THEMES IN DESIGN AND ECOLOGY

In Definite Adjustment

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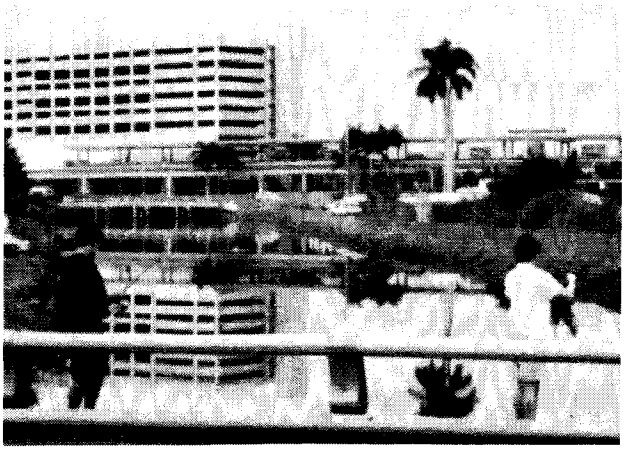


Fig 1: Bridge fishing in Coral Gables, Fl

INTRODUCTION

It is safe I think to say that the emergence of the term "contested landscapes" is tied to the gradual accumulation of political power by (among Others) the diverse environmental, identity, and civil rights communities who occupy these places (*fig. 1*). Living, working, and playing in there, we make ever-increasing demands on them to perform synthetically and simultaneously. The thought that more or less all of a sudden such places could be "contested" raises the question of what agency formed them before complication by these contestants. This is a question that lies hidden just below the surface of this paper, an implicit but important architectural question and a divisive political one. I should begin by emphasizing that rural places are contested too, and this confuses the identity and image of "rural" and "urban," and imposes new democratic frictions on virtually all aspects of our landscape and architectural production. This removal of the assumed freedoms in the relations between design and development demonstrates the complex problems we face in the increasingly networked space encompassing and squaring off city and country (*Plate I*).[1] In this paper I will frame some problems of and offer three very tentative and provisional possibilities for one such contested "rural" landscape, the Sacramento-San Joaquin River Delta.[2]

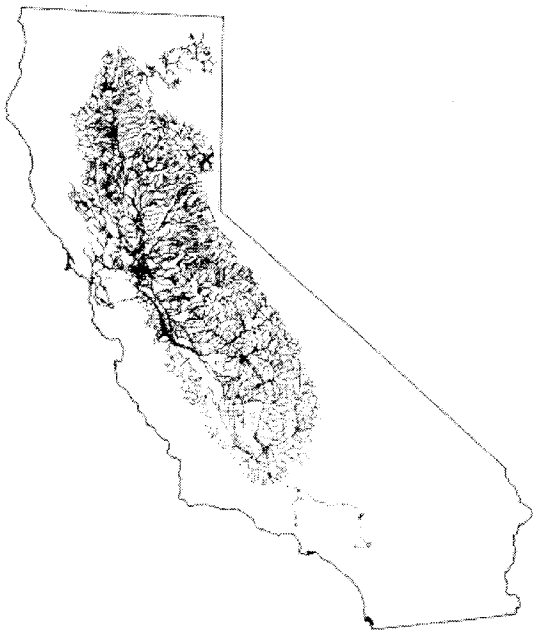


Fig 2: The California Delta and its watershed

The Delta is a reclaimed tidal estuary and currently the focus of intense political debate and technical calculation seeking to address diverse interests as the means to the end of exporting more Northern California water to prime the fields and faucets of Southern California.[3] A cursory analysis of the Delta's physical and cultural situation reveals that dominant and conflicted constituencies are bound together in this contest; in general, these issues and the interests of the dominant claimants ensnarl issues of property ownership, environmental law, and development pressure. The highly public and regulated context within which these and all other interests now must negotiate has forced once non-negotiable positions into increasingly pliant ones, making all who participate dependent on the success of each other's claims. This dependency is a much more interesting state vis-à-vis design speculation given design's synthetic and critical potential.

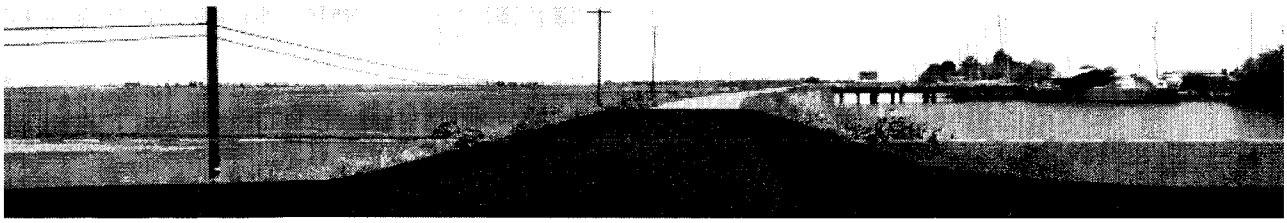


Fig 3: Typical water and land relationship

One need only correlate the Delta's physical geography and role in California's water distribution system to surmise the potential for and consequences of the Delta failing (*figs. 2 and 3*). It is within most people's ability to imagine the consequences of a flood-induced levee failure, of parts of the Delta area temporarily of permanently becoming a shallow lagoon. Additionally, California's inevitable dispossession of Colorado River water legally contracted to and now needed by other Western States for their developing economies plays a part in the cooperation of public agency and private development that regulate water supply risks.[4]

Exquisitely the case in the Delta, the development claims of the powerful dominate those of the less powerful, necessitating less powerful claimants to shift their alliances in order to meet their goals, and seek to move from being less dominant to dominant in their persuasive capabilities (*fig.4*). In what follows I will outline three case studies that illustrate possible interplays of powerful and less powerful claims: 1/ transactive man and nature; 2/ transitive and permanent ownership; 3/ the commodification of cut and fill. Each case shall describe the conflicted problems of each claimants' desires; an emblematic space they have produced; and a possible scenario that these emblematic spaces suggest for alternate, indefinite adjustments that will continue to be made to the Delta, always with the tugging water present *(fig. 5)*.

THEMATIC CULTURE 1: TRANSACTIVE MAN AND NATURE

Effectively thwarting even the claims of water users, the political momentum of the environmental movement has succeeded in establishing a body of laws that represent a wealthy nation's ability to value things by protecting them all or in part from market forces and human desires. In the Delta however, the practical application of these values is often perverse and raises questions about the operative definitions of Nature that underlie the legal constructions used as Nature's advocate.

When measured by the yardstick of native to non-native species, the Delta is the least "natural" habitat in North America.[5] Within this ongoing evolution of Delta habitat is an artifact and practice that rank among the earliest achievements of the environmental movement - a fish screen and fish relocation program instituted in 1968. Migrating back to the ocean at the same time of year that the pumps are extracting the most water, the young fish fry are mistakenly directed toward the artificial downstream produced by the pumps. They are then captured by the fish screen, surveyed, and trucked back to a place in the Delta not affected by the pumps (*Plate II*).

But the limits of the fish screen are now being tested by a non-indigenous species of Chinese crab that shares the same migratory cycle as some endangered fish species. The crab multiplies very quickly in the benign Delta estuary, and similarly confused by the pumps' draw, arrives there in concentrated numbers, clogging the screens, and feeding on the endangered fry. But luckily, owing to one of the many ironies in the dynamics between native and non-native species and human interventions, the crab seems to prefer the soft mud banks downstream and upstream to the riprap lining many Delta waterways. This suggests that the artificial, flood control-determined banks may actually help save at least these two species. If the crab remains in the Delta in large numbers, State Fish and Game managers may

Fig 4: Levee bank fishing, Brannan Island

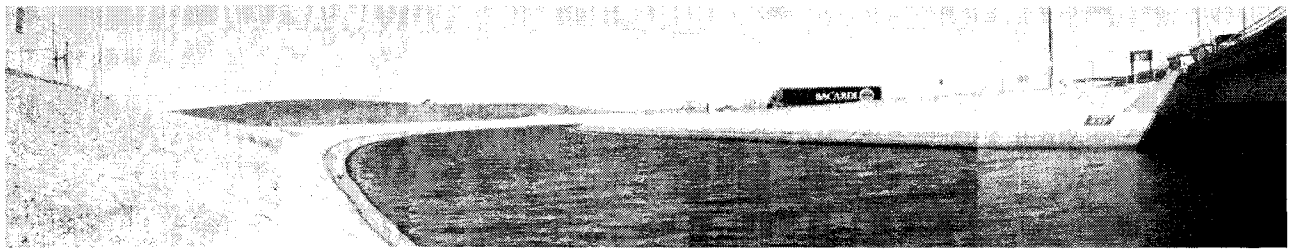


Fig 5: California Aqueduct, near Mountain House

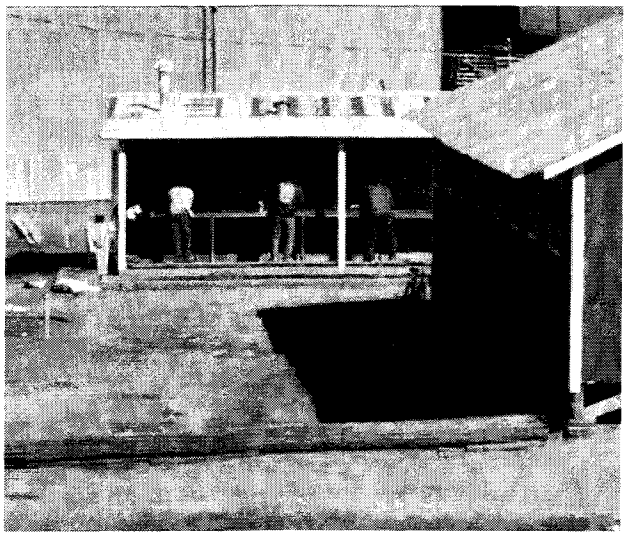


Fig 6: Afternoon laundry, Bacon Island

have no choice but to declare the Fish Screen and Fish Truck program to be counterproductive for protection of endangered species, this in addition to already being politically difficult given the economic importance of water redistribution.

Migration Scenario: Lodgecamp

It is a tradition among Delta farmers to produce temporary wetland habitat during fallow periods of the crop rotation cycle to attract game birds migrating along the Pacific Flyway. The Nature Conservancy, which recently became the owner of Staten Island, has the opportunity to elaborate on this practice by producing a synthesis of practices associated with agriculture, hunting and bird migration seasons (*Plate III*). Running concurrent to this temporally cycling land use is the possibility that architecture might synthesize tourism and recreation with the growing shortage of housing for California's migrant labor community. At present there is a great shortage of state-managed housing, schools, day care and educational facilities for use by migrant farm families (*fig. 6*). The resistance of nearby towns to the development of migrant housing in their communities suggests it is possible that new migrant family camps be located in sparsely-settled areas like the Delta and as part of an elaboration of the nascent recreational space of the Delta's land.

Since crops, bird migration, and hunting succeed each other in cyclical fashion, the transition of occupation from one community to the next has the potential to produce new traditions and transactions. These will have to accommodate the practices of laborers and their families, hunters, and bird watchers. It will need to produce space that supports the transition of one community to the ensuing community, of hunters ceding and preparing for bird watchers, of bird watchers ceding and preparing for farm workers, of farm workers ceding and preparing for hunters.

THEMATIC CULTURE 2: TRANSITIVE AND PERMANENT OWNERSHIP

The very fertile organic soil wrung from Delta swampland has subsided in areas over twenty feet, and is now virtually all below sea level. As the islands subside the expense of levee maintenance to landowners and the Army Corps of Engineers increases. This puts Delta farmers at a competitive disadvantage with farmers in the Central Valley, most of whom obtain Delta water at subsidized rates from the US Bureau of Reclamation aqueducts and whose land requires no expensive levee maintenance. Local farmers complain that large landowners, including the state, are buying farmland and taking it out of production, thereby weakening the regional economy and tax base.[6] Complicating this trajectory is a strong sentiment in the local community that the Delta should remain agricultural. This local landowner/preservationist group is subsidized State and Federal levee maintenance programs for Delta landowners. The political effect of this is that those who obtain their fresh water from the Delta are increasingly dependent on the voluntary enlistment of private landowners in tax-supported public flood control programs to keep salt water from flowing onto their fields or from their taps. Predictably these distant cities, towns, and other interest groups are increasingly proprietary in their attitudes toward Delta land use since their subsidization enables Delta farmers to continue to operate. But other, more valuable assets will now possibly be cultivated there, especially by the largest of the landowners.

Shifting Property

Among the consequences of this set of events is the Large Owner Axis (*Plates IV and V*). Physically a series of shallow bowl-shaped below sea level islands surrounded by rivers and sloughs, this Axis links the two most critical elements of the water delivery infrastructure and the owners there are proposing significant changes in land use that synthesize water development with environmental law. Outstanding among them is the Delta Wetlands Project,[7] which proposes to convert 18,000 acres of farmland on four islands to equal parts reservoir and artificial managed habitat for Delta flora and fauna. Like the Tide Land Reclamation Companies efforts 140 years ago, the Delta Wetlands Project is a contemporary example of the opportunities available to interests with the ability to capitalize on new, valuable Delta commodities out of those moving toward obsolescence (*fig. 7*).

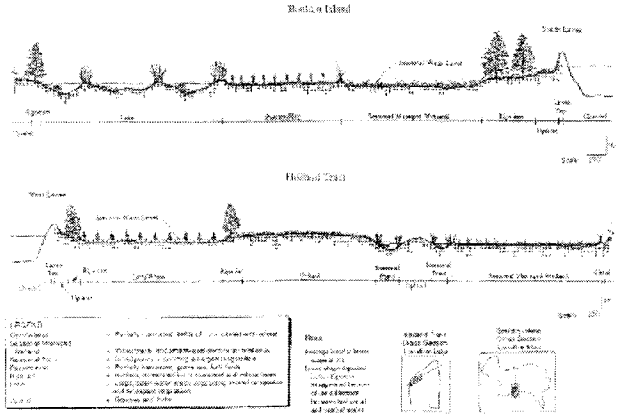


Fig 7: Constructed habitat cross sections, Delta Wetlands Project

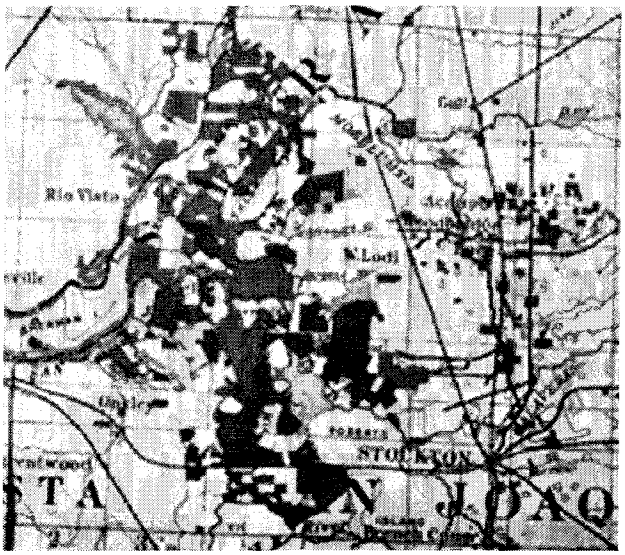


Fig 8: Land owned or rented by Japanese, Chinese, and East Indian, farmers, 1920

The Project is part of California's expanding water-trading economy, in which owners in one place sell their water allotment to another place, often several hundred miles away. The aqueducts, pumps, dams, and reservoirs of State and Federal Water Projects act as the conduits for these transfers between private and public entities. Yet the owners of Delta Wetlands plan no public access to the four islands and therefore they will, if approved as proposed, remain preserved as part of a gated community of large landowners who use the lower Delta islands as a non-profit tax write-off investment / private hunting ground.

Property Scenario: Bacon Island Farm Camp Monument

The Delta Wetland Project's owners will obtain enormous profit and political power that by controlling the release of their water into a publicly owned distribution infrastructure. As part of the proposal Bacon Island, one of the four Delta Wetland islands, is projected to become a reservoir. It is also the site of several farm camps of National Historic Landmark potential as indicated in an environmental impact report done for the Project's public review and hearing process (*fig 8*).[8] In this scenario, portions of Bacon Island Farm Camp Number 3 would be preserved and made part of a network of public sites that trace the history and landscape of this place.

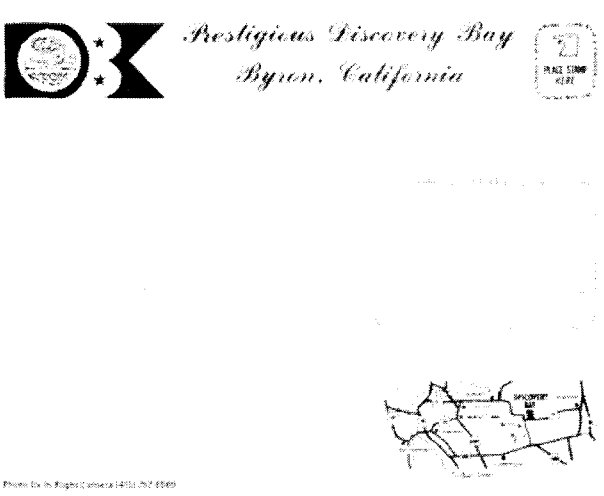
The buildings of Bacon Island Farm Camp Number 3 exemplify the practical problems of building in a viscous, subsiding landscape. The buildings were originally elevated above flood stage, high enough for the uncertain ground underneath them to be used as stables, tool sheds, and other programs.[9] The subsidence of the ground and the tidal fluctuation of the water make this is a common design problem for buildings on land and water alike. Surrounded by the water of the new reservoir, Bacon Island Farm Camp Monument Project (*fig. 9*) would elevate a single emblematic building. A new orientation dock would connect to the levee and form a new ground between and under the elevated buildings.

THEMATIC CULTURE 3: COMMODIFYING CUT AND FILL

During the summer it is possible that people living on the Delta's waterways outnumber those who live on within its islands bounded by those waterways. When coupled with the need to export water, the trajectories we can extrapolate from the Delta Wetlands Project and the Nature Conservancy's Staten Island ambitions, this role reversal that values water above land will only intensify.

The demand, mobility, and affluence of Californians and the relative affordability of real estate along the Delta's interstate highway sea-level girdle are producing subdivisions, strip plazas, gas stations, water treatment plants, and convenience stores. Often the developers of these suburban communities exploit their position at the Delta's

Fig 9: Shima Memorial and Interpretation Center, Bacon Island



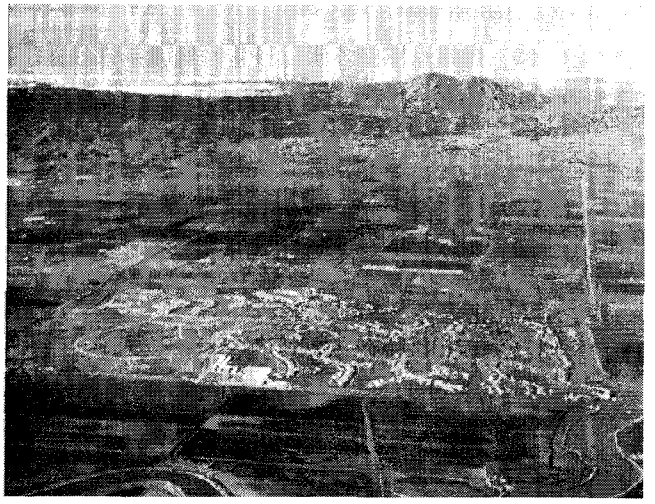


Fig 10: Postcard of Discovery Bay

periphery by creating a watery suburban landscape excavated in a pattern similar to conventional suburban morphologies but attached their newly excavated channels to the Delta's 1000-mile maze of waterways, making the parcels within these subdivisions very valuable indeed (*fig.10 and 11*).

Liminal Park Case

Discovery Bay markets a demographically calculated amenity, similar to the strategy of building developments around golf courses, and consistent with the general Delta tendency to settle along the levee (*fig 12*). It is the most impressive speculative organization of the liminal park zone. Similar to but more actively than a typical subdivision reconstructs the ground plane, at Discovery Bay this reconstruction is actually an excavation of a new and visible infrastructure, simultaneously providing fill to elevate house parcels and cut for navigation channels. It is home to 3,500 families, who, as it says on the developer's website, have chosen to "live where they play."[10]

The fabrication of this amenity space takes money and land that would otherwise be sold as the backyards of homes. This must be accounted for in a developer's bottom line, and results in both more expensive real estate values and greater density than a comparable

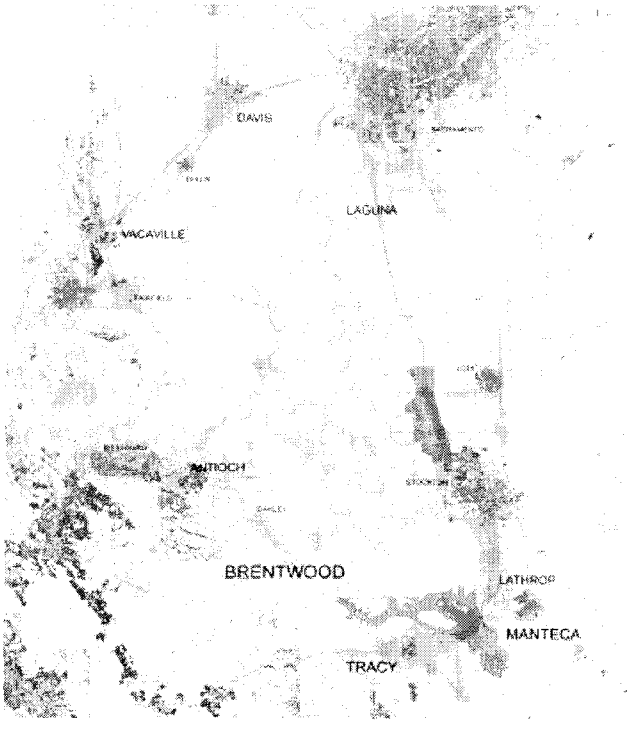


Fig 11: The Liminal Park Suburban Girdle

upper-middle-class suburban subdivision. On a .20 acre lot worth 400,000 dollars with zero-lot line zoning, the typical house is 1850 square feet and has three bedrooms, two baths, and an attached two-car garage. The front setback is 20 feet, side yards 8 feet, and at the back where typically one would find the back yard is a deck leading to a dock and a view of a channel of water surrounded with other people's boats, decks, and the houses. Zoning extends to include a buildable envelope for the dock that can vary according to boat quantities and types.

In contrast, developments produced at the edge of Stockton suggest other slightly denser developments for the Delta's periphery. The Stockton morphologies often employ 2- to 3-story condominiums, with parking lots, walking trails, tennis courts, restaurants, and other common recreational uses on the landside of the buildings, and decks and docks on the canal side. The increased density and collective organizations afforded by the condominium type maximize open space and minimize the identity-confirming space of the Discovery Bay side yards. Economies of density might also benefit a more heterogeneous urban population and expand the available recreational practices one encounters in the Delta.

Development Scenario: The Exchange Authorities

Modeled on mitigation law[11] and extrapolated from the Discovery Bay and Stockton typologies, this scenario illustrates potential exchanges that might be made both within a local development zone and also between two development zones with different but complementary needs. The local development zone, the Borrow Pit Exchange (*Plate VI*), is a ten-mile stretch of highway frontage. In the 1960's during the construction of Interstate 5 along the eastern edge of the Delta a number of linear "borrow pits" were dug parallel to the highway to provide fill for the roadbed. Over time the pits filled with water, gradually reverted to riparian lagoons, and eventually became state wildlife sanctuaries. This entirely incidental but cooperative set of events initiated by the development of the highway - the fill and the cut, the infrastructure, the habitat, the political proclamation - could be extended to include several other programs and interests.

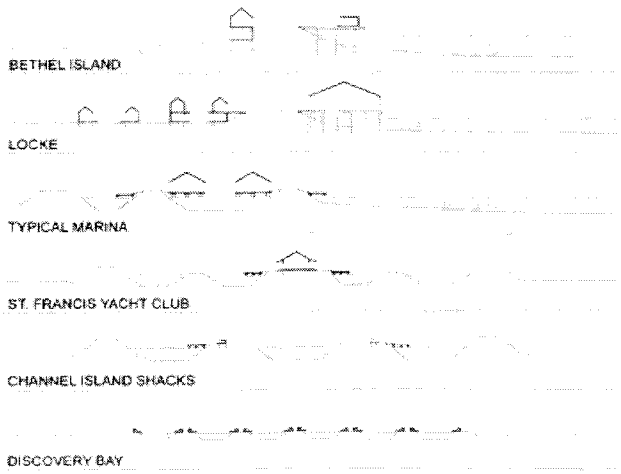


Fig 12: Recurrent settlement cross sections

The Borrow Pit Exchange synthesizes the artifacts of its already forming middle landscape of water treatment plants, highway rest stops, subdivisions, and power transmission lines with local roads, land and water habitat corridors and a set of new land subdivisions and development procedures that focus on quarrying fill material. The Western Area Power Administration easement is renegotiated to allow WAPA to develop new power transmission lines in the easement, and the easement's ground plane is converted to the City of Lodi wastewater treatment marsh, with eucalyptus and oleander windrows. The Borrow Pit Exchange will encourage relatively dense development in order to produce excess fill material for export trade, suggesting that a public agency regulate the production and deployment of the produced fill material. This agency will also institute design codes that control the construction of building foundations and elevations so that they minimize reuse of fill material for local levee construction.

The Borrow Pit Exchange will operate a joint agency with South Delta Flood Control Exchange (*figs. 13 and 14*), an area of less intense development pressure but more intensive flood control development pressure. These flood control improvements will require private land takings for the construction of channel cuts, and as is the tradition in the Delta, the newly created cut-off islands will continue to be owned by the pre-flood control landowners, but re-zoned for commercial recreational or private residential use.

Concerned with the generation of fill, the joint agency of the Exchanges will arbitrate and review each development proposal based on the amount of generated fill material, and since more fill is obtained from a greater density of channels cut, the agency promotes dense development. The landowners of these two areas are bound to

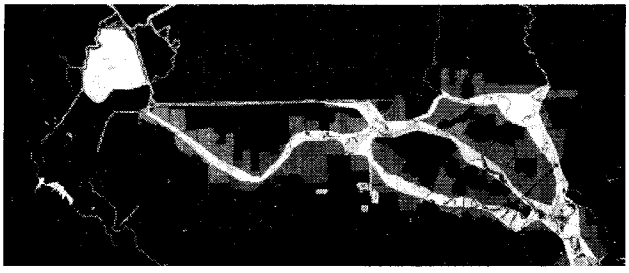


Fig 13: South Delta flood control cuts, cut-off islands, and adjacent owners

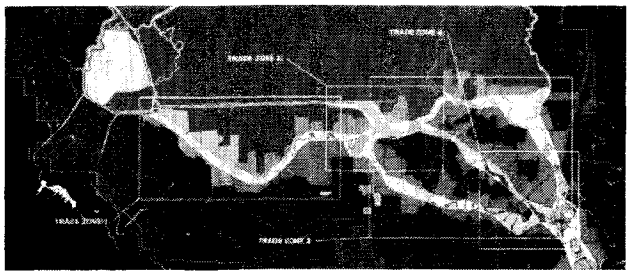


Fig 14: South Delta Flood Control Exchange, with trade priority zones

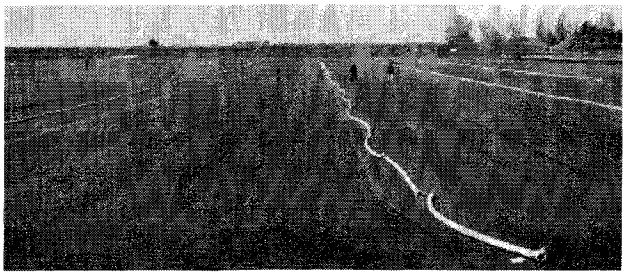


Fig 15: Sod Farming, Terminous Tract

each other according to the priorities of threats and risks and the locational logics of suburban development. They must respond to the agendas of preservationists, environmentalists, fishermen, boaters, labor activists, water and waste water treatment facilities managers and their urban constituents.

CONCLUSION

Presented here are the current physical and political conditions of a large contested landscape, described through the agency of three design scenarios. I should emphasize that these scenarios are no more complete and resolved than they are to be implemented; instead, they are to be developed as part of a design practice concerned with rendering visible possible futures of contested places. To date the biggest challenge in this ongoing work has been the translation of the Delta's political and physical conditions into something reminiscent of design, and to do this while remaining both critical of this subject and conventional enough so as to remain engaged in the public sphere. These three scenarios are part of a larger project called the Delta Travel Guide, of which they will contribute to several scales of design work embedded in the real physical and cultural conditions of the Delta. The normative predictability of the genre of travel guide and mixture of spatial trajectories, history, geography, architecture, and landscape urbanism will provide a useful form for this work. On this subject, artist Jeff Wall's discussion on the productive foundation offered by the genre is concise:

The process of experience of a work, while it must be open to the associations brought to it by different people, is still structure and regulated and contains determinations. I think it is controlled, above all, by genre, by the generic character of the picture-types and the types of subject. Bakhtin said that genre was the collective, accumulated meaning of things that has come through time and the mutations of social orders. It is the foundation of the guarantee of objectivity, the basis of the 'truth content' of representations...[12]

If design is the ultimate object of architecture then we might well exercise both self-control and self-criticism in how we communicate the products of our design monopoly.[13] Design can employ its visual and synthetic suasion to represent spatial organizations and productions, and project them into the highly mediated space of negotiation that surrounds any contested landscape. Like the Delta, the travel guide is still in the process of forming, seeking a proper means of representing practical problems with spatial consequences, with the hope that one day it may materialize in conference rooms holding the public exchanges that move things around the Delta.

NOTES

[1]See Dana Cuff, *Contentious Urban Development: Architects and the Public Realm,* in *re: Forming Social Space*, UCLA 1998

[2]"I" is not entirely accurate since much that underpins this research began in collaboration with Jane Wolff, Assistant Professor of Architecture at Ohio State. Jane has continued to work on that project, called *The Delta Primer*, which she will publish in 2003.

[3]For the definitive Delta overview, see John Thompson, *The Settlement Geography of the Sacramento-San Joaquin Delta, California*, (Stanford 1957).

[4]See Ulrich Beck, *Ecological Enlightenment*, (Humanity 1995).

[5]James T. Carlton and Andrew N. Cohen, *Nonindigenous Aquatic Species in a United States Estuary*, report published for the U.S. Fish and Wildlife Service, 1995.

[6]The largest private landowners not primarily interested in farming include: the Nature Conservancy, Steve Wynn (the Bellagio, MGM Grand), the Hilton family, and Delta Wetlands (Kemper Insurance). Ownership of Steve Wynn's Mandeville Island was recently transferred to the Tuscany Institute, a an environmental, non-profit, tax-exempt concern based in Las Vegas. The largest public landowners not primarily interested in farming are buying land at the confluence of the Sacramento and San Joaquin, where the water's salinity is greatest and where it is most difficult to keep down.

[7] www.deltawetlands.com

[8]*Final Draft, Environmental Impact Report, the Delta Wetlands Project*, prepared by Jones and Stokes, Engineers, May 2000. The report made note of the importance of several Bacon Island farm camps in the history of Japanese-American culture

in California. The most successful pre-World War II Japanese-American farmer, George Shima, the "Japanese Potato King," made his fortune on Bacon Island.

[9]Kyser Shimasaki, a Japanese-American farmer, provided to me and Jane Wolff this first-person account of Bacon Island farm buildings as he recalled from his childhood.

[10]www.discoverybay.com

[11]Environmental mitigation laws require that an equal amount of habitat be constructed to the amount being destroyed by development. Other techniques similar to mitigation occur in urban areas, for instance, Boston linkage policies require that market-rate housing developers construct a proportionate amount of affordable housing.

[12]Quote from Jeff Wall in *Representations, Suspicions and Critical Transparency: Interview with T.J. Clark, Serge Guilbaut and Anne Wagner*, in Jeff Wall (Phaidon 1996).

[13]Beck, *Ecological Enlightenment*, p. 75

LIST OF PLATES

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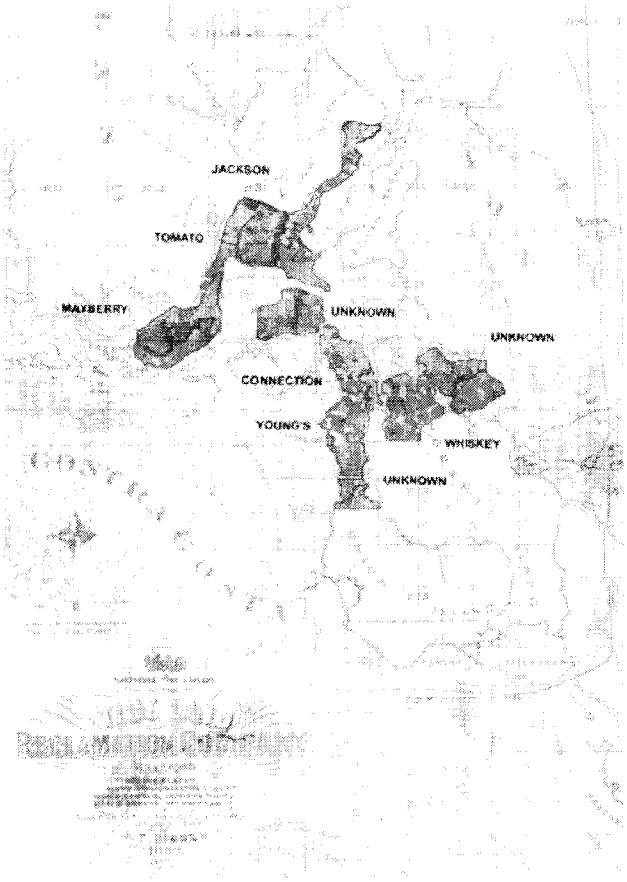

Plate I. Sloughs captured by land reclamation companies. *Several of these sloughs still exist, and several others were filled and are only evident through analysis of aerial photographs*

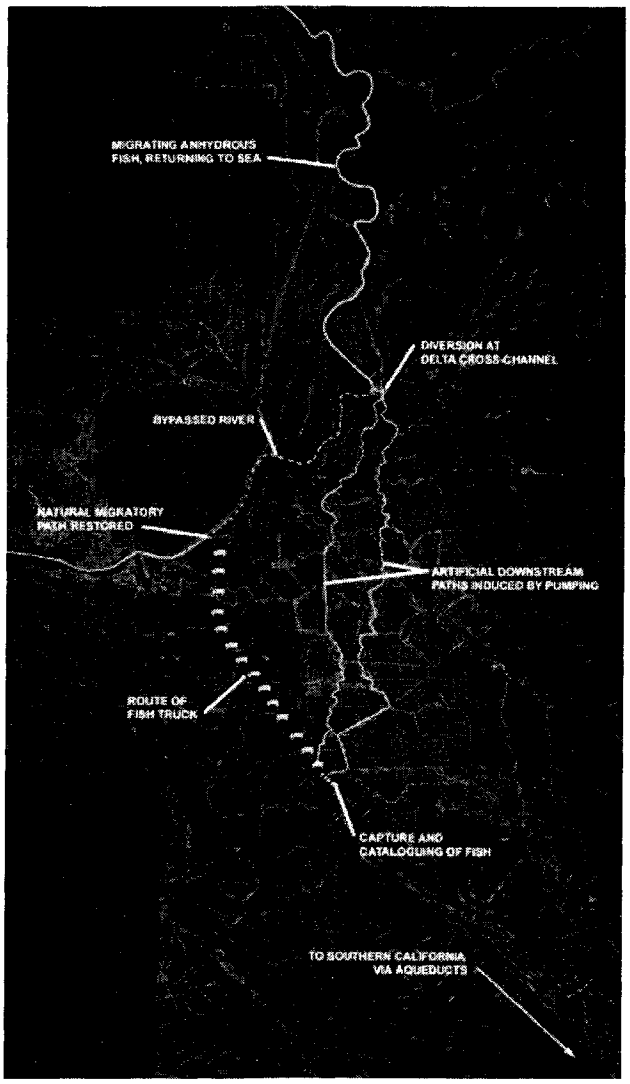

Plate II. Tour of the Confused Fish. *The flatness of the Delta and the power of the Pumps alter the direction of "downstream," leading to this wildlife management arrangement.*

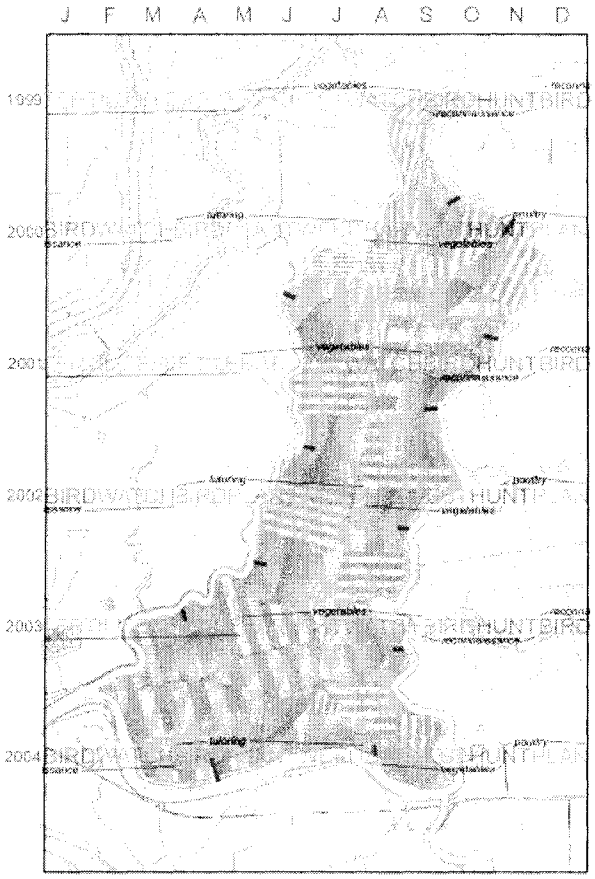

Plate III. Seasonal Practices Exchange Day. Goods or services are exchanged at the beginning and end of each fallow period.

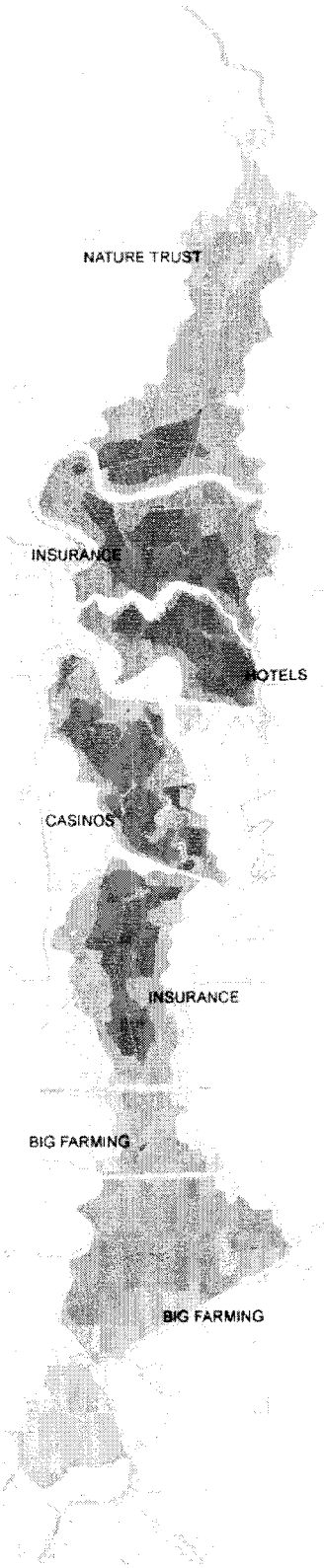

Plate IV: Below sea level lands, Large Owner Axis.

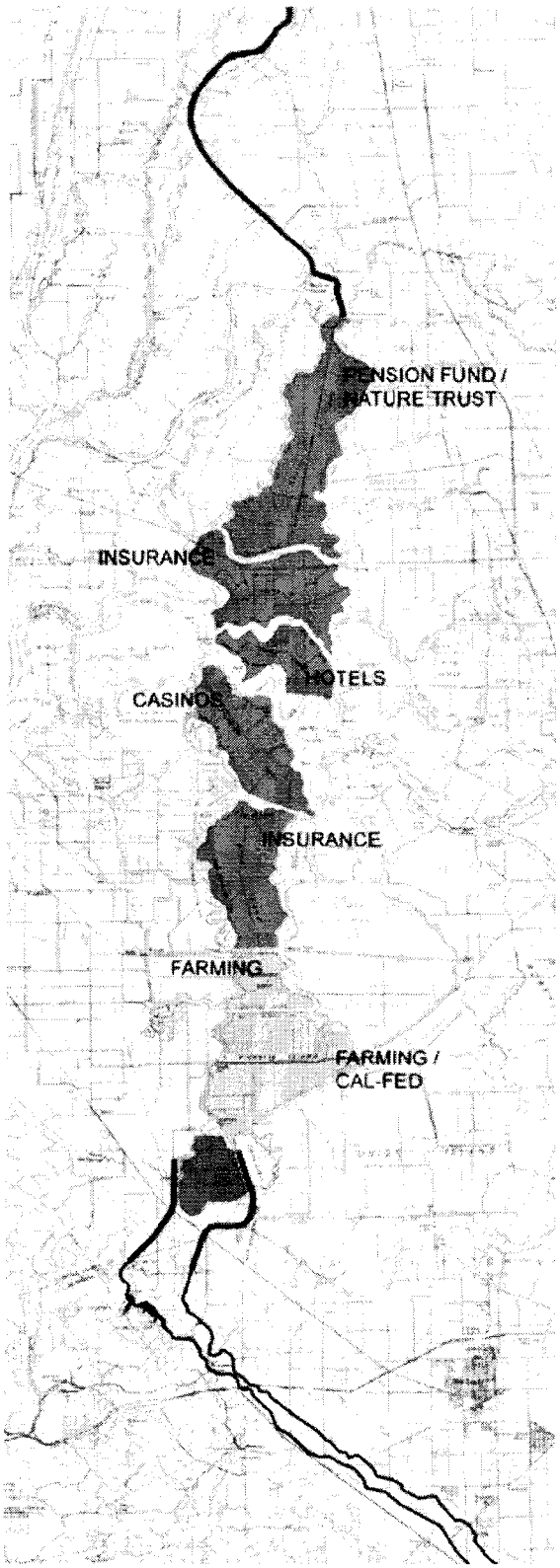

Plate V: Large Owner Axis in relation to water distribution infrastructure.

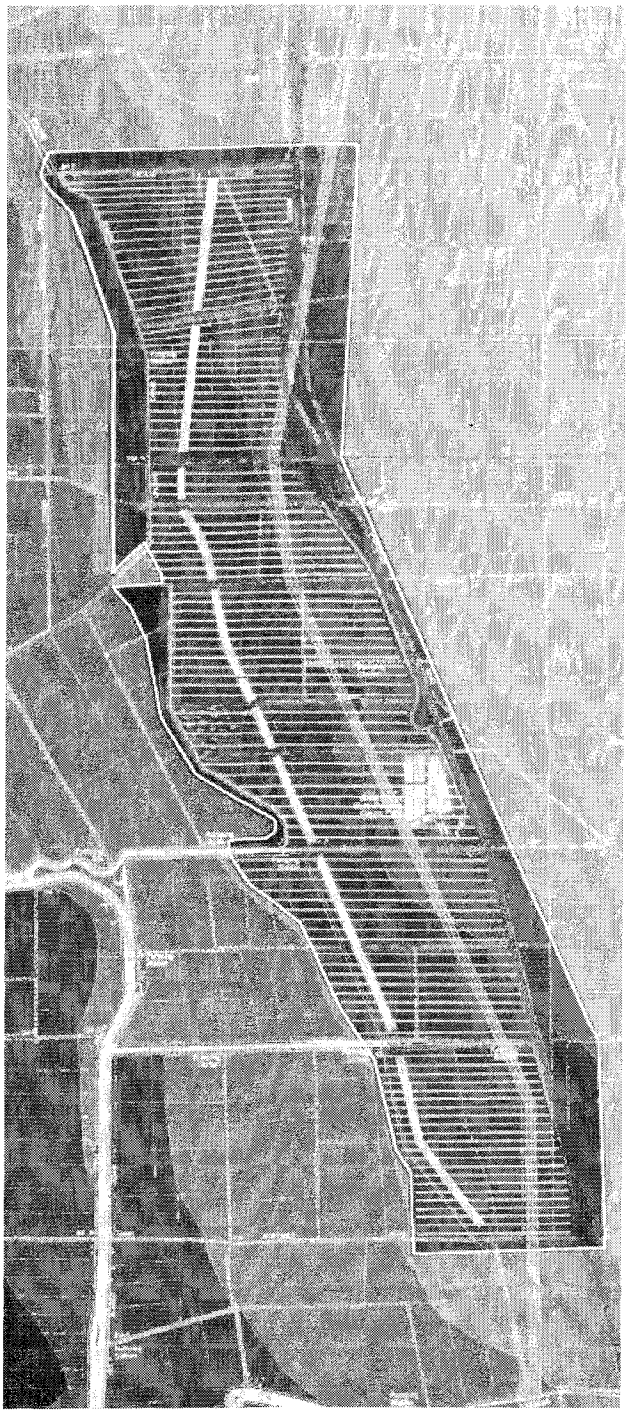

Plate VI: Borrow Pit Exchange. *Showing highway, power transmission lines, exiting borrow pits (parallel to highway), and new borrow pits (perpendicular to highway). Western edge of Exchange corresponds roughly to sea level.*

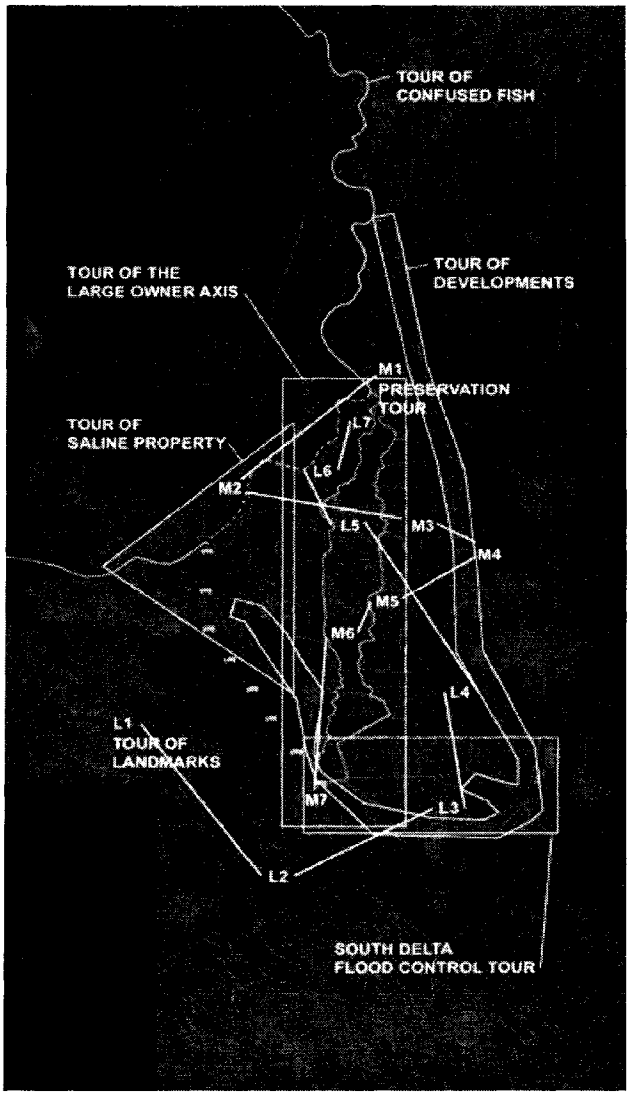

Plate IV: Delta Travel Guide Routes.