

Transitions in the Delta Economy

Josue Medellin-Azuara, Center for Watershed Sciences, UC Davis, jmedellin@ucdavis.edu

Ellen Hanak, Public Policy Institute of California, hanak@ppic.org

Richard Howitt, Agricultural and Resource Economics UC Davis, howitt@primal.ucdavis.edu

Jay Lund, Center for Watershed Sciences, UC Davis, jrlund@ucdavis.edu

The future of the Sacramento- San Joaquin Delta is characterized by change from physical forces and water management decisions. More permanently flooding of subsided areas, changes in water quality and habitat expansion may reshape the Delta we know today. In this study we explore how these changes may affect the Delta regional economy. Most changes in the Delta are likely to occur in the inner Delta or the primary zone, a heavily agricultural area. However, most of the business activity and population growth occurs on the secondary zone. Changes in salinity from either water exports or permanent flooding are relatively minor and may not affect agricultural production overall. Areas of natural habitat development were considered based on a prioritization of ecosystem investments study. A cost-benefit analysis for repairing levees after flooding was conducted to determine worthwhile areas to maintain in the event of levee failures. Most losses to agriculture are due to permanently flooded areas or habitat expansion, whereas water quality effects are marginal. About 1800 jobs and 130 million dollars in value added could be lost every year as a result of combined flooding and water quality effects. Water-based recreation has the potential of reducing job and value added losses from flooding and water quality. A better levee policy, mitigation programs for affected parties and research on hydrodynamics and levee prioritization may benefit the future of the Delta economy.

Keywords: Sacramento-San Joaquin Delta, water quality, modeling, multiplier effects, flooding, habitat

Thursday, October 18, 2012: Room 307, Delta People: Residents, Workers, and Recreationists–
Order 1

Economy of the Sacramento-San Joaquin Delta

Jeffrey Michael, University of the Pacific, Business Forecasting Center, jmichael@pacific.edu

Thomas Pogue, University of the Pacific, Business Forecasting Center, tpogue@pacific.edu

Pete Dangermond, The Dangermond Group,

Ben Sigman, Economic & Planning Systems,

Jesse Walker, Economic & Planning Systems,

Karen Winters, The Dangermond Group,

Current long-term Bay-Delta management planning seeks to achieve the coequal goals of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem...in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.” Through an analysis of the Delta’s economy this presentation aims to inform management of the Delta.

The presentation draws on the Delta Protection Commission’s recently completed *Economic Sustainability Plan*, which compiled a broad set of indicators and information about the Delta’s economy. In addition, the presentation utilizes information from the *Delta Sustainability Scoreboard* that the University of the Pacific’s Business Forecasting Center is developing to monitor and evaluate economic sustainability in the Delta.

These analyses indicate that there are approximately 200,000 jobs in the Delta, the vast majority of these (approximately 97%) are in the Secondary Zone. Overall, the Delta appears to have a relatively balanced employment composition typical of suburban areas with four sectors accounting for about 44% of employment: retail (13%), education (12%), health care and social services (10%). In contrast employment in the Primary Zone is heavily concentrated in the agriculture sector, which accounts for 44% of all jobs. Recreation-related industries: retail, arts/entertainment, and accommodation/food services, account for roughly 9% of jobs in the Primary Zone. Location quotient analysis of gross regional product shows the Delta has high relative concentrations of economic activity in three areas: agriculture; transportation, warehousing and utilities; construction, housing and real estate. The Delta is also a diverse and critical infrastructure hub for the regional and state economy. Besides the state water system it hosts extensive energy, transportation, and in-Delta municipal and industrial water supplies.

Keywords: Primary zone economy, employment, industry clusters, agriculture, recreation, infrastructure

Thursday, October 18, 2012: Room 307, Delta People: Residents, Workers, and Recreationists–
Order 2

People of the Sacramento-San Joaquin Delta

Thomas Pogue, University of the Pacific, Business Forecasting Center, tpogue@pacific.edu
Jeffrey Michael, University of the Pacific, Business Forecasting Center, jmichael@pacific.edu
Ben Sigman, Economic & Planning Systems,
Jason Moody, Economic & Planning Systems,

Current Bay-Delta management planning seeks to achieve the coequal goals of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem...in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.” Through an analysis of the Delta’s residents this presentation aims to inform management of the Delta.

The presentation draws on the Delta Protection Commission’s *Economic Sustainability Plan*, which compiled indicators and information about the Delta’s economy. In addition, the presentation utilizes the *Delta Sustainability Scoreboard* that the University of the Pacific’s Business Forecasting Center is developing to monitor and evaluate economic sustainability in the Delta.

It is estimated that in 2010 the Delta had 570,000 residents, but only about 12,000 of these individuals lived in the Primary Zone. While the more suburban Secondary Zone grew by 56% between 1990 and 2010, the relatively rural Primary Zone has about the same population as 20 years ago. Taken as a whole, the Delta’s age and household composition is similar to California, but with slightly younger and larger families. However, the Primary Zone had a notably older population, fewer children and relatively small households. In terms of race, 56% of residents identified themselves as being White in the Secondary Zone and 75% in the Primary Zone. Between 1990 and 2010, the Delta’s Secondary Zone saw a 50% net increase in new housing units, while the Primary Zone saw 10% growth despite its stagnant population. Across the Delta workers have relatively complex commute patterns typical of areas where residents generally work elsewhere. The Delta also has a better educated population than California as a whole, but it is nuanced with fewer high school drop-outs but also a smaller share of residents with higher education.

Keywords: Primary Zone residents, demographics, housing, education, commuting

Thursday, October 18, 2012: Room 307, Delta People: Residents, Workers, and Recreationists–
Order 3

Recreational Opportunities in the Delta and Suisun Marsh

Cheryl Essex, California State Parks, cessex@parks.ca.gov

Problem Statement: Five million people live within a 20-minute drive of the Sacramento-San Joaquin Delta and Suisun Marsh, with many drawn to enjoy the region's waterways, parks, wildlife refuges, historic communities and pleasant country roads. What does the future hold for recreation and tourism in this dynamic landscape?

Approach: The Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh carries out the Delta Reform Act's guidance to California State Parks. This proposal informs both the Delta Protection Commission's Economic Sustainability Plan and the Delta Stewardship Council's Delta Plan by:

- Assessing recreation demand and opportunities
- Describing issues that may affect recreation
- Recommending additions and/or improvements to state-managed lands and programs to increase recreational opportunities

Results: This study describes the types of recreation that residents and visitors desire and describes the State's role in protecting and enhancing recreational opportunities. Research suggests there is significant and increasing demand for recreation and tourism development in the region, but Delta and Suisun Marsh recreation providers face substantial barriers. Encouraging more residents and visitors to enjoy and appreciate the unique, inherent values of the Delta and Suisun Marsh will require strong partnerships between the region's communities and the State.

Relevance: A better understanding of the Delta and Suisun Marsh's recreation potential will assist water resource and ecosystem restoration specialists support and implement policies and projects that will increase recreational opportunities, business income, local and state tax revenues and jobs in the region.

Keywords: Human demographics, culture

Thursday, October 18, 2012: Room 307, Delta People: Residents, Workers, and Recreationists–
Order 4