

February 26, 2003

Ms. Marlyce Myers  
The Nature Conservancy  
2015 J Street, Suite 103  
Sacramento, CA 95814

**Subject: Response to Comments Received on the Draft Socioeconomic Assessment of Proposed Habitat Restoration within the Riparian Corridor of the Sacramento River Conservation Area**

Dear Marlyce:

Jones & Stokes and its subcontractor, TCW Economics, have reviewed the eight letters of comment and one e-mail we received on the Draft Socioeconomic Assessment of Proposed Habitat Restoration within the Riparian Corridor of the Sacramento River Conservation Area. Comments were received from the following:

- California Farm Bureau Federation
- County of Butte Chief Administrative Office
- County of Glenn Department of Agriculture
- Denny Bungarz, Glenn County Public Interest Representative to the Sacramento River Conservation Area Forum
- Family Water Alliance
- Glenn County Resource Conservation District
- Shirley Lewis, Butte County Landowner Representative to the Sacramento River Conservation Area Forum
- U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex, and
- Wildlife Conservation Board

Each of these entities has raised questions or addressed issues that we feel warrant some response by the study team. We found no comments that suggest our general approach to the analysis is significantly flawed, but we would like to make some general and some specific comments in response to issues raised in the letters as a last effort in this study. We also have made some minor text changes to the draft report in response to the comments; the final report and all of the letters of comment are included with this letter.

## **General Comments**

**Report Scope and Assumptions.** Many of the individuals and groups that submitted letters questioned the scope of the study and the numerous assumptions that framed the technical analyses. Suggestions were made that the study should have looked at land conversion effects from years preceding 2000; others suggested the study area should have extended along a greater stretch of the river (from Redding to Sacramento) and in a wider band along the river (the entire Sacramento River Conservation Area). Assumptions regarding public versus private future ownership, long-term maintenance of bank and levee protection, purchase in fee title and others were questioned. We have not attempted to make adjustments in our analyses in response to these comments. The process used to develop the study's assumptions is described clearly in the **Background** portion of **Section 5 (page 5-1)** and in preceding pages of this appendix (**Appendix E**). The assumptions were reviewed through stakeholder and public meetings at the beginning of our study to achieve as much local acceptance as possible. Our study does not attempt to predict the future; rather, we have developed information to use as a tool for those agencies and individuals involved with agricultural land conversion and habitat restoration along the river from Red Bluff to Colusa. Changes in our assumptions would certainly change the results of the study, but we feel the assumptions we used are reasonable.

**Study Objectives.** Several groups submitting comments suggested the study should have included a broader array of effects on the local agricultural industry, including agricultural land conversion due to urbanization and other wildlife habitat restoration programs. This broader analysis is not consistent with the objective of the study, which is to estimate the magnitude of the potential economic effects from restoring riparian habitat along the Sacramento River (see the **Objectives** portion of **Section 2, page 2-2**). The study did not attempt to estimate cumulative economic effects that may occur in the study area as a result of other actions. An assessment of the individual county and regional agricultural economies would be a valuable planning tool for local governments. A broader study could assess the cumulative economic effects from a number of actions, including: agricultural land conversion for habitat and urban development; the expansion of irrigated agriculture into areas historically supporting grazing; increased competition from out-of-state and foreign agricultural producers; and the fallowing of agricultural land due to sale of agricultural water to entities outside of the region.

**Recreation Effects.** The socioeconomic assessment addressed recreation effects from two perspectives: potential changes in local recreation spending and consequent effects on county-level employment and income; and potential increases in recreation benefits as measured by recreationists' willingness to pay for enhanced fish and wildlife conditions. Baseline conditions considered the economic activity associated with existing and projected (2030) recreation activity along the Sacramento River. The impact analysis focused on estimating the effects of improved fishery conditions on the employment and income in the local economy and on angler benefits, as measured by the monetary value of fishing to anglers over and above their spending.

The underlying assumptions of doubling fish populations and the associated effect on fishing activity, spending, and angler benefits were challenged by several of the individuals and agencies. To conduct this analysis, we used the most recent comprehensive studies of recreation

activity along the Sacramento River (California Department of Water Resources 1982, California Department of Fish and Game 2001) as bases for our work (see **Table 6-9**, following **page 6-8**). However, the DWR study was conducted more than 20 years ago. Updated, comprehensive surveys of persons engaged in recreation activities along the river would be very valuable as a future effort to improve our understanding of the importance of existing and future recreation activity to the local economies within the 4-county region. This effort would involve considerable additional funding and time to complete.

The more qualitative assessment of our recreation benefits analysis may be seen as less definitive compared to the more straight-forward calculations of agricultural production and income loss, but we attempted to avoid speculating on the recreation benefits to all user groups that potentially would benefit from the program. The analysis technique used to estimate angler benefits is widely used and accepted by resource economists for measuring the benefits (or net economic value) of recreation.

### **Comments in Specific Letters**

**California Farm Bureau Federation.** The majority of this letter is a statement in opposition to the transfer of privately held land to public land and The Nature Conservancy's role in this transfer. The California Farm Bureau Federation (CFBF) also suggests that the section on **Recreation Benefits (page 6-36)** is "voodoo economics". This comment reflects confusion concerning the benefits to "users" of the river, such as anglers, as compared to the benefits to "nonusers" of the river who hold values, as expressed by their willingness to pay, associated with restoring the river ecosystem. Other CFBF issues are discussed below.

- **Changes in community character and food supply.** The CFBF notes that the study would be much more useful if it had addressed the community character and food supply implications of land conversion and habitat restoration. These may be very important issues to some members of the local population; however, because of the limited funds available to conduct our study and the focus on economic as opposed to social effects, we were not able to evaluate these issues. As indicated in the General Comments section of this letter, a broader evaluation of the economic condition of agriculture in the study area would be useful to address a broader range of issues.
- **Flood control benefits and costs.** The CFBF indicates that the habitat restoration scenario analyzed in our report involves dismantling the flood control system in favor of restoration (citing **page 1-7** in the report). **Section 5** of the report describes the assumed **Post Restoration Conditions (page 5-1)**. There is no assumption of dismantling the flood control system. The assumptions discussed on page 1-7 of the report relate to the halting of maintenance on county-maintained roads in the study area where those roads serve only the lands to be converted from agriculture to habitat.

**County of Butte Chief Administrative Office.** The Butte County letter addresses three main issues and one secondary issue that warrant a response. The issues and responses are as follows:

- **Impacts to incorporated versus unincorporated areas.** The County recognizes that the regional economic effects are aggregated at the county level and are not separated by incorporated and unincorporated areas because most of the economic information is primarily available at the county level. The County predicts that there would be an uneven economic effect, with the majority of the economic losses (agricultural production and income) occurring in unincorporated areas and most of the economic gains (recreation spending) occurring in the incorporated areas. While it is true that the agricultural productivity and income losses would occur to farmers with land in the unincorporated areas, it is likely that a large proportion of the agriculture-related spending by the farmers occurs in the cities (i.e. Red Bluff, Chico, Willows, Gridley, Colusa). It is also likely that a large share of the purchases made by farm employees are made in cities. The fiscal impacts associated with property tax changes would certainly impact the County more than the cities within the County.
- **Site monitoring costs.** The County suggests that the report under-estimates the costs of site preparation, planting, maintenance and monitoring. The County assumes that all riparian vegetation existing in the County would require monitoring through the 30-year study time frame. The County also voices concern that the cost of site preparation, planting, maintenance and monitoring may not be met by state or federal programs, creating a potential impact on County funds. The Nature Conservancy has indicated it has no plans to monitor existing riparian areas as part of an ongoing program; its monitoring costs are limited to restored areas, with a goal of tracking restoration success. Any plans for long-term monitoring would be made by and be the responsibility of the land-owning entity, and would presumably be part of its ongoing operations and maintenance costs. Because of limited available local funds for the restoration program, it is likely that preparation, planting, maintenance and monitoring would be curtailed if not funded by federal or state programs. It is not likely that local government would be required to pick up any deficits left by reductions in state and federal spending
- **Fiscal impacts.** The County correctly notes that the fiscal effect analysis does not reflect possible increases in law enforcement as a result of increased recreation activity on the river. As stated on **page 6-24 of Section 6** in the report, the fiscal analysis focused on estimating changes in public revenues generated by land uses in the study area. We assumed that increases in law enforcement costs would be largely offset by reimbursement from the California Department of Boating and Waterways. The County's information indicates that the reimbursements do not cover all costs, so increases in recreation on the river could increase costs to the County.
- The County indicates that its annual matching expenditure for law enforcement on all rivers and lakes will increase from \$41,000 in 2001-2002 to as much as \$58,000 in 2030. These increases are associated with population increases and increased fishing

activity in the County. It is not clear how much of this expense is associated with the Sacramento River. The increase associated with fishing in 2030 is \$5,000; \$2,000 of this total would be the County's burden (Table 5 in McIntosh pers. comm. [see letter attached]). The County's totals also include costs for peak periods such as Labor Day. It is unlikely that increases in riparian habitat along the river will have an effect on these peak periods, as much of the cost is associated with controlling huge influxes of people floating the river on rafts and tubes.

- With these added costs, the County could experience a net negative fiscal effect from the habitat restoration. This possibility has been reflected in changes to the report text on **page 6-24**.
- **ERAF (Educational Revenue Augmentation Fund) allocations.** The County notes that the report's analysis of revenues is a pre-ERAF analysis. While it is true that the numbers do not reflect a post-ERAF condition, the total revenues to the County are accurate. However, the County General Fund will not receive the total allocation; the County's ERAF will receive a portion of the revenue.
- **Flood Risks.** The County letter notes that it is also concerned about the long-term effects of habitat restoration on flood-related costs. Mosquito abatement, levee maintenance, flooding due to back flows, levee setbacks and water diversion structure repairs are all mentioned as areas that could be analyzed in greater detail. We have not attempted to analyze economic effects in these areas because they were not identified as major issues at the outset of our study. Also, we are not aware of a significant source of information that relates increases in riparian habitat to these areas of cost. Further research in these areas of effect may be useful in future economic studies related to restoration activities on the Sacramento River.

**County of Glenn Department of Agriculture.** This letter addresses the apparent imbalance of agricultural costs versus recreation benefits identified in the report. Responses to the major issues are as follows.

- **Agricultural losses versus recreation benefits.** The County of Glenn Department of Agriculture attempts to add the various agricultural sector losses identified in the report and compare them directly to the estimated recreation-related gains. As stated in our report on **page 1-3**, the study is not a cost-benefit analysis. Also, the various components of the analysis are supported by variable data and assumptions regarding future conditions. As an example, the recreation analysis partly relied on data collected in 1982, whereas the agriculture analysis was based, in part, on the most recent information on production rates and values (2001). Furthermore, the recreation analysis assumed the "fish doubling" goal of the Salmon, Steelhead Trout, and Anadromous Fisheries Program Act would be met, whereas the agricultural analysis did not attempt to predict future baseline conditions. Any direct comparison of the numbers in the various sections of the report must be made with caution. The goal of the report is to present information on a broad range of economic effects

associated with agricultural land conversion and habitat restoration as a tool for local decision-makers.

- **Public access to the river.** This letter indicates that additional habitat conversion and transfer of land from private to public ownership will significantly decrease the number of public access points. Plans for management of public lands along the river indicate the opposite. The U.S. Fish and Wildlife Service is in the process of developing a Comprehensive Conservation Plan (CCP) for its Sacramento River National Wildlife Refuge. In that process, the U.S. Fish and Wildlife Service has indicated it intends to provide additional public access opportunities along the river (Foerster pers. comm.). Lands along the river owned by the California Department of Fish and Game are currently open to public access.
- **Doubling of fish numbers.** The letter questions an assumption that fish numbers in the Sacramento River will double over the 30-year time frame of the study. This assumption is a core objective of the state Salmon, Steelhead Trout, and Anadromous Fisheries Program Act passed in 1988 (see **page 6-7** in the report). It is also a goal sought by the Central Valley Project Improvement Act (CVPIA) and its Anadromous Fisheries Restoration Program.
- **Report assumptions.** The County Department of Agriculture indicates that the study is based on assumptions and does not reflect factors such as market fluctuations and technology changes. The report assumption questions are addressed in the General Comments section of this letter, on a previous page.

**Denny Bungarz.** Mr. Bungarz forwarded two editorial comments to The Nature Conservancy, regarding text on **pages 1-7 and 6-22**. Changes have been made to the text of the report in response to these comments.

**Family Water Alliance.** The Family Water Alliance (FWA) questions a number of the report's assumptions and suggests that a number of the potential economic benefits identified are unsubstantiated or over-stated. Responses to the key points in the FWA letter follow.

- **State and federal payments.** The FWA indicates that the state and federal payments to local government contained in the report "do not have the values ascribed." These numbers were taken from public documents that are routinely used as a source of state and federal revenue-sharing payments and in-lieu payments (see **page 6-22** in the report). The references are U.S. Fish and Wildlife Service (2001a) and California Department of Fish and Game (2000), listed in the report's **Citations** section (**Section 8**).
- **Indirect regional economic effect multipliers.** FWA suggests that the regional economic effects analysis should have used a multiplier of "up to seven times" when considering the indirect effects of agricultural production losses. The basis for using this number is not indicated. The multipliers for indirect effects on the regional economy are contained in the IMPLAN model used to estimate the changes in

regional employment and income. As described on **page 6-10** and in **Appendix B** of the report, this model is supported by databases of the industrial sector make-up of each individual county in the country. Use of this model as a predictor of regional economic effect is a well-accepted practice in the field of economics.

- **Increased law enforcement and emergency services costs.** FWA indicates that there was no attempt to address law enforcement and emergency service costs. This issue is addressed in the response to Butte County's comments on the fiscal impact assessment.
- **Local costs of increasing access.** The FWA letter indicates that local government will not be able to finance improvements in access along the river in the future. We agree that local funding for significant improvements is unlikely. Because our report assumes all of the converted land would eventually be owned by federal or state agencies, it would be more accurate to assume these improvements would be funded by the federal and state governments as part of their ongoing operations and maintenance.
- **Risk of flooding.** The FWA suggests that the riparian restoration is likely to adversely affect the Sacramento River flood control system by adding riparian forest and undergrowth. This is an ongoing concern related to habitat restoration along the river. To address this issue, The Nature Conservancy and federal/state agencies routinely conduct site specific hydraulic modeling of proposed restoration projects. If these analyses suggest some significant effect on the flood control system, the planting programs are modified to reduce or eliminate the risk. The study does not suggest or assume that there would be a program of setting back levees to accommodate the restoration effort.
- **Stream bank erosion.** The FWA letter refers to a discussion of bank erosion on **page 5-3** of the report and states a concern for Flood Control Project levees. The discussion on page 5-3 relates to the immediate banks of the active river channel and any small, privately maintained levees within individual parcels. The discussion does not suggest that Flood Control Project levees will be allowed to deteriorate. It is assumed that the entire Flood Control Project and its maintenance will remain unchanged (see **page 5-3, final paragraph**).
- **Williamson Act payments.** The FWA suggests that loss of Williamson Act payments associated with agricultural land conversion be reflected in the study. Reference is made to **Table 6-21 on page 6-26**; this table clearly identifies potential Williamson Act losses to each county.
- **Fish catch rates.** The FWA asks for clarification as to why anticipated fish catch rates (proposed to double) and fishing activity increases (26% increase estimated) are different. These percentages are different because the models used in the analysis predict that a doubling of catch rates would result in a 26% increase in fishing days.

The catch rate is not directly related to the number of fishermen on the river; it is directly related to the number of fish in the river.

- **Public Access.** The FWA correctly notes that the report assumes recreation access along the river will not increase over the 30-year study period. This assumption makes the estimates of future recreation benefits very conservative. The U.S. Fish and Wildlife Service has indicated that public access may be increased through its Sacramento River National Wildlife Refuge (Foerster pers. comm.). The statement on **page 1-9** of the report is simply indicating that the recreation-related economic benefits of habitat restoration could be greater if access was improved.
- **Angler benefits.** The FWA states that the economic benefit attributed to anglers' willingness to pay is dubious. The calculation of this benefit is a standard practice when estimating the dollar value of fishing benefits. The estimates were derived using modeling techniques that are widely accepted in the recreation economic field. The **Analytical Framework** discussion in **Section 6** of the report lets the reader know that the social costs and benefits, including the reported angler benefits, accrue to a broader group of people, and are not limited to the region directly affected by the project.
- **Doubling of fish populations.** Refer to the responses to the County of Glenn Department of Agriculture for a discussion of the fish population assumption.

**Glenn County Resource Conservation District.** The Glenn County Resource Conservation District (GCRCD) letter suggests that the report assumption regarding future land ownership (all converted land owned by state and federal agencies) is inappropriate. The letter also suggests that the area included in the study and the time period analyzed should be expanded. Comments regarding the scope of the study and its assumptions are addressed in the General Comments section of this letter.

**Shirley Lewis.** Ms. Lewis' comments relate primarily to the assumptions made in conducting the analysis. Her comments are addressed below.

- **Study time frame.** The letter indicates that habitat restoration has been occurring longer than the study time frame (2000-2030). This fact should be clearly stated in the report. Reference is made to **page 5-3** of the report where study time frame is identified. A decision was made at the outset of the study to limit the evaluation to future economic effects and not explore past effects. The General Comments section of this letter describes the process of developing assumptions for the study.
- **Costs associated with the return to more natural processes on the river.** Ms. Lewis correctly notes that the onset of a more natural river meander and deposition could adversely affect irrigation projects. This potential effect was not addressed because of the limited information available to characterize the potential costs. Future reviews of specific restoration projects along the river could include a discussion of this issue. The assertion that a more natural river meander and erosion

process will add sediment to the delta is not accurate. Typically, riparian vegetation acts to trap and settle out sediments along streams in an alluvial valley such as the Sacramento.

**U.S. Fish and Wildlife Service, Sacramento National Wildlife Refuge Complex.** The U.S. Fish and Wildlife Service (USFWS) letter does not require a response. The letter indicates that the future management of the Sacramento River National Wildlife Refuge is being evaluated through the CCP process. The USFWS is considering options to improve public access to the river through the refuge properties.

**State of California Wildlife Conservation Board.** The letter from the Wildlife Conservation Board (WCB) does not require a detailed response. The WCB notes that other studies are underway in the Central Valley to estimate the economic implications of improved hunting and fishing opportunities. The WCB also correctly notes that the Sacramento River Conservation Area socioeconomic study assumes that none of the income received by farmers for the sale of their riverside property is reinvested in the local communities. This assumption results in an over-statement of the effects of taking agricultural lands within the study area out of production because some of the income from the sales is reinvested in the affected communities. This assumption, which was noted in our report, was made because there was insufficient information available to identify the extent of reinvestment in the local economy. The WCB also suggests that the report should have considered the use of conservation easements rather than purchase in fee title for land transfers. Our report chose to make the conservative assumption that all lands would be transferred in fee title.

Jones & Stokes and TCW Economics wish to thank CALFED, The Nature Conservancy and all of those local individuals and entities that participated in preparing the Socioeconomic Assessment of Proposed Habitat Restoration within the Riparian Corridor of the Sacramento River Conservation Area. We feel that the development and review of this assessment has been beneficial to both The Nature Conservancy and the communities along the Sacramento River as they contemplate the restoration of riparian habitat in the river corridor. We hope that the attached final report continues to support the dialogue surrounding agricultural land conversion in Butte, Colusa, Glenn and Tehama Counties.

Sincerely,

Mike Rushton  
Principal

/attachments

cc: Thomas Wegge, TCW Economics  
Tom Smith, Ayres Associates