

EXHIBIT 1

BIOLOGICAL OPINION

ACTION AGENCY: U.S Army Corps of Engineers, San Francisco District

ACTION: Monterey County Water Resources Agency, Salinas Valley Water Project in Monterey County, California.

CONSULTATION CONDUCTED BY: National Marine Fisheries Service, Southwest Region

FILE NUMBER: SWR/2003/2080
(Admin. No.: 151422SWR2003SR8711)

DATE ISSUED: _____

I. INTRODUCTION

Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires Federal agencies to insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of threatened or endangered species or destroy or adversely modify critical habitat. The section 7 regulations define “jeopardize the continued existence of” as “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, number, or distribution of that species.” The regulatory definition of critical habitat has been invalidated by Federal courts. This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR §402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat (NMFS 2005a).

The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) is conducting a formal consultation with the U.S. Army Corps of Engineers (Corps) on the issuance of a permit to the Monterey County Water Resources Agency (MCWRA). MCWRA proposes to control seawater intrusion, improve the efficiency of water delivery in the Salinas Valley for agriculture and urban uses and improve steelhead habitat through the construction of the Salinas River Diversion Facility (SRDF), modification of the spillway at Nacimiento Dam, and changes to the operation of Nacimiento and San Antonio dams. This diversion facility and operational changes, collectively, are known as the Salinas Valley Water Project (SVWP). The SVWP may adversely affect South-Central California Coast (SCCC) steelhead (*Oncorhynchus mykiss*) protected as threatened under the ESA and its designated

critical habitat, and, therefore, requires a formal consultation pursuant to section 7(a)(2) of the ESA.

Our task in this consultation is to provide a determination regarding jeopardy and adverse modification relative to the proposed action. This biological opinion also provides the analysis supporting our determination.

MCWRA water management activities in the Salinas basin are extensive and potentially have many impacts to steelhead and their habitat. It is, therefore, important, in light of our analysis, to be clear about what we are, and are not, consulting on. In this biological opinion, we analyze the effects of both the proposed construction/operation of the SRDF and Nacimiento Spillway modification and those changes in flow releases from the Nacimiento and San Antonio dams that would not otherwise occur without the operation of the SRDF. This includes any change in flows along the Salinas River mainstem as well as changes in flows to the Salinas River Lagoon.

We are not analyzing ongoing dam operations and maintenance as a part of the proposed action because they are neither indirect effects nor interrelated or interdependent actions to the proposed action. Most dam operations and maintenance are a part of the environmental baseline to which the effects of the proposed action will be added. As a result, the Incidental Take Statement for this opinion does not exempt any incidental take resulting from those baseline operations. This includes the bulk of the flow released from the Nacimiento and San Antonio dams. One exception is modified operations of these reservoirs to meet the purposes of the proposed action. Those modified operations are considered interrelated with the Corps' proposed action and are considered in the Effects of the Proposed Action section of this opinion.

In this document, we present our analysis and conclusions in the conventional format for biological opinions as described in the Endangered Species Consultation Handbook (U.S. Fish and Wildlife Service and NMFS 1998). It begins with a review of the consultation history and a description of the project. Following that is Status of the Species and Critical Habitat, Environmental Baseline, and Effects of the Proposed Action sections which provide our analysis of the project. The opinion concludes with NMFS' determination regarding the impacts of this proposed project on species survival and recovery, and the value of critical habitat. An Incidental Take Statement follows, which defines the amount or extent of harm to the species and/or their habitat. It also provides terms and conditions to minimize the take.

The Status of the Species and Critical Habitat Section portrays the condition of the species (and their habitat, including critical habitat) relative to the species' probability of survival and recovery and the conservation value of critical habitat by describing how the species is surviving and recovering given its life history strategy and the condition of its environment. The Environmental Baseline describes and analyzes the current and expected future condition of the species and its habitat, including critical habitat, in the action area. The Effects of the Proposed Action section describes and analyzes the effects of the proposed project on habitat, including critical habitat Primary Constituent Elements (PCEs) of critical habitat, given the species' and critical habitat's baseline condition, the exposure of critical habitat and steelhead to the physical, chemical, and biotic changes in the environment as a result of the proposed action, and the expected response of steelhead and critical habitat to these changes. Once the effects are

described, we assess the ramifications of the effects to critical habitat and listed species in the action area on the conservation value of critical habitat and the survival and recovery of the species at the Distinct Population Segment (DPS) scale given their status and the environmental baseline.

The issues NMFS is obliged to address in this opinion are wide-ranging, complex, and often not referenced in scientific literature. We base many of our conclusions on explicit assumptions informed by the available evidence. By this, we mean to make a reasonable effort to compile the best scientific and commercial empirical evidence related to the analysis and to then apply general and specific information on salmonid biology from the published literature to make inferences and establish our conclusions.

Second, when we address uncertainty in our analyses we apply that portion of section 7(a)(2) which dictates that Action Agencies are to “insure” that their actions are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitat. In other words, Action Agencies are charged with avoiding Type II errors (*i.e.*, concluding that there was no effect when, in fact, there was an effect). At times this can create a lack of understanding of section 7 determinations within the scientific community, which often focuses on minimizing the potential for Type I errors (*i.e.*, concluding that there was an effect when, in fact, there was no effect); however, it is important to recognize that we have different purposes.

The need to minimize the potential for Type II errors results in providing the benefit of the doubt to the species. This approach is supported by the 1979 Congressional Record created when Congress amended the ESA to allow the Services to develop their biological opinions using the best information currently available or that can be developed during the consultation and concluded that the language “continues to give the benefit of the doubt to the species, and it would continue to place the burden on the action agency to demonstrate to the consulting agency that its action will not violate Section 7(a)(2)” (H.R. Conference Report No. 697, 96th Congress, 2d Session 12, 1979).

II. CONSULTATION HISTORY

MCWRA applied to the Corps for permits for two projects in the Salinas River; the Salinas River Mouth Breaching Program and the SVWP, in 2000 and 2002, respectively. NMFS recommended to the Corps and MCWRA to batch the two projects together as one consultation to simplify the analysis of impacts to listed species. The Corps agreed to combine the two consultations, although the Corps would still issue separate permits; one for the Breaching Program and one for the SVWP. At a meeting on April 1, 2005, MCWRA agreed to that plan. In the course of completing the biological opinion for the SVWP, the issue of batching this project with the river mouth breaching program was revisited. On March 28, 2006, NMFS decided to expedite completion of the consultation for the SVWP by separating the consultations for the SVWP and the lagoon breaching activities. This is reasonable because lagoon management and breaching activities have always been identified as a separate action from the SVWP, and the two actions were originally batched solely as a matter of convenience.

The following is a timeline history of the SVWP consultation:

NMFS received the Corps' letter requesting initiation of section 7 consultation for the MCWRA's SVWP on June 4, 2002.

Prior to receiving the request for consultation, NMFS commented on two versions of the Draft Environmental Impact Report, by letters dated December 17, 1998, and September 6, 2001. These comment letters identified NMFS' concerns regarding potential effects of the project on threatened steelhead.

The biological assessment (BA) for SVWP was received on June 6, 2002. In a letter dated July 26, 2002, NMFS informed the Corps that MCWRA had requested a meeting to discuss and review the BA, and that after meeting and reviewing the BA, NMFS would determine if additional information would be needed to initiate section 7 consultation. NMFS and MCWRA's consultants met on September 18, 2002, October 3, 2002, and December 20, 2002, to discuss the proposed project and evaluate the completeness of the BA. Based on these meetings and review of the BA, NMFS determined the BA was incomplete. In a letter to the Corps dated January 24, 2003, NMFS requested additional information to support section 7 consultation for SVWP. The request sought: 1) information on streamflow regimes under four water management scenarios related to SVWP, 2) a formal response to proposed modifications for smolt outmigration, 3) a clarification of proposed water diversion rates, 4) a description of condition and availability of spawning and rearing habitat in Nacimiento and San Antonio rivers below the existing dams, 5) a description of current water conservation measures in the Salinas Valley, 6) a description of water quality in the Salinas River and action area, and 7) an assessment of potential predation by pinnipeds resulting from implementation of SVWP. NMFS' January 24, 2003, letter also defined the scope of the consultation to include all operations of the Nacimiento and San Antonio dams. MCWRA and NMFS met on February 5, 2003, to discuss this information request. MCWRA provided the information requested in the NMFS January 24, 2003, letter throughout 2003 and 2004.

In a meeting on June 2, 2003, NMFS notified MCWRA that flow criteria identified in the BA for steelhead migration were flawed, provided MCWRA with an analysis of the deficiencies of the information, and requested MCWRA work with NMFS to determine appropriate flows for steelhead migration. During a meeting with MCWRA and its consultants on July 24, 2003, NMFS proposed a field study to develop a flow/depth relationship specific to the action area in the Salinas River. NMFS provided *A Study Plan for Evaluating Passage Flows for Steelhead in the Salinas River* to MCWRA on August 7, 2003.

NMFS, MCWRA, and its consultants held further meetings through the end of 2003, to discuss the status of information requested by NMFS, evaluate the feasibility of completing the proposed flow study, and develop a timeline for initiating and completing section 7 consultation.

On January 13, 2004, NMFS received Water Resources and Information Management Engineering, Inc.'s (WRIME [MCWRA's consultant]) December 2003, *Hydrologic Analysis of Salinas River Flows in Response to NOAA Fisheries Requests for Further Information on the*

Biological Assessment for the Salinas Valley Water Project. On March 4, 2004, another meeting was held with NMFS, MCWRA, and its consultants to discuss the hydrologic analysis report. It was agreed MCWRA would provide NMFS additional information regarding, among other issues, the statistical methodology to address the estimation error for unimpaired flows and a comparison of flow conditions among scenarios for 1949 to 1956 water years.

Between March 5-9, 2004, NMFS, with assistance from MCWRA and California Department of Fish and Game (CDFG) staff, conducted a single event flow study on the middle reach of the river above and below Soledad, based on the study plan from August 7, 2003.

On April 8, 2004, NMFS received the *Amendment to December 2003 Report Hydrologic Analysis of Salinas River Flows*, addressing NMFS' concerns from the March 4, 2004, meeting. In August, 2004, NMFS contracted with Natural Resources Consulting Engineers, Inc. (NRCE) to independently review WRIME's hydrologic analysis and estimates of unimpaired flows in the Salinas River. On October 29, 2004, NMFS, MCWRA, WRIME, and NRCE met to discuss how to determine passage flows and what other information was still needed to initiate consultation. MCWRA informed NMFS that preliminary engineering plans for both the fish screen and the fish ladder would not be completed for at least 3 to 4 months. At this meeting, MCWRA committed to meeting NMFS' fish ladder and fish screen criteria in its engineering plans in order for NMFS to initiate consultation. NMFS agreed to initiate consultation before passage flows were determined and a flow prescription developed; however, NMFS made clear that the biological opinion would not be able to be completed until this information was made available.

In a letter to NMFS dated November 30, 2004, MCWRA committed to meeting the standards outlined in the fish screening and fish ladder criteria for diversion facilities prepared by NMFS and CDFG. They also committed to modifying the slide gate structure at the Salinas River Lagoon to include a fish screen. NMFS initiated section 7 consultation for the SVWP with the Corps on December 9, 2004.

At a meeting on April 1, 2005, NMFS presented its *Salinas Valley Water Project Flow Proposal for the Biological Needs of Steelhead in the Salinas River* to MCWRA. From April through August, 2005, a technical working group made up of staff from NMFS and MCWRA, and its consultants, met on a regular basis to develop the final flow prescription. On September 21, 2005, NMFS received the *Draft Supplement to the Salinas Valley Water Project Biological Assessment* from MCWRA. On October 11, 2005, NMFS received the final *Supplement to the Biological Assessment for the Salinas Valley Water Project, Salinas River, California*, and the *Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River* from MCWRA. After NMFS' review of the reports, MCWRA provided an *Errata to the Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River* on November 8, 2005, December 19, 2005 and January 27, 2006. These errata provided corrections and clarifications resulting from NMFS' review.

The Salinas River Channel Maintenance biological opinion was issued to the Corps on July 23, 2003. The Corps 404 permit for this project allows landowners to perform channel maintenance in the Salinas River beginning on September 1 of each year. At that time, MCWRA currently shuts off flows to the river to allow maintenance in the dry river channel. The biological

assessment for a Corps permit for the SVWP provides for flows in the Salinas River through October 31, except in very dry years. Included in the *Supplement to the Biological Assessment for the Salinas Valley Water Project, Salinas River, CA*, it was stated the Salinas River Channel Maintenance Project permit would not be modified. This results in these two permits potentially being in conflict with each other. On December 15, 2005, the Corps regulatory biologist contacted MCWRA's assistant general manager to determine which project would take precedence. In a phone conversation on December 19, 2005, the Corps regulatory biologist informed NMFS the SVWP, according to MCWRA, would take precedence over the Channel Maintenance Project.

On July 28, 2006, NMFS issued a draft biological opinion to the Corps and MCWRA. On November 7, 2006, MCWRA provided written comments on the draft biological opinion; the Corps did not provide any comments. On February 6, 2007, NMFS met with MCWRA and their consultants (the Corps did not attend the meeting) to discuss the draft biological opinion and MCWRA's November 7, 2006, comments. This opinion incorporates MCWRA's written comments and those provided at the February 6, 2007, meeting.

A complete administrative record of this consultation is on file in the NMFS Santa Rosa Area Office.

III. DESCRIPTION OF THE PROPOSED ACTION

The Federal action under review in this ESA section 7 consultation is the proposal by the Corps to issue to MCWRA a Clean Water Act (CWA) section 404 permit authorizing the construction of a seasonal river diversion facility with a small dam and diversion structure to impound and distribute increased spring, summer, and early fall reservoir releases (aquifer conservation releases) to provide surface water deliveries for irrigation. Surface water for irrigation will help to offset current groundwater pumping in some areas of the coastal Basin, thereby reducing saltwater intrusion. The diversion facility and dam will be constructed 2008 or 2009 and are expected to take one year of construction to complete. In-channel work will occur during the summer (July 1 - October 31). Information included in the Description of the Proposed Action comes from EDAW 2001, ENTRIX and EDAW 2002, MCWRA 2005a, MCWRA 2005b, MCWRA 2005c, MCWRA 2005d, MCWRA 2006a, and MCWRA 2006b.

A. Background

Groundwater is the source for most of the urban and agricultural water needs in the Salinas River Valley Basin. An ongoing imbalance between the rate of groundwater withdrawal and recharge has resulted in overdraft conditions in the Basin that have allowed seawater from Monterey Bay to intrude inland approximately six miles in the 180-foot deep Aquifer and approximately two miles in the 400-foot deep Aquifer (MCWRA 2005). Since 1949, an average of 10,000 acre-feet (AF) of seawater per year has intruded into Basin aquifers and, by 1999, more than 24,000 acres of land were underlain by seawater intrusion. Previous to basin overdraft, the stratified coastal aquifers were supplied freshwater by the deeper, non-stratified upper valley's aquifer flows. Aquifers intruded with seawater are largely unusable for either agricultural or municipal

purposes and many wells have been abandoned or destroyed. The Nacimiento Dam and San Antonio Dam, and its reservoirs, were constructed, in part, to address the overdraft issues. Nacimiento and San Antonio reservoirs began operations in 1957 and 1967, respectively. The two reservoirs, built and operated by MCWRA, provide a total of just over 700,000 AF of storage for subsequent aquifer conservation release, *i.e.*, release of stored water throughout the dry season to recharge the Basin aquifer through the bed of the Salinas River. To halt further groundwater degradation and prevent seawater from moving further inland, aquifer pumping and recharge rates must be brought into balance.

B. Components of the SVWP

As objectives for the SVWP, MCWRA proposes to: halt the increase in seawater intrusion and eventually reduce the amount of seawater in the basin's freshwater aquifers, provide adequate water supplies to meet current and future water needs (the year 2030 was used for the future planning horizon), and improve the hydrologic balance of the groundwater within the Basin. To those ends, MCWRA proposes a series of structural and program-based (operational) components (the SVWP). Implementation of the SVWP would provide water for surface water deliveries and additional aquifer replenishment (aquifer conservation releases) by reoperating the Nacimiento and San Antonio reservoirs and modifying the Nacimiento Dam spillway. Also, the SVWP would offset current groundwater pumping in some areas of the coastal Basin by installing a seasonal river diversion facility with a small dam and diversion structure to impound and distribute increased spring, summer, and early fall reservoir releases (reoperated aquifer conservation releases) to provide surface water deliveries for irrigation. The SVWP does not provide a new source of water for the Basin. Rather it will release less stored water in the fall and winter and release more stored water during the late spring and early fall – a period with historically low precipitation.

All of the activities proposed by MCWRA, if undertaken, may affect ESA-listed species or designated critical habitat. Some of the activities proposed by MCWRA will require a discretionary CWA section 404 permit from a Federal agency – the Corps. Therefore, the Corps is consulting with NMFS to insure that issuance and implementation of the Corps permit is not likely to jeopardize the continued existence of ESA-listed species or result in the destruction or adverse modification of designated critical habitat. MCWRA has proposed some actions which, although they do not require Federal permits, are interrelated or interdependent to the Corps permitted activities. Interrelated activities are activities that are part of a larger action and depend on the larger action for their justification. Interdependent activities are activities that have no independent utility apart from the action under consultation. Interdependent and interrelated activities are analyzed under section 7 of the ESA along with the Federal action. These Federal and nonfederal activities are described in the following subsections.

1. Corps Permitted Activities

MCWRA proposes to install a surface water diversion facility with a small dam and intake structure, fish bypass facilities, a pump station, and a pipeline connection to the Castroville Seawater Intrusion Project (CSIP) system, collectively called the Salinas River Diversion Facility (SRDF). The SRDF will be located at river mile 4.8. When the Salinas River lagoon is

closed to the ocean and the lagoon is above approximately 2.0 feet (ft) water surface elevation, standing water will be present at the downstream side of the diversion dam of the SRDF. The SRDF will operate seasonally from April 1 through October 31, if enough surface water is available. As currently proposed, maximum rate of diversion will be 85 cubic feet per second (cfs). The diversion facility will be built to support future expansion to a diversion rate of 135 cfs. Future diversion rates above 85 cfs were not considered by NMFS in this opinion, because the flow prescription to minimize project impacts and benefit steelhead was jointly developed by MCWRA and NMFS based on an assumed maximum diversion rate of 85 cfs. With this assumption, the average diversion of the SRDF will be about 9,700 AF per year (AFY).

The proposed dam will be built with pneumatically controlled interlocking steel gates that will span the width of the Salinas River. The height of the spillway gate will be controlled by inflatable bladders. The foundation of the dam will be set at an elevation slightly below the existing river bed and will be constructed of reinforced concrete with vinyl coated sheet piles driven at the upstream and downstream ends. When in operation, the dam will maintain the upstream water surface elevation of the impoundment within an operating range of approximately 5.0 to 9.0 ft elevation. The total operational storage volume of the impoundment within this range is approximately 108 AF.

The SRDF will include a fish passage system, including intake screens and fish ladder, to provide upstream and downstream steelhead passage, and will be designed and maintained to comply with NMFS and CDFG criteria. For example, MCWRA will construct a trash rack to strain gross debris while allowing fish passage. Beginning April 1, the date when the dam is inflated, and continuing as long as the dam is inflated, the fish passage system will be functional; that is, it will facilitate efficient upstream passage of adult steelhead, as well as provide passive conditions for safely transporting returning adults and juvenile steelhead from the SRDF impoundment to the Salinas River lagoon. The fish ladder will be designed to function over the entire range of operating diversion dam headwater elevations and tailwater flows of 2 to 45 cfs. The entrance to the fish ladder will include orifices with manually operated slide gates, which can be manipulated to generate optimum fish attraction conditions at the entrance. The fishway will be constructed with an auxiliary water supply pipeline. The pipeline will supply water at the fish ladder entrance pool to maintain seasonally dependent bypass flow rates and sufficient attraction for upstream migrants. Bypass flows through the fish ladder will typically be 45 cfs for migration when the lagoon sandbar is open to the ocean, and 15 cfs for migration when the lagoon sandbar is closed and flow is routed to the Old Salinas River (OSR) channel. A minimum flow of 2 cfs will be maintained to the lagoon as long as SRDF irrigation diversions are occurring or aquifer conservation releases from Nacimiento and/or San Antonio reservoirs are being made to the Salinas River. See Description of the Proposed Action, Section III.B.2.c in this opinion, "*Salinas Valley Water Project Flow Prescription for Steelhead Trout*" for more information on flows to the lagoon.

Construction of the proposed instream surface diversion facility will take approximately 12 months. In-channel work will occur when there are no flows in the Salinas River or when flows are minimal and fish passage is not an issue, typically from the beginning of July to the end of

Based on its current condition and the loss of spawning habitat in the Nacimiento and San Antonio rivers, the Arroyo Seco River is the most important remaining steelhead habitat in the Salinas River watershed. The largest un-dammed tributary with steelhead habitat in the Salinas River watershed, the Arroyo Seco River is also the closest Salinas River tributary to the Pacific Ocean with suitable spawning and rearing habitat. The relatively close proximity of the Arroyo Seco River to the ocean is likely the primary reason the anadromous form of *O. mykiss* persists in the Salinas River watershed. The Arroyo Seco River also contains the majority of spawning habitat in the basin and half of the rearing habitat (Table 10). Anthropogenic manipulation of water flow in the Salinas River watershed has made successful migration into and out of the upper tributaries more difficult than migration opportunities to and from the Arroyo Seco River.

Table 10. Number of stream miles of designated critical habitat PCEs within the range of several sub-populations of SCCC steelhead in the Salinas basin. These data show the relative importance of the Arroyo Seco River in supporting steelhead in the Salinas River.

Sub-Population	Spawning	Rearing	Migration
Arroyo Seco	68.5	68.5	84.6
San Antonio/ Nacimiento	20.6	20.6	20.6
Upper Salinas	21.1	40.2	48.1
Lower Salinas	2.4	9.0	149.1

The complete loss of spawning and rearing habitat due to dams and the inaccessibility to spawning and rearing areas in the upper portions of the watershed during most years has increased the relative importance of remaining high quality habitats for SCCC steelhead in the watershed. The infrequent nature of flow events sufficient for migration to the upper portions of the Salinas River watershed, coupled with the distance adults must travel to reach them and smolts must travel to reach the ocean, has made the long-term persistence of steelhead in the river's upper tributaries tenuous. The conservation of steelhead habitats in the Arroyo Seco River watershed is critical for the persistence of this species in the Salinas River.

Based on watershed size, location, ecological context, and overall status of SCCC steelhead, the Salinas River has the potential (if it were to support a viable steelhead population) to prevent fragmentation in the distribution of SCCC steelhead, contribute to the genetic diversity of the species, and ameliorate the overall extinction risk of the DPS.

VI. EFFECTS OF THE PROPOSED ACTION

In this section, we analyze the direct and indirect effects of the proposed action, and the interdependent and interrelated actions, on threatened SCCC steelhead and its designated critical habitat. We approach the effects analysis by prioritizing effects, giving most attention to those having the greatest potential consequences to steelhead and their habitat. For the more substantial effects, we identify which PCE of critical habitat will likely be affected, and how the PCE will be affected given its baseline condition. For this project, the effects of flows on migration habitat received our highest priority. We quantified these effects using a flow model called the Salinas Valley Integrated Ground and Surface Model (SVIGSM) developed for MCWRA (WRIME 2003). Once this was done, we overlaid the effects on habitat on top of the biological requirements of steelhead and information about steelhead population abundance and

distribution of individuals to determine the extent to which individuals are exposed to the changes in critical habitat and what their response is expected to be to such changes.

We have categorized effects into those related to instream flows and those concerned with construction and maintenance-related effects. Because flow-related effects are the most significant due to their long-term consequences, we identify which PCE of critical habitat will be affected, how the PCEs are likely to be affected given their baseline conditions, and how those changes affect the conservation value of critical habitat in the action area. In the Integration and Synthesis, we then address effects at the larger scale of sub-populations and critical habitat within the Salinas basin given baseline conditions. Finally, we judge the effect of population and critical habitat changes at the basin scale on the DPS scale for the species and critical habitat.

It is important to note that NMFS analyzed changes in stream flows based on the maximum proposed diversion rate at the SRDF of 85 cfs. The SRDF is designed to divert water at up to 135 cfs. Diversions above 85 cfs may require reinitiation of consultation if they would result in changes to the effects on SCCC steelhead analyzed and described below.

A. Flow-Related Effects

1. Adult Migration

To assess the flow related effects of the project on adult steelhead migration, it is important to first establish what flows are needed to facilitate that migration. This is not simply a matter of identifying the minimum flows at which steelhead are able to pass upstream. It is also necessary to consider how often and for what duration these passage flow events must be present to facilitate successful annual migrations of the species. For example, we know that adult steelhead historically migrated upstream during winter and early spring. However, even before agricultural development in the Salinas Valley and construction of the major dams, steelhead were probably not able to migrate during the lowest flows of winter. Indeed, during dry years, opportunities for upstream passage were probably of limited duration. Thus, at least three questions need to be answered to address the question of properly functioning conditions for adult migrations in the Salinas River. Firstly, what are the flows at which fish are able to successfully and efficiently move upstream? Secondly, how often do those “passage flows” need to be present to sustain a viable steelhead population? Lastly, it is important to know when those “passage flows” occur with respect to other hydrologic events in the watershed (*e.g.*, what is the relationship of passage flows in the mainstem with rainfall-runoff events in key tributaries). For this analysis, we defined properly functioning condition of adult migration corridors primarily as stream flow supporting depths and velocities conducive to upstream passage in shallow riffles at a frequency and duration comparable to years prior to the construction of the dams when steelhead runs were substantial in the Salinas River.

As described in the environmental baseline (Section V.C.2), NMFS (2005c) examined the issue of adult passage flows and determined that at least 260 cfs and 150 cfs are needed to facilitate safe and efficient upstream passage of steelhead at Chualar and Spreckels, respectively. NMFS (2005c) recommended that in the absence of further site-specific information, 260 cfs should be

EXHIBIT 2

The Challenge

Proposed Solution

Public Involvement

Timeline

News



A Sustainable Water Supply through Responsible Management

Since January 2007, the California Public Utilities Commission [Division of Ratepayer Advocates](#) (DRA) has been working with the University of California, Santa Cruz (UCSC) [Center for Integrated Water Research](#) (CIWR) to consider a regional approach to Monterey County's water needs. The regional area is:

- The California American Water Company service area, including Carmel, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside, and the unincorporated areas of Pebble Beach, Carmel Valley, Monterey-Salinas Highway Corridor;
- The Marina Coast Water District (MCWD) service area, including Marina and the former Fort Ord;
- The City of Salinas; and
- Northern Monterey County rural and urban areas, including Castroville, Prunedale, Moss Landing, and Pajaro.

In cooperation with the DRA, UCSC/CIWR, the Monterey Regional Plan Work Group (Work Group), and the Water for Monterey County Coalition (WFMCC) developed a regional program — *Water for Monterey County* — that could provide up to 26,500 acre-feet of water per year.

Potential water production, as well as savings from conservation are shown in the following table:

Water for Monterey County Program Elements		
5,000 afy	Salinas River Diversions	<ul style="list-style-type: none"> • Winter diversions blended with recycled water • Delivered to expanded Castroville Seawater Intrusion Projects, allowing available groundwater to be pumped for urban use
9,000 afy	Recycled Water — Agriculture	<ul style="list-style-type: none"> • Stored in winter months • Distributed during peak summer months • Blended with summer diversions to meet demand

"The Water for Monterey County plan could potentially provide a good alternative in the search for a sustainable water solution for the Monterey Peninsula. The plan is intriguing, because it could be less costly, use less energy, help to reduce seawater intrusion, and doesn't rely on drawing in water from the Monterey Bay National Marine Sanctuary."

— *Assemblymember John Laird, AD-27*

13,000 afy	Desalination	<ul style="list-style-type: none"> • Uses intruded groundwater as basis of supply • Results in brine discharge that meets California ocean plan
6,000 afy	Salinas Basin Groundwater	<ul style="list-style-type: none"> • Additional wells to tap highest quality and lowest cost resource • Preserves reliability and sustainability
Up to 5,000 afy	Recycled Water — Urban	<ul style="list-style-type: none"> • Produced at MRWPCA Salinas Valley plant • Distributed to urban users • Advanced treatment for replenishment of Seaside Groundwater Basin
1,300 afy	Seaside Aquifer Storage	<ul style="list-style-type: none"> • Injecting treated Carmel River water into groundwater basin • In-lieu recharge to be studied
500 afy	Stormwater	<ul style="list-style-type: none"> • Local catchment cisterns • Percolation ponds
300 afy	Conservation	<ul style="list-style-type: none"> • Regional programs to decrease water needs • "Smart" irrigation controllers incentive programs • Drought-tolerant landscaping education • High-efficiency and low-flow device rebates

A regional program would require significant electrical energy to meet daily operational needs. Therefore, an important element of such a program would be a sustainable energy supply. In addition to power from the Pacific Gas & Electric grid, the *Water for Monterey County* program also considers the following energy supply sources:

- Monterey Regional Waste Management District (MRWMD) Landfill-gas powered co-generation system (existing)
- Monterey County Water Resources Agency (MCWRA) hydroelectric power (existing)
- Biomass to energy power plant at MRWMD (proposed)
- Wind turbines located on the 220-acre parcel of Armstrong Ranch (proposed)
- Solar power (proposed)

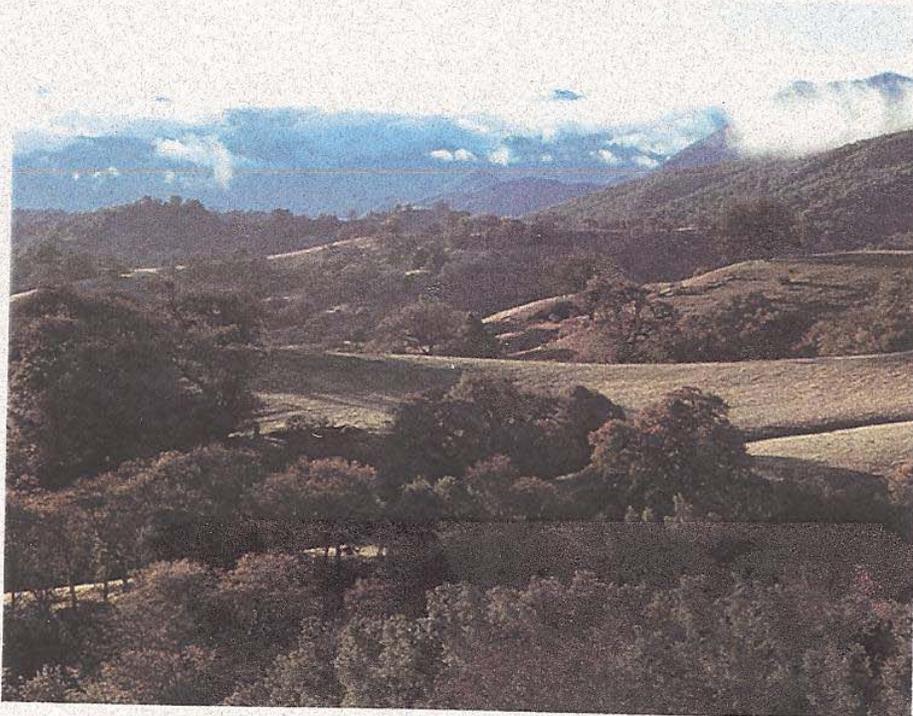
EXHIBIT 3



Monterey County 21st Century
General Plan Update

DRAFT

ENVIRONMENTAL IMPACT REPORT



VOLUME I

March 27, 2002

1.0 INTRODUCTION

1.1 THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

This document is a draft Environmental Impact Report (EIR) addressing adoption of a General Plan for the County of Monterey. The purpose of the EIR is to disclose potential environmental impacts that could result from implementation of the proposed General Plan. Preparation of the EIR and its availability for public review are required by the California Environmental Quality Act (CEQA).

The public, along with local, regional, state and federal agencies, are invited to review the EIR and to comment on its adequacy in identifying the potential environmental effects of the General Plan. Comments should be directed to the County of Monterey General Plan Update Office as identified below. Comments received during the mandatory 45-day review period will elicit a formal written response in a subsequent document (Response to Comments) which will also be available for public review. The Draft EIR, comments and responses will all be presented to the County Board of Supervisors for consideration as they review the proposed General Plan. Prior to approval of this or any version of the General Plan, the Board of Supervisors must certify that the EIR (complete with comments and responses) adequately addresses the General Plan's potential environmental impacts.

1.2 PURPOSE AND SCOPE OF EIR

Purpose of Environmental Impact Report

This Environmental Impact Report (EIR) assesses the environmental impacts of Monterey County's General Plan Update, a proposed update of the County's current General Plan adopted in 1982. The EIR has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA). The major purposes of the EIR are:

- ◆ To identify current environmental conditions within the County which may affect or be affected by growth projected for 2020;
- ◆ to disclose potential environmental impacts of the proposed General Plan;
- ◆ to inform the public and to foster public participation in the County's planning process;
- ◆ to inform County decision-makers as to potential effects of the proposed General Plan;
- ◆ to provide mitigation measures which could eliminate or reduce potentially significant environmental impacts; and
- ◆ to evaluate alternatives that might be environmentally superior to the General Plan as proposed.

Scoping Process

On May 10, 2001, the County (as Lead Agency) issued a Notice of Preparation of a Draft Environmental Impact Report in accordance with CEQA. A public scoping meeting was held on June 8, 2001 at the County Courthouse Building in Salinas, during which the proposed project was described and public comment was received on topics to be addressed in the EIR.

5.2.8 PROPOSED WINERY CORRIDOR DESIGNATION

The proposed Land Use Element designates three “winery corridors” in the Salinas Valley. These are (1) Central/Arroyo Seco/River Road Corridor, (2) Metz Road and (3) Jolon Road (Exhibits 5.2-6 and 5.2-7). Two categories of wineries would be allowed in these corridors. “Full-scale” wineries are defined as those with an annual production capacity of between 50,000 and 2 million cases. “Artisan” wineries produce less than 50,000 cases. Up to 50 new wineries would be permitted in the designated corridors. Full-scale wineries would be on lots that meet the minimum parcel size of the underlying zoning district in which they are located. A maximum of 10 full-scale wineries is allowed in the corridors, with 5 allowed in the Central/Arroyo Seco/River Road Corridor, 2 on Metz Road and 3 within the Jolon Corridor.

Forty artisan wineries are allowed. Forty new lots of 5 acres or larger may be created to develop the smaller, artisan wineries. Up to 24 of these new lots are proposed in the Central/Arroyo Seco/River Road Corridor; 12 are proposed in the Jolon Road Corridor; and 12 would be allowed on Metz Road. Presumably, artisan wineries could be developed on larger lots as well.

All new wineries would be allowed a tasting room with a maximum size of 2,500 square feet (150 person capacity). Up to three new wineries would be allowed restaurants on-site, with no more than one in each corridor. A total of five delicatessens (up to three in the Central/Arroyo Seco/River Road Corridor and one in the two other corridors) would be allowed, along with three Bed & Breakfast facilities (See Table 5.2-6). The General Plan proposes to allow winery-related uses identified in Table 5.2-6 under a General Plan designation, with future review and approval procedures limited to an Administrative Permit (in the case of artisan wineries and stand-alone tasting rooms) and a Use Permit (for full-scale wineries, restaurants and delicatessens).

According to the proposed General Plan, the intent of the winery corridor designation is “to promote the processing and marketing capabilities of the industry and to more fully utilize the wine grape production already existing in the County” (LU-7.24). There is currently a shortfall in the capacity of local wineries to process wine grapes produced in the county. Consequently, 75-80% of the county’s grape production is exported to be processed into wine or grape juice in other counties. According to the Monterey County Vintners and Growers Association, this represents a lost opportunity not only in potential revenue that would be gained if the value-added processing were performed locally, but the inability to process wines inhibits the development and promotion of Monterey County labels and local appellations in the highly competitive global wine market. A major cause cited by the Vintners and Growers Association for the shortage of local wineries is the length of processing time for proposed projects to be reviewed and approved in the County.

There are about 45,300 acres of planted vineyards in Monterey County. Approximately 45,000 acres are in the Salinas Valley with another 300 in Carmel Valley. The present acreage has the potential to produce approximately 226,500 tons of grapes per year. Although some acreage may go out of production in the coming years in response to market conditions, long-range projections by the industry suggest an increase of about 9,700 acres to a total of 55,000 over the next 5 to 10 years. This would generate a total potential yield of 275,000 tons of grapes, or 17,187,500 cases of wine (1 ton yields 62.5 cases). To process 100% of this projected

EXHIBIT 4

Monterey County
Crop Report 2007



**Monterey County
Agricultural Commissioner's Office**

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In Memoriam Estrella Guzman

5/10/1961 – 11/13/2007

This year's crop report is dedicated to Estrella Guzman. Estrella worked for the department for 17½ years as an Agricultural Biologist and Deputy Agricultural Commissioner. She was a dedicated employee who took great pride in serving the local agricultural community. Her enthusiasm, tireless work ethic and compassion will be missed but not forgotten.

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MONTEREY COUNTY

AGRICULTURAL COMMISSIONER



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A.G. Kawamura, Secretary
California Department of Food & Agriculture

and

The Honorable Board of Supervisors of Monterey County

Fernando Armenta	1 st District, Chairman
Louis Calcagno	2 nd District
Simón Salinas	3 rd District
Ila Mettee-McCutchon	4 th District
Dave Potter	5 th District

It is a pleasure to present the 2007 Monterey County Crop Report that is prepared pursuant to the provisions of Section 2279 of the California Food & Agriculture Code. This report reflects a production value of over \$3.8 billion for Monterey County, an increase of 9.5% over 2006. The increase is attributable to higher values for strawberries, head lettuce, grapes, broccoli, carrots, spinach, and a variety of other vegetable crops. However, decreases were noted in leaf lettuce, salad products, and a number of other crops. While the overall production value has again increased, it is important to note that the figures provided are gross values and do not represent or reflect net profit or loss experienced by individual growers, or by the industry as a whole. It does reflect the diversity and resilience of our agriculture industry.

The largest increase achieved was in the value of our strawberry crop, which increased by 38% or \$165 million on increased acreage, good production, and higher prices. For the second time, strawberries have surpassed head lettuce to become the County's second largest crop. Fittingly, this year's crop report features the strawberry industry, and we want to recognize the California Strawberry Commission for their contributions to this report and for the service they provide their growers.

Head lettuce, for many years our number one crop, posted a 15% increase of \$65 million on good prices. Leaf lettuce, which took over the top spot in 2002, declined slightly but still held on to its lead. Spinach also gained 15% or \$17 million following its \$77 million decline in 2006 on concerns over food safety outbreaks in 2005. Salad products, which also declined in 2006 over the same concern, showed a further 6% decline, but this is mostly attributable to more accurate data for specific commodities. Wine grapes also showed a strong increase of \$34 million or 15% with more bearing acres, higher prices, and increased yield. This puts our grape crop close to the record value established in 2005. The freeze of January 2007 resulted in a 45% loss of \$426,000 for avocados, while citrus actually showed a slight increase, despite the freeze damage, due to higher prices in a tighter market.

This report is our yearly opportunity to recognize the growers, shippers, ranchers, and other businesses ancillary to agriculture, which is the largest part of Monterey County's economy. As such, we would like to extend our thanks to the industry for their continued effort to provide vital information that enables the compilation of the Monterey County Crop Report. While we continually strive to improve upon this information, without their assistance, this report would not be possible.

Special recognition for the production of this report goes to Richard Ordonez, Juanita Adame and all the staff who assisted in compiling this information and improving the quality of the report.

Respectfully submitted,

Eric Lauritzen
Agricultural Commissioner

GRAPE PRODUCTION

CROP	YEAR	ACREAGE	PRODUCTION		UNIT	VALUE	
			PER ACRE	TOTAL		PER UNIT	TOTAL
BEARING ACRES	2007	39,636	5.64	224,000	TON	\$1,123.23	\$251,604,000
BEARING ACRES	2006	38,165	5.49	210,000	TON	\$1,038.01	\$217,983,000
NON BEARING/NOT HARVESTED	2007	3,068					
NON BEARING/NOT HARVESTED	2006	3,144					
TOTAL GRAPE ACRES	2007	42,764					
TOTAL GRAPE ACRES	2006	41,309					

TOTAL ACREAGE OF WHITE & RED GRAPES BY VARIETY

White Grape Varieties	Harvested Acres	Average Price Per Ton	Total Tons	Total Value
Chardonnay	15,658	\$1,185	72,229	\$85,591,000
Riesling	1,311	\$1,080	10,792	\$11,655,000
Sauvignon Blanc	1,026	\$944	8,007	\$7,559,000
Pinot Grigio	1,055	\$1,169	4,511	\$5,273,000
Gewurztraminer	619	\$969	2,980	\$2,888,000
Chenin Blanc	700	\$575	4,858	\$2,793,000
Viognier	152	\$1,800	505	\$909,000
Muscat Canelli	149	\$1,190	742	\$883,000
Pinot Blanc	100	\$1,107	459	\$508,000
Semillon	55	\$1,261	238	\$300,000
Other Whites ¹	78	\$1,191	241	\$287,000
Roussanne	70	\$1,697	158	\$268,000
Marsanne	18	\$861	152	\$131,000
Albarino	20	\$1,793	62	\$111,000

Red Grape Varieties	Harvested Acres	Average Price Per Ton	Total Tons	Total Value
Merlot	5,255	\$1,017	39,373	\$40,042,000
Cabernet Sauvignon	4,153	\$951	40,699	\$38,705,000
Pinot Noir	5,663	\$1,806	18,874	\$34,086,000
Syrah/Shiraz	1,577	\$1,029	8,373	\$8,616,000
Cabernet Franc	990	\$958	5,664	\$5,426,000
Zinfandel, Red	189	\$1,060	1,023	\$1,084,000
Petit Verdot	134	\$1,193	843	\$1,006,000
Grenache	147	\$1,490	620	\$924,000
Petite Sirah	192	\$1,165	786	\$916,000
Sangiovese	113	\$1,163	579	\$673,000
Malbec	122	\$973	445	\$433,000
Valdiguie	48	\$800	369	\$295,000
Other Reds ²	44	\$1,794	130	\$233,000

¹ Grenache Blanc, Loureiro, Muscat Gaillo, Muscat Orange, Treixadura, and Zinfandel

² Aleatico, Alicante, Barbera, Dolcetto, Freisa, Mourvedre, Muscat Hamburg, Nebbiolo, Souzao, Tannat and Tempranillo

EXHIBIT 5

Join Our Email List

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Acreage & Varietals

[INTRODUCTION](#) | [DIRECTORY](#) | [WINERY MAP](#) | [VARIETALS](#) | [ACREAGE](#)

Monterey County Premium Wine Grape Production

Year	Acreage	Tonnage	Total
2006	38,165	210,000	\$217,983,000
2005	38,179	269,000	\$254,615,000
2004	38,614	172,000	\$174,380,000
2003	34,287	151,344	\$160,219,000
2002	43,007	143,947	\$147,065,000
2001	44,986	184,082	\$207,945,000
2000	45,043	170,729	\$216,430,000
1999	41,415	119,143	\$157,926,000
1998	39,901	148,860	\$178,610,000
1997	36,114	167,488	\$203,412,356
1996	33,319	118,922	\$129,630,000
1995	30,483	82,320	\$79,309,000
1994	31,247	119,384	\$89,335,000
1993	31,998	134,407	\$101,973,000
1992	32,404	101,407	\$75,036,000

Total Acreage of White & Red Grapes by Variety

White Grape Varieties Harvested				
Variety	Acres	Ave. Price / Ton	Total Tons	Total Value
Chardonnay	15,242	\$1,012	92,178	\$93,284,000
Chenin Blanc	699	\$392	3,236	\$1,269,000
Gewurztraminer	665	\$949	2,920	\$2,771,000
Marsanne	15	\$727	91	\$66,000
Muscat Orange	24	\$1,265	105	\$133,000
Other Whites	69	\$1,270	257	\$326,000

Pinot Blanc	79	\$1,076	337	\$363,000
Pinot Grigio	952	\$1,142	5,177	\$5,912,000
Riesling	1,181	\$1,073	4,681	\$5,023,000
Roussanne	67	\$1,784	80	\$143,000
Sauvignon Blanc	979	\$919	5,727	\$5,263,000
Semillon	55	\$1,138	315	\$358,000
Viognier	151	\$1,328	405	\$538,000
Zinfandel, White	47	\$533	377	\$201,000
Red Grape Varieties Harvested				
Cabernet Franc	992	\$972	5,350	\$5,200,000
Cabernet Sauvignon	4,342	\$990	24,140	\$23,899,000
Grenache	141	\$1,341	783	\$1,050,000
Malbec	129	\$985	885	\$872,000
Merlot	5,687	\$957	29,626	\$28,352,000
Other Reds	156	\$774	812	\$628,000
Petit Verdot	139	\$1,145	621	\$711,000
Petite Sirah	198	\$1,114	1,008	\$1,123,000
Pinot Noir	4,195	\$1,511	21,102	\$31,885,000
Sangiovese	121	\$1,070	514	\$550,000
Syrah/Shiraz	1,561	\$983	7,637	\$7,507,000
Zinfandel, Red	280	\$415	1,340	\$556,000

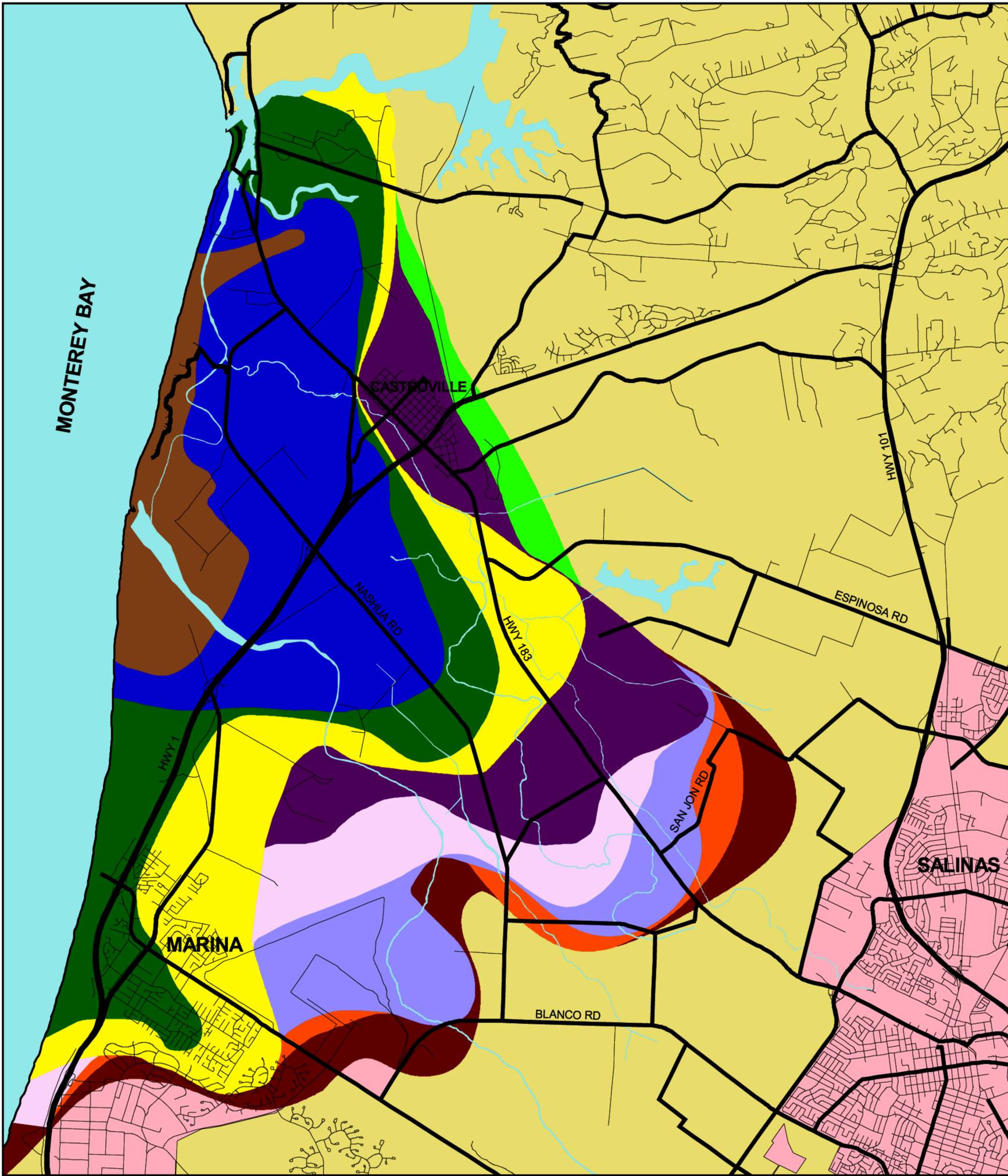
Information Compiled from the Monterey County Agricultural Commissioner Crop Reports (1992-2006)

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[MCVGA MEMBERS](#) | [MAP & GUIDE](#) | [GENERAL MEMBERS ONLY](#)

MONTEREY COUNTY VINTNERS AND GROWERS ASSOCIATION

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EXHIBIT 7



Legend:

Seawater Intruded Areas By Year

- 1944
- 1965
- 1975
- 1985
- 1993
- 1997
- 1999
- 2001
- 2003
- 2005

- Major Roads
- Minor Roads
- Incorporated Areas
- Monterey County
- Water Bodies

Historic Seawater Intrusion Map

Pressure 180-Foot Aquifer - 500 mg/L Chloride Areas

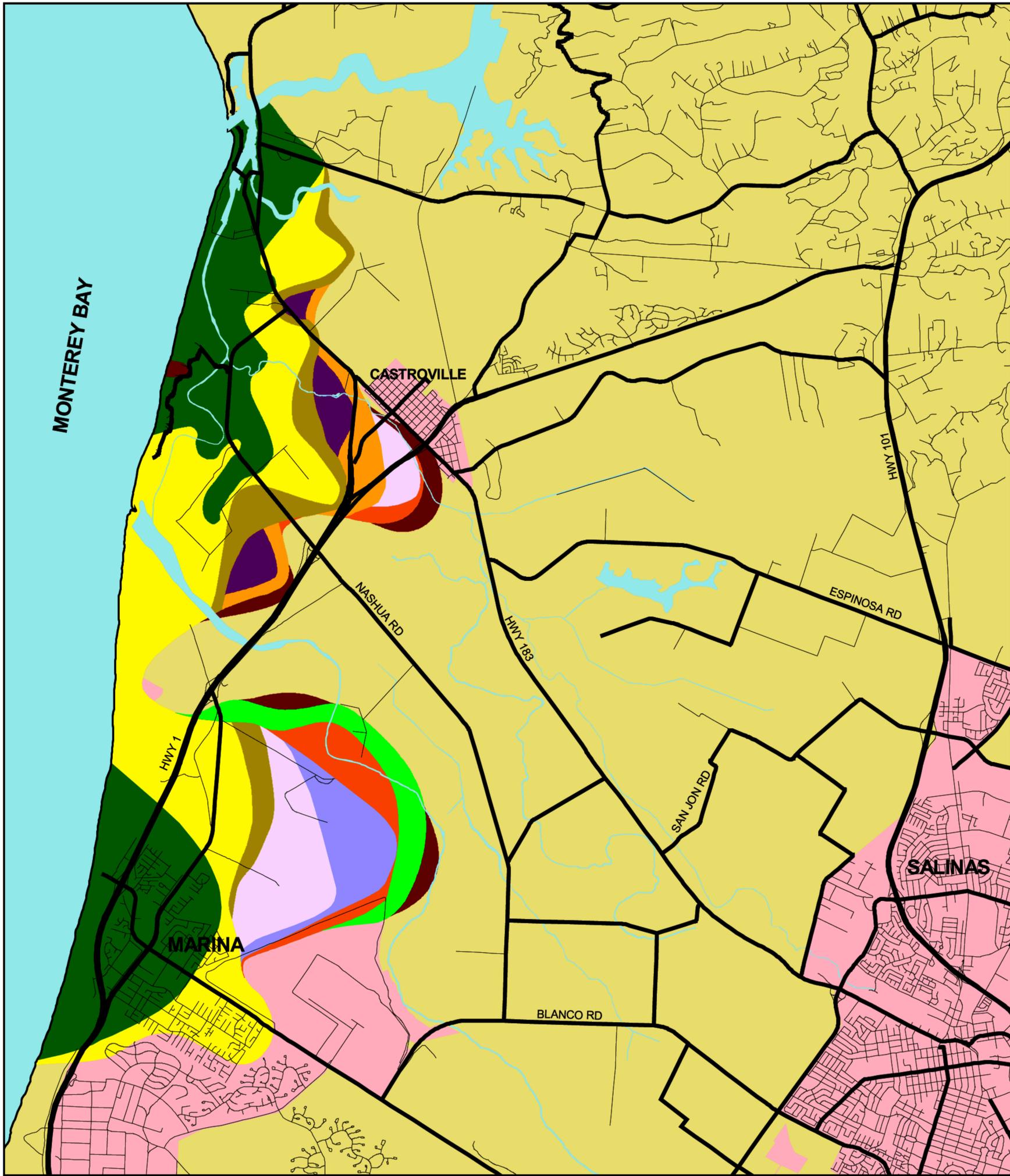


Source: MCWRA, 2005 Water Quality Data

Note: The scale and configuration of all information shown hereon are approximate and are not intended as a guide for design or survey work.

Map Date: February 27, 2006

EXHIBIT 8



Legend:

Seawater Intruded Areas By Year

- 1959
- 1975
- 1985
- 1990
- 1993
- 1995
- 1997
- 1999
- 2001
- 2003
- 2005

- Major Roads
- Minor Roads
- Incorporated Areas
- Monterey County
- Water Bodies

Historic Seawater Intrusion Map

Pressure 400-Foot Aquifer - 500 mg/L Chloride Areas



Source: MCWRA, 2005 Water Quality Data

Note: The scale and configuration of all information shown hereon are approximate and are not intended as a guide for design or survey work.

Map Date: February 27, 2006