Executive Summary

Background

Butte Creek originates in the Jonesville Basin, Lassen National Forest, at an elevation of 7,087 feet. Several small tributaries converge in the Butte Meadows Basin, an area characterized by a series of wide meadows and repeating series of pools and riffles. Butte Creek transitions from the Butte Meadows area approximately 25 miles through a steep canyon to the point where it enters the valley floor near Chico. The Sutter Buttes, located in the center of the Sacramento Valley divide the valley section of Butte Creek. The upper portion of this section is approximately 45 miles in length extending from Highway 99 near Chico to the point where Butte Creek first enters the Sacramento River at the Butte Slough Outfall Gates. Butte Creek in this reach is bordered almost entirely by agricultural lands, including several state and federal wildlife areas, and is generally contained by a series of levees. Butte Creek flows are regulated into the Sacramento River by the Butte Slough Outfall Gates to accommodate both flood flows and agricultural needs in the Sutter Bypass area. The Sutter Bypass section of Butte Creek is approximately 40 miles in length. Butte Creek splits into two channels, known as the East and West Barrows, as it enters the Sutter Bypass near Highway 20. During normal flow periods, Butte Creek enters the Sacramento River via Sacramento Slough, immediately upstream of the mouth of the Feather River near Verona (Mills et al., 1996).

The watershed's richly diverse and considerable resources of water, farmland, timber, and recreational opportunities enrich the lives of both its residents and visitors. However, increased urbanization and growing demands on the resource base have created issues of concern to all. They include, but are not limited to: endangered species protection, water supply demands, land use practices, fire and flood hazard, urban development, and natural habitat destruction. In an attempt to address these and other concerns, the Butte Creek Watershed Conservancy (Conservancy) was formed in September 1995 to encourage the preservation and management of the Butte Creek Watershed through watershed-wide cooperation between landowners, water users, recreational users, conservation groups, and local, state and federal agencies. The mission statement of the Conservancy reflects that dedication: "The Butte Creek Watershed Conservancy was established to protect, restore and enhance the cultural, economic and ecological heritage of the Butte Creek Watershed through cooperative landowner action."

The Conservancy received non-profit 501(c)3 status in November of 1996. Shortly thereafter, the Conservancy prepared a Memorandum of Understanding (MOU) (see Appendix A) to create a Butte Creek Watershed Management Strategy. The MOU established a voluntary and cooperative agreement between 24 signatories to work together in a watershed planning process. It is the Conservancy's belief that stakeholders working cooperatively have the greatest potential for streamlining resource management and minimizing conflict between landowners, water users, government agencies and conservation groups.

In 1996, the Conservancy enlisted the services of the California State University, Chico Department of Geography and Planning Department (CSUC) and the University Research Foundation to apply for State, federal and private grants for the development of a Watershed Management Strategy. Through the generosity of the US Fish & Wildlife Service, CALFED, National Fish & Wildlife Foundation, Bureau of Reclamation, and the Metropolitan Water District, the Conservancy set in motion the creation of the Butte Creek Watershed

Management Strategy. This document is the first volume of that strategy – its Draft Existing Conditions Report. The Watershed Management Strategy Document will follow.

General Stakeholder & Watershed Advisory Committee Process

Sustained resource protection and management requires the coordinated effort of many concerned individuals. The Conservancy and California State University, Chico invited through media releases, flyers and other public outreach efforts stakeholders representing landowners, timber interests, urban representatives, agriculture, recreational groups, irrigation districts, conservation organizations, waterfowl clubs, and local, state, and federal agencies, to participate in an initial General Public Stakeholder Meeting. From this meeting, nominations of individuals with diverse interests and representing different reaches of Butte Creek resulted in the creation of the Watershed Advisory Committee (WAC). Additionally, agency personnel with distinct expertise were invited to serve as members to the Technical Advisory Committee (TAC). For further input, stakeholders were invited to general membership meetings to participate in a scoping process (6 four-hour meetings) to identify watershed Issues and Concerns for prioritization. These issues were categorized into 15 groups, and from these, the top ten issues and concerns for the watershed were defined. These concerns were further refined by the Technical Advisory Committee and can be found in the *Issues and Concerns as Related to Existing Conditions* Chapter.

The WAC and TAC were charged to work with CSUC and the Conservancy in identifying and resolving important watershed issues. To date, information on existing conditions has been compiled by CSUC faculty and graduate students and presented to stakeholders and members of the WAC and TAC for review and comment. All meetings have been well attended and the diverse group has provided a full spectrum of viewpoints to all discussions, ultimately increasing the scope of issues that are covered in this report. Additionally, WAC and TAC members have been identifying data gaps, which will play a key role in the evolution of the already developing Watershed Management Strategy**.**

Existing Conditions Report

The purpose of the Existing Conditions Report is to gather together in one document as much descriptive information as possible about the physical, natural, and cultural resources of the Butte Creek Watershed. To a large extent, the compilers have had to rely on data and descriptions of resource conditions contained in prior reports. This information has been reviewed and incorporated into this report with the appropriate citations of source materials. In many cases, the information contained in the existing literature has been refined by the lead authors based on their knowledge of the resources of the Central Valley and the Sierra Nevada.

A similar effort, focusing predominately on physical and natural characteristics, has been undertaken in the lower portion of Butte Creek - *The Lower Butte Creek Project*. Stakeholders working with The Nature Conservancy and Jones & Stokes, Inc. have focused on developing mutually beneficial and acceptable alternatives to improve fish passage in the Butte Sink, Butte Slough, and Sutter Bypass sections of Butte Creek while maintaining the viability of agriculture, seasonal wetlands, and other habitats *(The Lower Butte Creek Project – Final Project Report*, June 1998). For this reason, the scope of this document has emphasized the existing conditions within the Butte Creek Watershed from its headwaters to Highway 162.

It is anticipated that this information will serve as a baseline for future investigations in the watershed. As an inventory of what is known about the Butte Creek Watershed, this document will also serve to point out what is not known about the resources in the watershed (referred to as “data gaps”). The long-term goal is that this report will provide the reader with an analysis of watershed conditions rather than just lists and maps of what is present. Therefore, to the extent possible, the authors of each chapter have attempted to evaluate the condition of each resource in order to clarify the present level of understanding of the “health” of the watershed and the specific resources within the watershed.

This Existing Conditions Report is intended to function like an open book, which explains why it is formatted to fit into a three-ring binder. The reason for this is simple, as this format will allow for the insertion of periodic updates as new information and interpretation of data are generated. In addition to the insertion of new material at the end of each chapter, it is expected that periodically certain, as of yet unfinished, chapters will be reissued.

Geographic Information System (GIS)

In addition to preparing an Existing Conditions Report and formulating a Watershed Management Strategy, the Conservancy obtained funding to develop a Geographic Information System (GIS) for the Butte Creek Watershed. The CSUC Geographic Information Center (GIC) deserves recognition for its leadership in developing these comprehensive resource maps. The nature and quality of the Butte Creek Watershed GIS maps are a direct result of the level of information that was generously shared by all cooperating public and private sources. The GIS provides the following features:

- Information management tool to assist in decision formulation process
- Quality mapping products for public presentation
- Record-keeping/Monitoring tool
- Potential to develop future resource information layers

The GIS maps contain a resource data inventory developed by gathering data layers from participating agencies and combining them in a common format for subsequent analysis and display. The GIS maps developed to date include:

- Base Map of Watershed
- Physical Features
- Hydrology
- Land Use
- Soils
- Vegetation
- Land Ownership
- 7.5 Minute Quadrangles
- Diversions (Inflows & Outflows)
- Fish Habitats
- Climate Stations
- Surface Water Flow Stations
- Surface Water Quality Stations
- Levee & FEMA Zones Map
- Groundwater Monitoring Stations
- Groundwater Quality Stations
- Recreation Facilities

These maps represent an important resource evaluation tool to be used concurrently with the Existing Conditions Report in the development of the Watershed Management Strategy. They can be found in the Appendix section of this document (see Map Appendix).

Education Program

The Butte Creek Education Project (BCEP) is a cooperative effort supported by funding from the US Fish and Wildlife Service, CALFED Category III, and Environmental Protection Agency 319h (EPA). The BCEP is administered by CSUC Watershed Project with the support of the Conservancy.

Essential aspects of the education program are to gain the support of teachers, schools, districts, and the community by providing the resources, equipment, personnel, and knowledge to facilitate involvement in watershed activities. Through the 1996 - 1997 and 1997 - 1998 school years, the initial core of 8 teachers has expanded to 20 teachers at all grade levels. This group has initiated a number of different projects. The first project was to develop and organize classroom ready curriculum on selected watershed themes. Workshops on using watershed curriculum in and out of the classroom were conducted with the number of workshops to increase in the coming school years. Many of the core teachers have begun using watershed curricula such as the Adopt-A-Watershed program in their classrooms. Integration of other existing education programs such as California Department of Fish and Game's "Salmon and Steelhead in the Classroom, Eggs to Fry" and the Sacramento River Discovery Center's river awareness programs have been used with great success.

Restoration work and field trips have also been important aspects of BCEP. Teachers from Bidwell Junior High have taken their students on a number of different field trips to Butte Creek and have participated in riparian plantings at a number of different sites including the Parrot-Phelan Dam and the Honey Run Covered Bridge. Chico High West, a school within a school, focused its studies on Butte Creek. Field trips and presentations by agencies and landowners were part of the curriculum, culminating in group presentations by the involved students on different aspects of Butte Creek. Pleasant Valley High's (PV) Colegio students were responsible for riparian restoration plantings at the Parrot-Phelan Dam, and other PV students did plantings at the Keeney Property in Durham. Once again, speakers were invited to PV to present and provide information to the students. As a part of the BCEP program, volunteer efforts provided by Americorps have been coordinated with core teachers and their students to clean up degraded areas, restore riparian areas and maintain these project sites. These Americorps members have been trained in watershed education, and their knowledge and expertise in watershed education has been a great aid to the BCEP.

Further involvement of the core teachers and their students in local community activities which educate the public about their watershed include Butte Environmental Council's *Endangered Species Fair*; the BCWC's *Spring Run Salmon Celebration*; and CSUC's *Earth Week Celebration*. Educational materials such as slide shows, videos, printed materials, and a presentation booth are also being developed for use at workshops and community events to further public education about their watershed. Specific workshops for teachers on mini grants for education, as well as for the public on general watershed information have been implemented.

Lastly, BCEP has involved the Chico Unified School District (CUSD) in supporting watershed education. With funding from EPA and CALFED, CUSD has hired, from within its own district, a science teacher trained in watershed education to be its Watershed Education Coordinator on a 2/5 basis to specifically develop and implement watershed curriculum, and train other teachers in this curriculum in grades K-12. This curriculum would include water quality monitoring, instruction in the life history of anadromous fish species, associated plant and insect life, non-point source pollution remedies, and riparian restoration. Further goals that are in progress are to establish a field classroom, make available the Watershed Resource Lending Library, and the adoption of classroom watershed curriculum by as many Butte County Schools as possible. Involvement of the teachers and the students, and in turn the public, throughout the watershed is an important element for broadening the awareness of and commitment to their watershed's health.

Watershed Management Strategy

The Watershed Management Strategy Report will be the sequel document to the Existing Conditions Report. The development of the Watershed Management Strategy is dependent on the continued cooperative effort of Conservancy, stakeholders, the WAC, the TAC, and California State University, Chico. Guided by the Draft Existing Conditions Report, GIS mapping, and the prioritized concerns and issues raised by the General Stakeholder meetings, the WAC plans to continue meeting monthly to discuss the nature and development of the Watershed Management Strategy.

Key pieces of information will continue to be available to the WAC decision-making body. This summer, two research efforts are due to commence: 1) Upper Watershed Road Survey; 2) Fluvial Geomorphology Analysis. Both of these reports will add significantly to the base of knowledge regarding the watershed and provide guidance to those individuals charged with creating the management strategy. As knowledge of the watershed increases, new management actions will also develop. The Existing Conditions Report and the Watershed Management Strategy will provide the framework for an "adaptive management" approach to achieve a reasonable balance among the diverse demands on the resource base of the Butte Creek Watershed. Therefore, both documents will never be fully "completed", but instead will live on to be continually updated and refined throughout the planning process.

We look forward to your review of this "draft" document and encourage you to make any needed additions or suggestions.