

The Values of the Delta as an Evolving Place: Diverse, Elusive, and Under Studied
Findings of a Scoping Effort and Prospectus for Possible Further Review

Delta Independent Science Board

Purpose

The proposed review responds to two mandates in the Delta Reform Act of 2009. The first of these requires that the coequal goals for water and habitat "be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place" (CA Water Code §85054). The second directs the Delta Independent Science Board to " provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic reviews."

At the Board's teleconference meeting of September 29, DSC Chair Fiorini asked: "What is the scientific thrust of the Board's efforts here?" Why a science board is looking into "values" is a legitimate question. We list five rationales that guide the Board's efforts.

- 1) The social sciences, including economics through which values can be given monetary value, are a part of science.
- 2) Research in the natural sciences may be neglecting aspects of the Delta's physical, hydrological, and biological environment on which the unique values of the Delta as an evolving place depend.
- 3) Familiarity with social science research on the Delta will help the Board promote much needed coupled human-natural systems research in the Delta.
- 4) Delta science is undertaken to support informed, rational decision-making. To that end, research effort should be directed to those areas where the lack of information and uncertainties are greatest.
- 5) Policies based on natural or physical sciences that have not included inputs from social science often have not achieved their desired goals because they have not including this information.

Broad Questions Motivating this Review

The DISB is concerned with whether the science, broadly interpreted, in support of protecting and enhancing the diverse values of the Delta as an evolving place is the best available. Are adequate research programs in place? Are the most critical questions being asked? Is the understanding of the Delta's diverse values as an evolving place sufficiently accessible to be incorporated in Delta adaptive management decisions? Are sufficient new scholars of Delta as an evolving place arising and what might be done to encourage and further improve the quality of scholarly activity in this area?

Extent of the Scoping Effort

The scoping effort has been modest and has taken place informally over the past 15 months. One, sometimes two, members of the Board have spent time talking with key staff at the Delta Protection Commission and the Delta Conservancy, attending presentations of the Delta Narratives project and participating in its final workshop, and listening to and speaking with Delta residents at meetings on the Delta Levees Investment Strategy. Key documents cited in this review and others have been read. On the evening of October 14 the Board as a whole held a meeting in Knightsen, CA, and heard presentations by Erik Vink and Blake Roberts of the Delta Protection Commission and by Robert Beneditti on the Delta Narratives project. Delta residents were specifically invited to join the Board for this meeting.

Preliminary Broad Findings from Scoping Effort

The values of the Delta as an evolving place are manifest in the economic value of Delta land because of its agricultural productivity and, in the secondary zone, also for its suburbanization or peri-urbanization potential. The Delta's modest commercial areas, popular recreation and tourist sites, and other economic activities add diversity to the economy. The natural gas industry contributes to the economy, as has the wind industry in this millennium. In short, a viable economy contributes to the *"protection and enhancement of the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place"*. However, should the economy change too dramatically, Delta cultural and agricultural values could be lost.

This is the first major challenge of understanding the values of the Delta as an evolving place: how Delta values evolve is inextricably tied to how the economy evolves. The evolution of the economy could be guided by concern for the evolution of Delta values, but the lack of a unified Delta voice and modest Delta-wide governance mechanisms (see the third major challenge, below) reduce the possibilities for positive feedbacks between the evolution of Delta values and the evolution of the economy.

The second major challenge is to understand the non-economic values. These values are held by current residents, experienced by recreationists, enjoyed by visitors to legacy towns, and embedded in historic and literary works from the Delta. These values are also evolving, a process that is only "good" when the evolutionary processes are moving the Delta in "positive" directions. Of course, what is "positive, and is positive to whom, are also value judgments. To some extent, many of the non-monetary values are latent, awaiting discovery and communication so that they can be more widely understood and appreciated. Thus the second challenge of protecting and enhancing Delta values is that these values are vague and difficult to grasp, and need to be better identified.

A third major challenge to understanding Delta values is that there is not a single community expressing these values within the Delta. The complexities of the Delta's waterways, the historical settlement pattern, the division of the Delta into six counties, and the shortage of connecting roads deprives the Delta of a social, economic, political, and

cultural center. To be sure, Delta residents do respond together to what they see as common externally driven threats, but they do not have a center in which they interact socially or economically in their daily lives, a place where shared values thrive and can be publicly expressed. For example, South Delta residents are generally connected to Stockton, West Delta residents interact with multiple communities of east Contra Costa County, and North Delta residents head to Sacramento for supplies, food, and entertainment. In each case, Delta residents are an insignificant fraction of the larger metropolitan area's civic life. This means, for example, that there is no central Delta-wide school system in which children and their parents to interact, no central library to retain books pertinent to the Delta, and no central museum for Delta artifacts. Clearly, values are, or at least can be, developed, retained, and politically expressed through a central community, but the Delta, from a social and cultural perspective, is more like a "donut" with an economic and cultural, and hence political, hole in the middle. Beyond the Delta, the expression of Delta values is even more dispersed and difficult to access and assess. Indeed, a central problem is that only a small fraction of people in California is even aware of the Delta, what it represents, and what it has to offer as part of the state of California. These problems are interrelated.

It could be argued that values that are so hard to access and express are like the sounds of trees falling when there is no one there. And yet, there is something about the Delta that still keeps its dispersed residents trying to connect. The Delta attracts many to want to understand it better and to sustain its values. For this reason, the state legislature established the Delta Protection Commission (DPC) in 1992. The DPC exists because the Delta is perceived as being special and because the residents needed an institution through which they could develop their values, express their values, and have some control over their collective destiny. This was reaffirmed in the provisions of the text of the 2009 Delta Reform Act as well. It is important to note that the Delta is the only region of California with a state initiated and supported governance mechanism.

Delta Protection Commission – the Key Actor

The Delta Protection Commission is the key actor in promoting understanding of Delta values. The Delta Protection Act of 1992 created the DPC and *declared that the Delta is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and that it is the policy of the State to recognize, preserve, and protect those resources of the Delta for the use and enjoyment of current and future generations, in a manner that protects and enhances the unique values of the Delta as an evolving place (PRC sections 29701-2). The Commission is a forum for Delta residents to engage in decisions regarding actions to recognize and enhance the unique cultural, recreational, and agricultural resources of the Delta [PRC section 29703.5(a)].* The Delta Reform Act of 2009 further directs and provides funding for the Delta Protection Commission to prepare an Economic Sustainability Plan every five years. The DPC is the lead agency for informing the Delta Stewardship Council on matters concerning the protection and enhancement of Delta values.

The Delta Protection Commission clearly has the legislative mandate to play a key role in promoting research and providing a forum for coordinating local initiatives tied to the values of the Delta as an evolving place. Commission meetings, held six to eight times per year, provide critical opportunities for residents to participate in the review of land-use

plans, discuss DPC projects and their findings, be briefed on the activities of diverse agencies involved in the Delta, etc. The Commission meets in different cities around the Delta in order to give residents in each area easier access through the year.

The following comments are preliminary and incomplete.

1) The DPC's most elaborate single activity has been the preparation of the Delta Economic Sustainability Plan. Prepared by a group of consultants, a draft for review was issued in early October 2011 and the final draft was released in January 2012.¹ The Delta Science Program organized an independent review of the draft of the ES Plan that was released in December 2011² so few of its comments affected the final draft. Appendix A contains the statutory requirements for the plan.

2) The DPC has led the National Heritage Area Project in pursuit of the possibilities that almost all of the primary Delta and some of the secondary Delta and additional area could become a National Heritage Area (see map in Appendix B). Being an NHA would facilitate national and state recognition of the Delta as an area of special historical value. A feasibility study was completed in 2012.³ In March 2015, California Senators Boxer and Feinstein and Representative John Garamendi introduced bills to create the Delta NHA, seeking \$10 million in Federal funding to seek matching grant funds from the state and local governments to develop a management plan over the next 15 years.

3) To help demonstrate that the Delta is historically special, the DPC funded the Delta Narratives Project. While many modest efforts have been made to describe aspects of the Delta, there has not been a comprehensive effort to tell the Delta's story since John Thompson's dissertation was completed at Stanford University in 1957.⁴ In 2014 the DPC funded a Delta Narratives Project headed by Professor Emeritus Robert Benedetti of the University of the Pacific and former Delta Protection Commission Executive Director Margit Aramburu. A team of scholars, museum professionals, and archivists came together in support of this project. They have completed the first phase of an ambitious plan to organize cultural and historical exhibits in the Delta.⁵ Scholars from CSU Sacramento and

¹ http://www.delta.ca.gov/res/docs/ESP/ESP_P2_FINAL.pdf

²

http://www.deltacouncil.ca.gov/sites/default/files/documents/files/Review%20of%20Sustainability%20Plan%20Final_0.pdf

³ <http://www.delta.ca.gov/FeasibilityStudyforaSacramento-SanJoaquinDeltaNHA.htm>

⁴ Thompson, John. 1957. A Settlement Geography of the Sacramento – San Joaquin Delta, California. PhD dissertation, Geography, Stanford University, available at: <https://watershed.ucdavis.edu/pdf/thompson-dissertation%20small.pdf>

⁵ The Delta Narratives project, in the process of identifying and organizing key actors, assembled an inventory of all of the libraries and museums with material on the Delta that is available at: http://www.delta.ca.gov/res/docs/DelHAI/Appendix_C_Directory.pdf The project also has brought together an exceptional bibliography available at: http://www.delta.ca.gov/res/docs/DelHAI/Appendix_D_Bibliography.pdf

Stanislaus, University of the Pacific, and UC Merced have identified historical material not easily accessible to the public and prepared Delta “narratives”, histories that highlight key information pertinent to the Delta today. Local historical societies, museums, and libraries are helping preserve valuable pieces of the Delta story. The Delta Narratives project has begun to create a way for these pieces to be interrelated, showcasing the Delta region for what the project believes it really is - one of the most historically important regions in the United States.⁶

Note that further projects of the DPC that might be considered for this review are listed in the Prospectus for Possible Further Review.

The Delta Stewardship Council and The Delta Plan

The Delta Reform Act of 2009 established the Delta Stewardship Council (DSC) and directed it to draft a Delta Plan to assure water reliability and Delta restoration in the context of the Delta as an evolving place. The DSC reviews the DPC’s Economic Sustainability Plan to assure its consistency with the Delta Plan. *The council shall take into consideration the recommendations of the commission, including the recommendations included in the economic sustainability plan. If the council, in its discretion, determines that a recommendation of the commission is feasible and consistent with the objectives of the Delta Plan and the purposes of this division, the council shall adopt the recommendation.*

Chapter 5 of the Delta Plan discusses Delta values and covers how the DSC hopes to participate in the protection and enhancement of Delta values. The chapter also builds on and expands on the material brought together in Delta Vision (2008). Key points and the performance measures adopted in Chapter 5 of the Delta Plan can be found in attachment B. The DSC is currently in the process of revising and improving these performance measures.

The DSC is also required by the Delta Reform Act of 2009 to prepare a Delta Levee Investment Strategy (DLIS). It is currently in the process of preparing the strategy and has found that Delta values are proving a key, yet elusive, factor in determining investment priorities. The Delta Science Program (DSP) arranged for an independent panel of scientists to review the DLIS. The strongest, clearest, albeit difficult in practice, recommendation of that panel was that a common denominator of value, presumably dollars, was sorely needed to reach conclusions logically.⁷

Interim Findings and Recommendations to Date

First, the Delta Independent Science Board is impressed with the efforts it has observed to date and encourages even greater effort. Six decades have passed since the last, and only, PhD dissertation was written on the Delta as place.

⁶ Adapted/updated from the website:

[http://www.delta.ca.gov/res/docs/DelHAI/Delta Narratives Project Description.pdf](http://www.delta.ca.gov/res/docs/DelHAI/Delta_Narratives_Project_Description.pdf)

⁷ <http://deltacouncil.ca.gov/docs/methodology-and-scientific-basis-support-delta-levee-investment-strategy>

Second, the Delta Reform Act requires consideration of Delta values in making decisions about the Delta. However, the Board believes that decisions concerning Delta as an evolving place cannot be made on the basis of objective, scientifically determined, information alone. For example, the question of which levees to invest in, depends not only on existing economic and social values, but also on how Delta residents and the State as a whole envision the Delta “should” evolve to protect and enhance its diverse values.

Third, a rational Delta research program should attempt to reduce the greatest uncertainties about the Delta as an evolving place, or at least try to understand the greatest uncertainties better. The Board is concerned with how little research is being undertaken on what Delta values are and how they might be protected and enhanced in the context of the Delta as an evolving place. We sense that more research, both through Delta agencies and by academic scholars through the usual sources of academic funding, could help clarify what Delta values are and how they could be brought into Delta decision making.

Fourth, with respect to the design and execution of a Delta economic sustainability plan, the Board acknowledges the considerable difficulties of adequately corraling and effectively interpreting economic data given that the primary Delta is located in five counties, the secondary Delta in six. The Board also acknowledges the considerable difficulties of implementing a sustainability plan given the number of counties involved. The preparation of the next Delta Economic Sustainability Plan provides a key opportunity to reduce the uncertainty surrounding this issue. Presumably the independent review panel’s comments on the first review will affect the design and execution of the second economic sustainability plan due to be released in 2016.

Fifth, the Board recognizes funding limitations and encourages more funding for the science, especially the social science, in support of an improved understanding of the values of the Delta as an evolving place.

Sixth, given that Delta social scientists are few and that few Delta natural scientists have worked explicitly on coupled human-natural systems research, considerable groundwork is needed to prepare the Delta scientific community to work effectively in this area. Given that the Delta is among the most humanly transformed rural landscapes in the world and that understanding the future requires a coupled systems approach, this should be a Delta Science Program funding priority.

Seventh, the Delta Narratives project has been quite successful, phenomenally so given the size of its budget. Delta Narratives has brought scholars, many heretofore not Delta scholars, together to strengthen and communicate interpretations of the Delta’s history, provided opportunities for students to be introduced to the Delta, identified sources of information about the Delta including identifying numerous collections in libraries and museums, and successfully rallied the participation of Delta residents. Additional activities along these lines seem warranted to further develop understanding of Delta values.

Prospectus for Possible Further Review

Considerably more time could be spent reviewing the projects of the Delta Protection Commission and increased efforts in this regard would likely be productive. In particular, the Board could look further into:

- 1) The Delta “branding project”,
- 2) The “Delta levees project,
- 3) The Delta Land Use and Resource Management Plan, and
- 4) The Strategic Plan, Vision 2030.

In addition, a briefing on how the DPC is developing its 2nd Economic Sustainability Plan would seem quite appropriate.

The Delta Conservancy primarily exists to help coordinate and oversee Delta restoration, it also has a secondary mandate to address the diverse values of the Delta as an evolving place. An additional meeting with leaders of the Conservancy to discuss their future plans would be informative.

The Board could also assess the role of key studies and publications on the Delta by the Public Policy Institute of California . Our preliminary observation is that the use of scenarios and sensitivity analyses is an effective way of highlighting value choices in advance of making decisions. Encouragement of future analyses of this type by this organization could be a useful approach in further examining the question of Delta as an evolving place.

Recommendation

Because the values of the Delta as an evolving place continue to remain elusive, the Board should continue to keep the values of the Delta as an evolving place on a “middle burner” through periodic briefings to the Board as a whole, occasional specific forays into particular topics by a subcommittee of the Board, and periodic reports of findings. A draft final report pulling the findings together would be prepared by mid 2017.

Alternative Recommendation

The findings to date appear to be sufficiently robust that a formal subcommittee of the Board should be established to complete the efforts undertaken to date and prepare a draft final report by mid 2016.

Attachment A

The Delta Reform Act of 2009 mandated what the Economic Sustainability Plan would include. This can make writing the report a little awkward.

SEC. 23. *Section 29759 is added to the Public Resources Code, to read:*

29759. *(a) Not later than July 1, 2011, the commission shall prepare and adopt, by a majority vote of the membership of the commission, an economic sustainability plan. The economic sustainability plan shall include information and recommendations that inform the Delta Stewardship Council's policies regarding the socioeconomic sustainability of the Delta region.*

(b) The economic sustainability plan shall include, but not be limited to, all of the following:

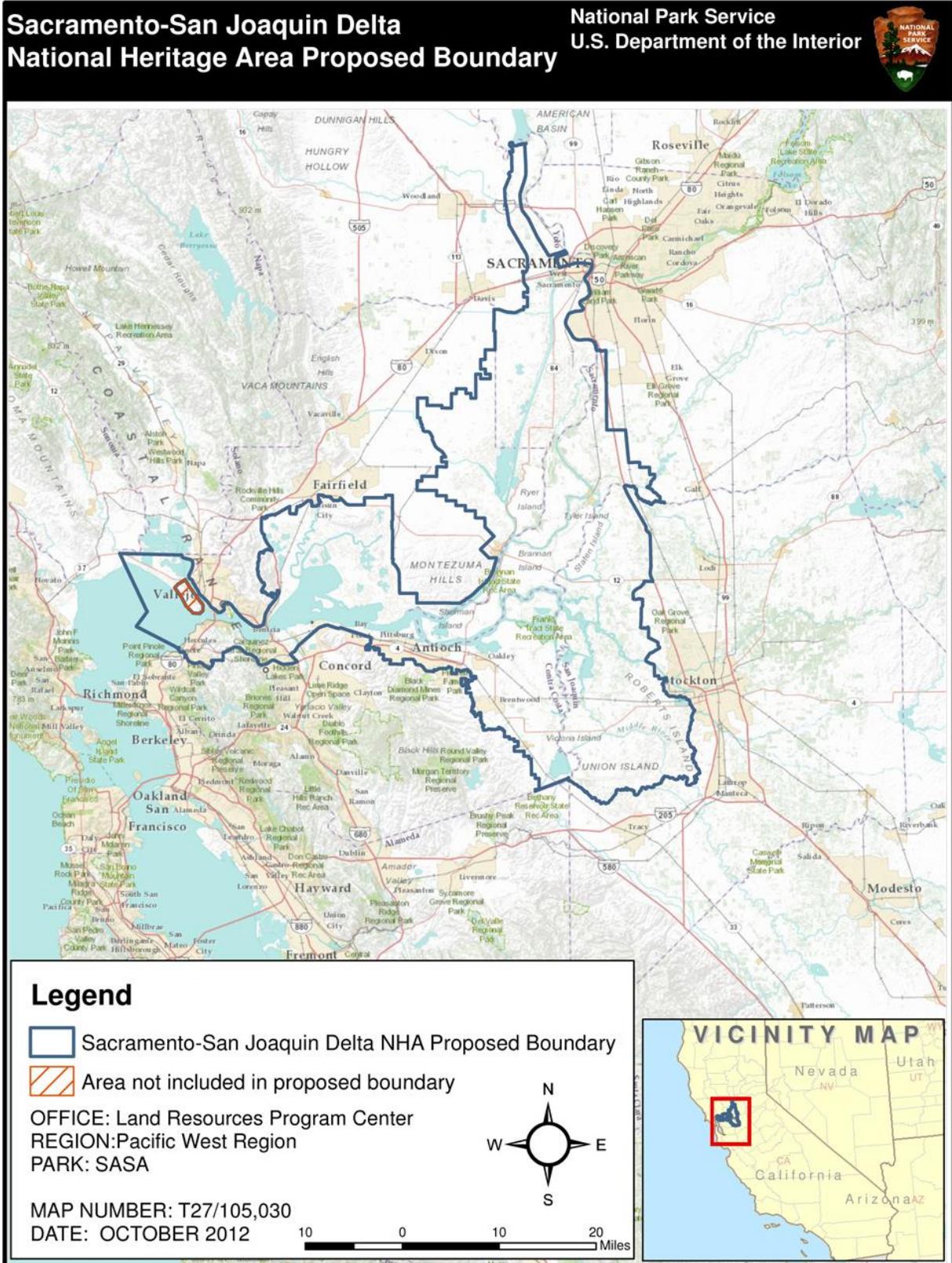
(1) Public safety recommendations, such as flood protection recommendations.

(2) The economic goals, policies, and objectives in local general plans and other local economic efforts, including recommendations on continued socioeconomic sustainability of agriculture and its infrastructure and legacy communities in the Delta.

(3) Comments and recommendations to the Department of Water Resources concerning its periodic update of the flood management plan for the Delta.

(4) Identification of ways to encourage recreational investment along the key river corridors, as appropriate.

Attachment B



Attachment C

From the Delta Plan, Chapter 5, closing pages on Delta as Place (pages 198-199)

Science and Information Needs

Better information about recreation and tourism in the Delta and additional research into best practices for managing farmlands in the Delta can contribute to efforts to protect the Delta's unique values. These needs include the following:

- Surveys of Delta recreation at regular intervals, such as every 5 years, to inform marketing and planning for recreation and tourism
- Assessments of opportunities to control or reverse subsidence of farmland
- Analysis of land and water use by agriculture, including land ownership (resident vs. absentee; age of owner; size of holding, etc.), cropping patterns, soil types, and other factors to identify the Delta's agricultural regions, their competitive advantages, threats and opportunities
- Analysis of farm labor housing needs.

Issues for Future Evaluation and Coordination

Many Delta agencies and residents are concerned that the region's economy may suffer if agriculture or other uses decline significantly due to habitat restoration or water conveyance projects, especially the BDCP described in Chapter 3, or changes in State priorities for levee investment resulting from the studies recommended in Chapter 7. DPC's ESP forecasts adverse economic impacts from farm-land loss based on a scenario of how these decisions may affect the region. Its Proposal to Protect the Delta as a Place recommends that the Delta Investment Fund support protection of the Delta economy, and be administered by the DPC and guided by an investment committee appointed by the DPC's commissioners (DPC 2012a). The Delta Conservancy will also play a role in some economic development efforts, as provided in Public Resources Code section 32322(b).

Because BDCP and new levee investment priorities are not yet complete, the magnitude of any impacts to farmland, other uses, or the Delta's economy cannot reasonably be forecast. If significant adverse impacts to the Delta economy do result from farmland losses or other impacts due to habitat restoration, water conveyance, or revised levee investment priorities, then measures to compensate for these losses may warrant consideration. This consideration should include creation of a regional agency to implement and facilitate economic development efforts, guided by the DPC's ESP. The agency's responsibilities could include the following:

- Branding and marketing the Delta
- Coordinating with counties and cities to encourage planning and infrastructure development that is aligned with economic sustainability strategies
- Providing regulatory assistance to reduce impediments to priority activities, including visitor-serving developments, dredging, levee construction, and ecosystem restoration, to reduce impediments and lower costs of these activities

- Encouraging value-added processing of Delta crops, agritourism, visitor-serving commercial businesses, and preservation of the historic buildings in legacy communities
- Recommending and overseeing expenditures from the Delta Investment Fund

Performance Measures

Development of informative and meaningful performance measures is a challenging task that will continue after the adoption of the Delta Plan. Performance measures need to be designed to capture important trends and to address whether specific actions are producing expected results. Efforts to develop and track performance measures in complex and large-scale systems like the Delta are commonly multiyear endeavors. The recommended output and outcome performance measures listed below are provided as examples and subject to refinement as time and resources allow. Final administrative performance measures are listed in Appendix E and will be tracked as soon as the Delta Plan is completed.

Recommended performance measures for protection and enhancement of the unique cultural, recreational, natural resources, and agricultural values of the Delta as an evolving place are described below.

Output Performance Measures

- Congress designates the Delta and Suisun Marsh as an NHA by January 1, 2014. (DP R1)
- Water management, ecosystem restoration, and flood management projects minimize conflicts with adjoining uses by including adequate mitigation measures to avoid adverse effects. (DP P2)
- Recreation facilities are included in new ecosystem restoration projects. (DP R9)
- The DWR and others increase the extent of their subsidence reversal and carbon sequestration projects to 5,000 acres by January 1, 2017. (DP R7)

Outcome Performance Measures

- No further rural farmland in the Delta is lost to urban development. (DP P1)
- Progress toward protecting the Delta legacy communities, as indicated by renovation of historic structures, flood proofing, and other reductions in flood hazards, and maintenance or growth of small businesses and population. (DP R3)
- Increasing tonnage of cargo and the number of jobs at the ports of Stockton and West Sacramento. (DP R18)