic, we promised anonymity to our interviewees. Thus, when we quote from interviews we conducted, we refer to them by their primarily organizational identity and the date that the interview was conducted, ie agency scientist, interview, date. Respondents have included employees of Delta-relevant state agencies, environmental NGO employees, and university professors. An interview protocol was emailed to each interviewee ahead of the scheduled interview. Questions focused on individual respondents' definitions of science; their perceptions of the quality, thoroughness, and use of science related to the Delta and in conjunction with Delta policymaking; the spatial and scalar extents of Delta science; and the extent to which interested or affected groups have been included in the science and policymaking processes. Despite this structured approach, the interviews did not stick with the interview protocol verbatim and instead proceeded in a more informal, semi-structured fashion, touching on major points and leaving aside points about which the interviewee had little knowledge. Each interview was preceded by an explanation of our overarching research questions and purpose, and the reasons the current line of questioning was being explored. Interview times ranged between 40 and 80 minutes. All interviews were recorded on a digital voice recorder; digital files were transferred to a shared website and to individual computers and were transcribed. Transcribed interviews were coded using Atlas TI, a computer program that facilitates sorting and comparing quotes and codes among many transcripts.

⁴ These meetings allowed us to become participant observers in the policymaking process, to talk with stakeholders and interested audience members—often state agency staff members, but also members of the public at large and of various stakeholder groups who also were represented “at the table”—and to question Task Force representatives publicly about the absence of environmental justice concerns from their policy discourse. On several occasions, when in-person meeting attendance was not possible, we watched webcasts of Blue Ribbon Task Force meetings, which were held monthly. While this

online attendance restricted our ability to interact with and observe the audience and off-camera discussions among Task Force members, it still allowed us the opportunity to get an impression of the Task Force and its members' personal exchanges with one another and with staff and other presenters of information and updates on camera. During these online observations, notes were taken on the agenda and the control of the meeting by Task Force members; briefings by Task Force members; discourse between the Task Force and any outside presenters of information, such as state agency staff members; and discourse among Task Force members. Direct quotes of interest on the subjects of public participation, science and policymaking, Delta as Place, justice, ecology/environment, and non sequiturs were typed into notes, as was the context for their utterance.

⁵ We use socio-natural and techno-natural interchangeably. White and Wilbert identify the "the technonatural" as a "nature regime" interacting with organic and capitalist natures in complex and contingent ways. "Techno-natures", is not simply referring to a material referent of emerging artificial natures but is understood as much as a cultural sensibility, a phenomenon of everyday life, an imaginative horizon and an ideology (White and Wilbert 2009).

⁶ A number of agency and university researchers suggest that the Delta's fragile levee system inevitably will fail, that an earthquake, sea-level rise, or flooding due to future weather-based vagaries brought on by climate change will take many of them out, flood many of the farmed islands of the Delta, drown unprepared populations and recreational and agricultural sources of income, and taint the drinking and irrigation water for two-thirds of the state's population (Lund et al 2007).

⁷ In particular, work from scholars from Science and Technology Studies and state formation is important to our analysis. For example, historical sociologist Patrick Carroll is currently engaging in work on the Delta. Previously, he has articulated the notion of a "science/state plexus" to describe the ontologically dense, interwoven, multifaceted, heterogeneous and yet intercommunicating nature of the connections between modern science and modern government (Carroll 2006).

⁸ The two biggest features of the State Water Plan are the California Aqueduct (begun in 1960), a 450-mile long, 40-foot wide, 30-foot deep trench that conveys Delta water through the Central Valley over mountains to Southern California (Little Hoover Commission 2005), and the Oroville Dam and Reservoir on the Feather River which, in a "typical" year, stores and delivers 3 million acre-feet of Delta water for San Joaquin Valley agriculture, and Bay Area and Southern California urban areas (Little Hoover Commission 2005).

⁹ While the experiment was considered to be a "model for cooperation" by some (Koehler 1995), other analysts suggest that this collaborative model was in fact defined by uneasiness and conflict (Innes et al 2007), and chronic lack of resources (Raley 2005). Heikkila and Gerlak (2005:607) examine CALFED as one of their four case studies of large-scale collaborative environmental resource management, ultimately concluding that the data are not clear that collaboration is necessarily beneficial.

¹⁰ The BRTF is composed of eight members, appointed by the governor; a steering committee of four state department secretaries and the chair of the public utilities commission; and a stakeholder coordination group composed of 44 members representing a variety of interests (environmental and environmental justice groups, tribes, water districts, sport fishermen, cities and counties, builders, growers, and others), with both interest delineation and representative members selected by the BRTF.

¹¹ In Koehler's (1996:51) otherwise generally supportive article about the CALFED process, she ends by noting that agricultural and urban water user interests were vastly more powerful than environmental interests in setting the research agenda and in receiving financial resources in terms of staff and funding.

¹² This preference for engineering solutions is particularly clear in the PPIC report, which advocates massive re-engineering of water management through and from the

Delta, primarily through a canal that encircles the periphery of the Delta, which would have impacts to communities within and outside of the Delta (Lund et al 2007). These impacts would be felt through state budget burdens to build the infrastructure, lack of inclusion in the decision-making process, and displacement of local economies and communities to suit state-scale water management decisions. This report confirms an approach to managing water as a commodity through engineered devices, with limited control and mitigation of the impacts on ecosystems, and little input or oversight from communities at any scale. Although the BRTF did not endorse the PPIC report, it does call for something like the peripheral canal (but that isn't called the Peripheral Canal because it won't be exactly like the one proposed in the 1980s), the BRTF is recommending the non-peripheral canal/peripheral canal as something to pursue (see volume 2, showing revisions, pp 45–46 of the pdf; <http://www.deltavision.ca.gov/StrategicPlanningDocumentsandComments.shtml>)

¹³ EJCW usually references the California EJ statute (SB 115; introduced by Senator Hilda Solis 1999): “[T]he fair treatment of people of all races, cultures and income with respect to development, adoption and implementation of environmental laws, regulations and policies” and defines “fair treatment” to mean that environmental laws, regulations, and policies should not lead to “disproportionate impacts on low income communities and communities of color” and that such communities “share equitably in the benefits” from such laws, regulations, and policies. They add that such communities must be allowed to participate “as equal partners in every level of decision-making” (<http://www.ejcw.org/About/water%20justice.htm>).

¹⁴ Water justice is about building a communal vision for how water is distributed and managed. Water justice will be achieved when low-income communities and communities of color have access to water for drinking, cooking, swimming, fishing, cultural and other uses. It requires alternative water allocation and use systems counteracting the fundamentally flawed system of water use, distribution and planning in California (<http://www.ejcw.org/About/water%20justice.htm>).

¹⁵ http://www.deltavision.ca.gov/StrategicPlanningProcess/StaffDraft/Comments/Comment_from_Environmental_Justice_9-2-08.pdf

¹⁶ The lead author for this report was a former graduate student researcher of two of the researchers of this study.

¹⁷ The report examined publicly available regulatory agency data and census data and drew on three focus groups held in the Delta's urban areas of Tracy, Stockton, and Pittsburg, 15 in-depth interviews with Delta community members and individuals who have worked around issues pertaining to environmental and social justice in the Delta. Finally, the report draws from ethnographic observations (Liévanos et al 2009) of Delta Vision-related meetings held in Sacramento and in and around the Delta.

¹⁸ See <http://www.water.ca.gov/deltainit/docs/062308SuisunCity.pdf>

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