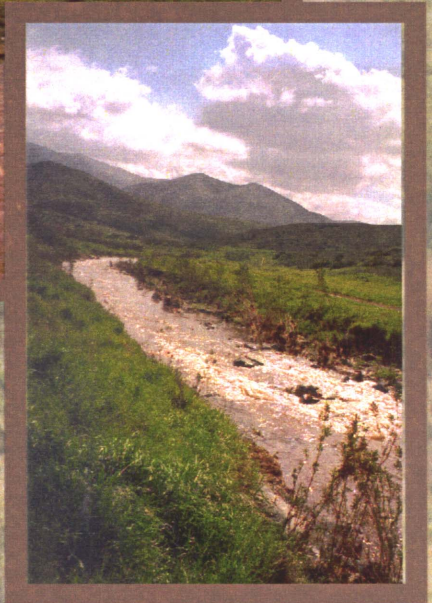


Rancho Jamul Mitigation Bank Bank Enabling Instrument

San Diego, California
Updated: September, 2000



Prepared for:

Mitigation Bank Review Team

California Department of Fish and Game
U.S. Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

Prepared by:

Wildlands, Inc.





WILDLANDS, INC.

Rancho Jamul Mitigation Bank Enabling Instrument and Restoration and Management Plan

San Diego County, California

Prepared by
Wildlands, Inc.

Prepared for
The U.S. Army Corps of Engineers
The U.S. Environmental Protection Agency
The U.S. Fish and Wildlife Service
The California Department of Fish and Game

September 2000

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MITIGATION BANK ENABLING INSTRUMENT RANCHO JAMUL MITIGATION BANK

This Bank Enabling Instrument (hereinafter "BEI") regarding the establishment, use, operation and maintenance of the Rancho Jamul Mitigation Bank (hereinafter "Bank") is made and entered into by and among Wildlands, Inc. (hereinafter, "Sponsor"), the Los Angeles District of the U.S. Army Corps of Engineers (USACE), Region IX of the U.S. Environmental Protection Agency (USEPA), the Carlsbad Field Office of the U.S. Fish and Wildlife Service (USFWS), and Region V of the State of California, Department of Fish and Game (CDFG), with reference to the following:

Section I: Preamble

A. Purpose: The purpose of this BEI is to establish guidelines and responsibilities for the establishment, use, operation and maintenance of the Bank. The Bank is available to be used for off-site compensatory mitigation for unavoidable impacts to waters of the United States, including wetlands, which result from activities authorized under Section 404 of the Clean Water Act (hereinafter "\$404"); impacts to federally-listed threatened or endangered species under Sections 7 and 10a of the Endangered Species Act (hereinafter "\$7" and "\$10a" respectively) and/or designated critical habitat and/or occupied habitat; impacts to waters of the United States, including wetlands, which result from activities authorized by the National Resource Conservation Service under the Swampbuster provisions of the Food Security Act (hereinafter "FSA"); impacts to State of California-listed threatened or endangered species under the California Endangered Species Act, Fish and Game Code §2050 *et seq.* (hereinafter "CESA"); mitigation for significant impacts to wetland and wildlife resources under the applicable sections of the California Environmental Quality Act, Public Resources Code §21000 *et seq.* (hereinafter "CEQA"); unavoidable impacts to waters of the State of California which result from activities authorized under §1600 *et seq.* of the California Fish and Game Code (hereinafter "\$1600"); and the establishment and/or preservation of habitat associated with the Natural Communities Conservation Planning program, Fish and Game Code §2800 *et seq.* (hereinafter "NCCP"); provided the Bank meets all requirements applicable for mitigation with respect to a particular project and that mitigation through use of a bank is authorized by the appropriate authority.

B. Location and Ownership of Parcel: Whereas, Sponsor has been granted the exclusive right to create a mitigation bank on approximately 109 acres of land (Phases I and II) out of a 3700±-acre parcel of land owned by the State of California known as the "Rancho Jamul Property" in San Diego County, California, as shown in the *Rancho Jamul Mitigation Bank Proposal* (hereinafter "Proposal" and also Exhibit B of the BEI) incorporated by reference, and the Sponsor has developed a restoration and enhancement plan to restore and enhance approximately 53.6 acres

of aquatic and riparian habitat and 16.6 acres of non-Corps jurisdictional oak/riparian habitat in Phase I of the project and additional acreage, yet to be determined, in Phase II of the Project.

C. Project Description: Whereas, under this banking instrument, the Sponsor may restore, enhance and/or establish, and then maintain the following types of habitat in accordance with plans shown in the Proposal:

1. Corps Jurisdictional Freshwater Wetlands/Waters of the United States;
2. Corps Jurisdictional Riparian Habitat;
3. Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters of the United States;
4. Corps Jurisdictional Enhancement Credits (for temporary impacts); and
5. Non-Corps Jurisdictional Oak/Riparian Habitat.

Once the Sponsor has undertaken the habitat establishment, the Sponsor shall then maintain the Bank in such condition until all credits are sold, or until the Bank Closure Plan (Exhibit E) is implemented, whichever is later. The enhanced and restored habitats of the Bank shall consist of a total of approximately 109 acres (approximately 70.2 acres in Phase I and approximately 38.8 acres in Phase II), as described in the table titled *Rancho Jamul Summary of Habitat Restoration Acreages* (Exhibit D) and include the habitats as described in the table and the Proposal.

D. Disclaimer: Whereas, this BEI does not in any manner limit the statutory authorities and responsibilities of the signatory parties.

Section II: Stipulations

A. Baseline Conditions: Whereas, the Bank area is currently as described in the Proposal.

B. Establishment and Use of Credits: Whereas, it is anticipated that, in accordance with provisions (IV)(D-G) of this banking instrument below, credits will be available to be used as off-site mitigation in accordance with all applicable requirements.

C. Composition of the Mitigation Bank Review Team (MBRT): Whereas, the members of the Mitigation Banking Review Team (MBRT) consist of:

U.S. Army Corps of Engineers, Los Angeles District (*USACE*), Co-Chair;
U.S. Fish and Wildlife Service, Carlsbad Field Office (*USFWS*), Co-Chair;
California Department of Fish and Game (*CDFG*), Co-Chair; and
U.S. Environmental Protection Agency, Region IX (*USEPA*).

E. Exhibits: Whereas, the following Exhibits are incorporated as appendices to this BEI:

1. "Exhibit A", Bank location and service areas;
2. "Exhibit B", *Rancho Jamul Mitigation Bank Restoration and Management Plan* ("Proposal"), and all subsequent revisions and addenda thereto, as identified by the Co-Chairs of the MBRT;
3. "Exhibit C", Financial Assurances;
4. "Exhibit D", *Rancho Jamul Summary of Habitat Restoration Acreages*;
5. "Exhibit E", Bank Closure Plan;
6. "Exhibit F", Table of Credits; and
7. "Exhibit G", Land Use Agreement.

Section III: Authorities

A. Federal:

1. Clean Water Act (33 USC 1251 *et seq.*);
2. National Environmental Policy Act (42 USC 4321 *et seq.*);
3. Endangered Species Act (16 USC 1531 *et seq.*);
4. Fish and Wildlife Coordination Act (16 USC 661 *et seq.*);
5. National Historic Preservation Act (16 USC 470);
6. Swampbuster provisions of the Food Security Act;
7. Executive Order 11990; Protection of Wetlands;
8. Executive Order 11988; Floodplain Management;
9. Regulatory Programs of the U.S. Army Corps of Engineers, Final Rule (33 CFR Parts 320-330);
10. Guidelines for Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230);
11. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under the Clean Water Act, Section 404(b)(1) Guidelines; and
12. Federal Guidance for the Establishment, Use, Operation of Mitigation Banks (60 FR 58605 *et seq.*, hereinafter "Guidelines").

B. State:

1. California Environmental Quality Act (Pub. Res. Code §§21000 *et seq.*);

2. California Endangered Species Act (Fish & Game Code §§2050 *et seq.*);
3. California Natural Community Conservation Planning Act (Fish & Game Code §§2800 *et seq.*);
4. Streambed Alteration Agreements (Fish & Game Code §§1600 *et seq.*);
5. Sacramento-San Joaquin Valley Mitigation Bank Act of 1993 (Fish & Game Code §1775 *et seq.*); and
6. Official Policy on Conservation Banks, April 7, 1995, by California Resources Agency and California Environmental Protection Agency, jointly.

NOW, THEREFORE, the parties agree to the following:

Section IV: Establishment of the Bank

A. Sponsor's Performance Under the BEI: The Sponsor agrees to perform all necessary work, in accordance with the provisions of this BEI, to establish the aquatic and riparian habitats, as proposed in Exhibit B, until it is demonstrated to the satisfaction of the MBRT, acting through the Co-Chairs, that the Bank complies in all respects with all conditions contained herein.

B. Environmental Documentation and Permitting: To the extent not already obtained, the Sponsor will be responsible for obtaining all appropriate environmental documentation, permits or other authorizations needed to establish and maintain the Bank, which consist of the following:

1. Nationwide Permit #982015400, which was issued to Bank Developer on September 25, 2000, and which has an effective date of September 25, 2000 (the "NWP #27 Permit"). The NWP #27 Permit does not require the Bank Sponsor to obtain further notification from the Corps that the activities may proceed. Modifications to such activities which fall within the provisions of subsection VI.E and modifications which do not require review by the applicable USACE District Engineer under the Nationwide Permit Program contained in 33 CFR 330.1 *et seq.*, are within the authorization provided by the NWP #27 Permit;
2. CEQA compliance;
3. Section 401 Water Quality Certification or Waiver; and
4. Streambed Alteration Permit or Agreement;

C. Modifications of the Proposal: Establishment of Phase I of the Bank will be performed as described in Exhibit B, and the credits will become available in accordance with the schedule specified in Part V, Section F, of the BEI. Phase II of the Bank must be approved by the MBRT, acting through the Co-Chairs, prior to

establishment of that Phase. In the event that the Sponsor determines that modifications must be made in the Proposal to ensure successful establishment of habitat within the Bank, or in order to comply with specific permits or other authorizations needed to establish the Bank, the Sponsor shall submit a written request for such modification to the MBRT, through any of the Co-Chairs. The Sponsor shall then implement all modifications approved by the Co-Chairs, acting in consultation with the other members of the MBRT. Documentation of implemented modifications shall be made consistent with subsection IV(F), *infra*.

D. Financial Assurance Requirements: The Sponsor agrees to provide the following financial assurances over the life of the Bank and at Bank Closure, for the periods noted:

1. Prior to the transfer of any Bank credits, Sponsor shall furnish the USACE with a Performance Bond ("Performance Bond") in the amount of 120% of the cost of construction¹, issued by a surety authorized to issue bonds in the State of California and identified as an acceptable surety in Treasury Circular 570. The Performance Bond shall assure performance of Sponsor's obligation to construct the aquatic and riparian habitats in accordance with this BEI. The USACE shall release the Performance Bond upon Sponsor's completion of such construction, as evidenced by:

(a) The submission of the as-built drawings, per Section IV(F); and

(b) Verified by a subsequent on-site inspection by the Co-Chairs of the MBRT; or 60 calendar days have passed without any of the Co-Chairs of the MBRT contacting the Sponsor to arrange for such on-site verification inspection.

2. During the period of habitat establishment, and until performance objectives are met, the Sponsor shall also furnish the USACE with Contingency Security.

(a) The amount of the contingency security shall be in an aggregate amount equal to \$5,000 per aquatic or riparian habitat acre credit transferred (collectively, the "Contingency Security"). The Contingency Security shall assure performance of Sponsor's maintenance obligations under this BEI, including, without limitation, its obligation to cure its defaults and deficiencies under this BEI.

(b) Provided the Bank meets the performance objectives specified in the Proposal, as verified by the Co-Chairs through a final compliance visit, the Contingency Security shall be released upon the later of: (i) the fifth anniversary of the date of this BEI; or (ii) the third

¹ The cost of construction shall be the amount set forth in the construction contract entered into by Sponsor.

anniversary of the final remedial action taken in order to meet the performance objectives set forth in the Proposal.

3. During the period of Bank credit sales, the Sponsor shall make deposits into a nonwasting endowment fund held by the CDFG in order to assure long-term maintenance of the Bank in perpetuity.

(a) Endowment funds shall be deposited with each credit sold in the amount of \$8,400 multiplied by the number of credits transferred.

(b) Funds deposited in the endowment fund shall be held by the CDFG as trustee and expended in accordance with the Declaration of Trust Agreement attached as Exhibit C.

E. Legal Assurance:

Inasmuch as the State of California is the fee title owner to the property upon which the Bank is being developed, it will not be necessary to execute, deliver or record the customary Conservation Easement in favor of CDFG. However, if the land is transferred by the State of California to any landowner other than the State of California, the customary Conservation Easement and/or deed restriction shall be imposed by CDFG in conjunction with the transfer in order to ensure the ongoing management of the Bank for conservation purposes.

F. As-Built Drawings: The Sponsor agrees to submit as-built drawings, with accurate maps of the constructed habitat no later than 90 calendar days following completion of the re-vegetation associated with the establishment of the Bank. The as-built drawings will describe in detail any deviation from that described in the Proposal. The Table of Credits (Exhibit F) shall be revised based upon the as-built drawings.

Section V: Operation of the Bank

A. Service Area: The Bank is established to provide mitigation to compensate for unavoidable impacts to Waters of the United States, including wetlands, stream bed habitat and endangered species habitat within the service area of the Bank, as described and shown at Exhibit A. Decisions authorizing use of credits from the Bank will be made by the appropriate authority on a case-by-case basis. In general, it is agreed that use of credits from the Bank will be authorized whenever the appropriate authority determines: (i) that the particular project requiring mitigation may mitigate through bank credits; and (ii) the Bank has available, for sale, mitigation credits of the type required for the particular project.

B. Access to the Bank by the MBRT: The Sponsor will allow, or otherwise provide for, access to the site by all signatory parties, as necessary, for the purpose of inspection and compliance monitoring consistent with the terms and conditions of this banking instrument. Inspecting parties shall provide reasonable notice to the

CDFG and the Sponsor, during normal business hours and of at least 24 hours prior to inspection of the Bank.

C. Projects Eligible to Use the Bank: Each regulatory and/or resource agency will determine the eligibility of projects to use the Bank on a case-by-case basis for mitigation of impacts appropriate to that agency's jurisdictional authority. In general, it is agreed that activities falling within a permit under any one or more of the following authorities will typically be eligible to use the Bank, provided that the wetlands, habitats and species at the impact site are comparable to those for which the Bank has been established (wetlands and species at the Bank are intended to provide "in-kind" mitigation):

1. Section 404 of the United States Clean Water Act;
2. Sections 7 and/or 10(a) of the United States Endangered Species Act;
3. Section 1600 of the California Fish and Game Code;
4. Section 2081 of the California Endangered Species Act; and
5. Mitigation under the provisions of an approved plan which is consistent with the Natural Community Conservation Program (California Fish & Game Code §§2800 *et seq.*).
6. Mitigation identified in the San Diego County Biological Mitigation Ordinance, and/or other local agency plans, rules, regulations and/or ordinances.

D. Assessment Methodology:

1. Credits and debits will be measured as described in Chapter 4 of the Proposal, which is incorporated by reference into this BEI. Credits have been assigned to the Bank based upon the level of projected habitat function minus the level of habitat function existing prior to the Project.

2. For the purposes of this BEI, a "creation/restoration credit" is defined as a measure of habitat function relative to a given unit of areal measurement (i.e., acres), such that one creation/restoration credit is equal to one unit of the given areal measurement at full habitat function.

3. The total number of creation/restoration credits anticipated to be established in Phase I is 45.58. The total number of Phase I enhancement credits is anticipated to be 8.02. This credit total will be adjusted, as necessary, based on the area calculated from the approved as-built drawings.

E. Success Criteria: The success criteria described at Table 4, Chapter 3 of the Proposal incorporated by reference into this BEI, will be used to assess project success.

F. Schedule of Credit Availability: Upon submittal of all appropriate documentation by the Sponsor, and subsequent approval by the Co-Chairs, in consultation with the other members of the MBRT, it is agreed that credits will become available for use by the Sponsor or for transfer to a third party in accordance with Exhibit F, Table of Credits, attached hereto, as follows:

1. 15% of the total credits shown on Exhibit F, Table of Credits, shall be available upon approval of this BEI.

2. Additional credits shall be available when as-built drawings are furnished:

a. An additional 65% of the total credits within an active Phase of the Bank shall be available upon completion of the habitat construction work (i.e., grading and planting) within that Phase, as shown on the as-built drawings. In that regard:

(i) Phase I may be constructed in separate subphases, and to the extent such construction is subphased, the additional 65% credits shall be measured only with respect to the acreage of the subphase(s) constructed.

(ii) The actual number of credits made available under this subsection V.F(2)(a) will be adjusted such that 80% of the total credits within that Phase or subphase (including those initially made available under subsection V.F(1)), as shown on the as-built drawings for that Phase or subphase, are available.

(iii) Availability of enhancement credits will be based upon the removal of exotic plant species as shown on the as-built drawings. The as-built drawings showing removal of exotic plant species may be combined with the grading and planting as-built drawings, or at Sponsor's election, by separate as-built exotic plant removal drawing(s).

b. The remaining 20% of the total credits within an active Phase (or subphase) of the Bank shall be available upon attainment, within that Phase (or subphase), of the "year 3" success standards for that Phase (or subphase) as set forth in the Proposal. (Note: availability of the credits is based upon attainment of the "year 3" standard, not the timing of such attainment. Attainment may occur either before or after year 3 itself.) The success standards that will govern credit release for enhancement credit release are those that address percent cover by exotic species.

G. Assignment and Use of Enhancement Credits:

1. Enhancement credits have been assigned to Phase I of the Bank based on the exotic species removal and management and on the supplemental planting activities described in the Restoration and Management Plan (8.02 credits). These enhancement credits are only assigned for reaches of the creeks where no adjacent habitat restoration/creation is planned as part of Phase I.

2. Phase II credits may be assigned for restoration and creation, and some may be assigned for further enhancement of wetland habitat.

3. The enhancement credits shall not be used to compensate for permanent impacts.

H. Limitation of Phase II Credits. Enhancement credits will not be provided for the reach of Jamul Creek where enhancement credits have already been allocated. Additionally, if Phase II restoration/creation results in habitat located adjacent to segments of Jamul Creek where enhancement credits have already been assigned, the number of these enhancement credits (associated with the adjacent creek segments) will be deducted from the overall number of credits in the Bank. This deduction will be from available enhancement credits first, followed by deduction from available restoration/creation credits.

I. Provisions for Uses of the Mitigation Bank Area: Sponsor agrees, so long as this Agreement is in effect, that Sponsor shall not:

1. Use or authorize the areas proposed for dedication within the Bank for any purpose which interferes with its use as a mitigation bank, or unreasonably interferes with or compromises the ecological functions of the bank site or for any purpose which is in violation of the Land Use Agreement in effect for the property (Exhibit G).

2. Erect any permanent structures within or upon the areas proposed for dedication within the Bank unless required or permitted by the approved Management Plan.

3. Construct any structures or engage in any development activities on the Property other than those specified in the Proposal. Development activities shall mean only those actions that may change the biological, hydrological or physical characteristics of the land, but specifically do not include entry upon the land for other purposes, such as investigation, measurement, or surveying.

Section VI: Maintenance and Monitoring of the Bank

A. Maintenance Provisions: The Sponsor agrees to perform all work necessary to maintain the Bank consistent with the maintenance criteria established in the Proposal. The Sponsor shall continue with such maintenance activities until closure of the Bank. Upon closure of the Bank, the Sponsor shall implement the management actions described in the Proposal and established in the Bank Closure Plan. The Bank Closure Plan has been designed to ensure that the Bank Site is managed and maintained, in perpetuity, consistent with the conservation purposes of the Project. Deviation from the approved Bank Closure Plan is subject to review and written approval by the Co-Chairs, in consultation with the other members of the MBRT.

B. Monitoring Provisions: The Sponsor agrees to perform all work necessary to monitor the Bank in accordance with the monitoring procedures set

forth in the Proposal in order to demonstrate compliance with the success criteria established in the BEI.

C. Reports: The Sponsor shall submit to the Co-Chairs of the MBRT for distribution to the other members of the MBRT, reports describing the conditions of the Bank and relating those conditions to the success criteria. Reports will be submitted by November 30th of each calendar year, beginning after the first full growing season is complete after revegetation, and shall contain information as described in Chapter 3 of the Proposal.

D. Accounting Procedure: The Sponsor shall submit a copy of the invoice showing to whom the credits were sold, date of the transaction and the related USACE and USFWS action identification numbers to the Co-Chairs of the MBRT each time credits are debited or additional credits are certified. If requested, the USACE will distribute copies of the invoices to the other members of the MBRT. The Sponsor shall submit an annual ledger to the Co-Chairs of the MBRT, for distribution to all members of the MBRT, showing all transactions at the Bank for the previous year.

E. Remediation Plans: In the event the Bank fails to achieve the Success Criteria:

1. The Sponsor shall develop remediation plans and submit them within 30 days to the MBRT. The remediation plans will include proposed remedial actions and a schedule within which the actions will be implemented. The Sponsor shall then implement the necessary and appropriate remedial actions for the Bank in coordination with, and under the schedule approved by, the MBRT. In the event the Sponsor fails to implement such remedial actions within the schedule approved by the MBRT, any one or more of the Co-Chairs will notify the Sponsor and identify remedial actions necessary in order to achieve the performance objectives set forth in the Proposal.

2. If any one or more of the Co-Chairs determine that the Bank is operating at a deficit, the Sponsor shall be given written notification, whereupon debiting of credits will immediately cease, and the Co-Chairs, in consultation with the other members of the MBRT and the Sponsor, will determine what remedial actions are necessary. If, within six months of the written notification, conditions do not change or continue to deteriorate, or any one or more of the Co-Chairs are dissatisfied with efforts undertaken by the Sponsor, control of the Contingency Funds and the long-term management funds shall be transferred to the Co-Chairs, or their designees, as appropriate, to undertake corrective measures.

F. Release of the Contingency Security: At the request of the Sponsor, after a determination by the Co-Chairs, in consultation with the other members of the MBRT, that all success criteria have been satisfied as evidenced by the

requirements of Section IV(D)(2)(b), the Co-Chairs will perform a final compliance visit and the USACE will release the Contingency Security.

G. Long-Term Maintenance: Once the performance objectives in the Proposal have been met, the long-term maintenance and care of the Bank shall be assured pursuant the Bank Closure Plan.

1. The Bank shall be maintained in perpetuity in accordance with the terms and provisions of the long-term management plan, to be provided in the Bank Closure Plan, to be prepared by the Sponsor and submitted to the Co-Chairs within six months of the date of this BEI becoming effective. In no event, however, shall the Sponsor be permitted to close the Bank under Section V.1 of this BEI prior to the submission to, and approval by, the Co-Chairs of the Bank Closure Plan.

2. CDFG shall maintain the Bank in accordance with the long-term management component of the Bank Closure Plan, unless and until this responsibility is assigned to another entity acceptable to the Co-Chairs. CDFG may perform its obligations directly or may contract with third parties to perform such maintenance.

3. Interest from the nonwasting Endowment Fund, held by CDFG, shall be available to implement the long-term management component of the Bank Closure Plan.

H. Bank Closure: The Bank shall be deemed open on the date that the BEI is fully executed. The Bank shall be deemed closed upon:

1. Mature wetland and riparian habitats have been established consistent with the performance objectives in the Proposal; and

2. Either:

(a) The last authorized Bank credit has been transferred; or

(b) The Sponsor sends the Co-Chairs written notice stating that Sponsor is closing the Bank.

At this point, the project shall be deemed complete.

I. Termination of Agreement Prior to Credit Sales: The Sponsor may withdraw the entire Bank Site and terminate this BEI at any time provided that:

1. No mitigation credits developed in the Bank have been transferred in order to compensate for the loss of aquatic or riparian habitat, or endangered species impacts; and

2. The wetland acreage and habitat values of any wetland habitat existing on the Bank site prior to the initiation of efforts to restore and enhance the site shall be preserved in a condition at least equal to that prior to initiation of Bank establishment efforts;

J. Transfer: The Sponsor may, at any time, designate a replacement Bank Operator who shall agree to assume Sponsor's obligations under this BEI. The replacement Bank Operator shall be subject to the approval of the Co-Chairs; provided, however, that if the Co-Chairs have not given Sponsor written notice of disapproval of the replacement Bank Operator within 45 days of the Co-Chairs' receipt of Sponsor's written notice of designation, such replacement shall be deemed to be approved. Prior to transfer, the Sponsor shall notify the Co-Chairs, and provide a signed commitment from the replacement Bank Operator that it accepts the responsibilities of the BEI.

K. Default. If Sponsor is in default under this BEI, and fails, within 180 days of Sponsor's receipt of written notice from any one or more of the Co-Chairs that Sponsor is in default of its obligations under the BEI, to designate a replacement Bank Operator, this BEI will be terminated. So long as the designated replacement operator is able to demonstrate an ability to satisfy the obligations created by the BEI, this BEI shall not terminate, and the replacement operator shall become solely responsible for Sponsor's obligations under this BEI. If the Sponsor does not designate a replacement operator within 180 days of receipt of the notice described above, then Sponsor shall allow such public or private land or resource management organization acceptable to and as directed by the Co-Chairs to enter onto the Bank property, in order to fulfill the purposes of the Bank, as described in the BEI.

Section VII: Responsibilities of the MBRT

A. MBRT Oversight: The agencies represented on the MBRT agree to provide appropriate oversight in carrying out provisions of this banking instrument.

B. MBRT Review, Consensus: The Co-Chairs agree to consult with the agencies represented on the MBRT when appropriate. The agencies represented on the MBRT agree to review, provide comments on and strive to reach consensus (as provided in the "Federal Guidance for the Establishment, Use, Operation of Mitigation Banks") on all project plans, monitoring reports, remediation plans, and necessary permits for the Bank, as identified or incorporated by reference into the BEI, in a timely manner. Comments on the annual reports and remediation plans will be reviewed within 60 calendar days from the date of complete submittal, except for good cause. If the MBRT is unable to review remediation plans within the time specified, this fact will be reflected in any schedule established for remediation under Section VI.E and any evaluation of Sponsor for time of performance.

C. Evaluation of Bank Progress: The agencies represented on the MBRT agree to review and confirm reports on evaluation of success criteria prior to certifying credits in the Bank, within the same timelines provided in subsection B.

D. Compliance Inspections: The agencies represented on the MBRT shall conduct compliance inspections, as necessary, as determined by the Co-Chairs in coordination with the Sponsor:

1. To verify the credits then currently available in the Bank; and/or
2. Recommend corrective measures as needed.

These inspections shall continue until the effort to restore and enhance the Bank site, as described in the Proposal, has been determined to be completely successful.

Section VIII: Other Provisions

A. Force Majeure:

1. The Sponsor shall be responsible to maintain and remediate those phases and/or subphases of the Bank where work has been performed and credits sold, except upon Catastrophic Events, events of Force Majeure or Unlawful Acts as defined below.

2. Definitions.

a. Catastrophic Event shall mean an event, such as a spill of hazardous or toxic substance, the impact of a vehicle or falling aircraft, or a fire, which has a material and detrimental impact on the quality of native vegetation, soils, or wildlife of the mitigation bank and over which the Property Owner (CDFG) and Sponsor have no control.

b. Force Majeure shall mean war, insurrection, riot or other civil disorders, flood, earthquake, fire, governmental restriction or the failure by authority, or any injunction, which has a material and detrimental impact on the Bank; provided, however, that (i) a riot or other civil disorder shall constitute an event of Force Majeure only if the event has a material and detrimental impact on the quality of native vegetation, soils, or wildlife in the Bank; (ii) a flood shall be considered an event of Force Majeure only if it is greater than a presently projected 100-year flood, where "flood" refers to a runoff event; (iii) an earthquake shall constitute an event of Force Majeure only if the ground motion it generates at the Bank results in a material and detrimental impact on the quality of native vegetation, soils, or wildlife in the Bank; (iv) disease shall constitute an event of Force Majeure only if such event has a material and detrimental impact on the quality of native vegetation, soils, or wildlife in the Bank; and (v) governmental restriction or the failure by any governmental agency to issue any requisite permit or authority, or any injunction or other enforceable order of any court of competent jurisdiction shall not constitute an event of Force Majeure only to the extent that it precludes all other feasible means of remediation.

c. Unlawful Act shall mean the unlawful act of another and shall include an event or series of events, such as the intentional dumping within the Bank or tributaries of the creek of a hazardous toxic substance, or the discharge of such a substance by any person or entity other than Property Owner (CDFG) or the Sponsor in violation of a statute, ordinance, regulation or permit, which event or series of events has a material and detrimental impact on the water quality, native vegetation, soils or wildlife of the Bank.

3. Notwithstanding the foregoing, subject to availability of funds as specified in Section VI.H, Sponsor shall not be relieved from the obligation to maintain and remediate the Bank by reason of any such discharge which occurs as a result of normal noncatastrophic activities. In case of occurrence of a Catastrophic Event, events of Force Majeure, or Unlawful Acts, Sponsor, CDFG and the Co-Chairs shall meet to discuss the future course of action and management of the Bank (areas where credits have been withdrawn) and shall continue their obligation to the extent practicable using the remaining funds in the account.

4. The Sponsor shall bear the burden of demonstrating:

(a) That the Catastrophic Event, event of Force Majeure or Unlawful Act was caused by circumstances beyond the control of the Sponsor and/or any entity controlled by the Sponsor, including its contractors and consultants;

(b) That neither the Sponsor nor any entity controlled by the Sponsor, including its contractors and consultants, could have reasonably foreseen and prevented such Catastrophic Event, event of Force Majeure or Unlawful Act; and

(c) The period during which the Sponsor was prevented by the Catastrophic Event, event of Force Majeure or Unlawful Act from carrying out its obligations to maintain and remediate the phases of the Project was no longer than the period required to address such Catastrophic Event, event of Force Majeure or Unlawful Act.

5. Reasonably foreseeable technical problems, or unanticipated or increased costs or expenses associated with the implementation of actions called for by this BEI, or changed financial or business circumstances in and of themselves shall not serve as the basis for modifications of this BEI or extensions for the performance of the requirements of this BEI.

6. Compliance with any requirement of this BEI by itself shall not constitute compliance with any other requirement. An extension of one compliance date based on a particular incident shall not necessarily result in the extension of a subsequent compliance date or dates. The Sponsor must make an individual showing of proof regarding the cause of each delayed step or requirement for which an extension is sought.

B. Dispute Resolution:

1. Between Members of the MBRT: Resolution of disputes about application of this banking instrument as between the members of the MBRT shall be in accordance with those stated in the Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (60 FR 58605 *et seq.*).

2. Between the MBRT (Acting Through the Co-Chairs) and Sponsor: In the event of any disagreement or dispute between one or more of

the Co-Chairs, acting on behalf of the MBRT, and the Sponsor regarding the interpretation and application of the provisions of this BEI, the appropriate Co-Chair(s) and the Sponsor shall meet within 30 days of a written request therefor made by a party, and shall attempt to resolve such disagreement or dispute. In the event that the Co-Chair(s) and Sponsor have not resolved the disagreement or dispute within 60 days of the date of the notice first requesting a meeting, then either party may elect to resolve the dispute or disagreement by the appropriate remedies then available under federal law.

C. Execution, Validity, Modification and Termination of the Banking Instrument:

1. The Sponsor must sign the BEI, prior to the signature and execution of the BEI by the Co-Chairs and other members of the MBRT. Subsequently, the BEI may be executed in part by each agency that chooses to become signatory to said document. The BEI will become valid and enforceable as between each signatory agency and the Sponsor on the date of that agency's signature.

2. This banking instrument may be amended or modified only upon the written approval of all of the Co-Chairs and the Sponsor, in consultation with the other members of the MBRT.

3. Termination.

(a) As regards individual signatories to the BEI, termination of the BEI may only happen consistent with the following terms:

(i) Any of the MBRT members, with the exception of the Co-Chairs, may terminate their participation upon 30 calendar days' written notification to all signatory parties.

(ii) Co-Chairs of the MBRT may only terminate their participation on the MBRT upon failure of the Sponsor to perform per the terms of the BEI. Such termination shall occur only after written notice of deficiency and opportunity to correct by the Sponsor, under the terms of the BEI, have failed to produce necessary corrective action on the part of the Sponsor. Subject to the above, any one or more of the Co-Chairs may terminate their participation upon 60 calendar days' written notification to all signatory parties.

(iii) If requested, the member(s) of the MBRT proposing to terminate participation in the MBRT agree to meet with the other MBRT members to discuss the reason(s) for such termination, prior to the termination taking effect. Notice of a request for such meeting shall be made by the requesting MBRT member(s) not later than 15 calendar days from receipt of the notice of termination.

(b) Termination by one member of the MBRT of its involvement in this BEI shall not terminate or affect the relationship between the remaining members of the MBRT, toward each other or the Sponsor, under this BEI.

(c) As regards the termination of the BEI in its entirety, the terms and provisions of this BEI will be valid:

(i) For two years from the last date of execution of the BEI by any one or more of the Co-Chairs in the event that no credits are sold from the bank; or

(ii) Until the Bank Closure Plan has been implemented to the satisfaction of the Co-Chairs, in consultation with the other members of the MBRT, and the Co-Chairs provide notice, in writing, to the Sponsor that this instrument may be terminated.

D. Specific Language of Bank Enabling Instrument Shall be Controlling: To the extent that specific language in this document changes, modifies or deletes terms and conditions contained in those documents that are incorporated into the BEI by reference, the specific language within the BEI shall be controlling.

E. Entire Agreement: This BEI, and all exhibits, addenda, schedules and agreements referred to in this BEI, in addition to any other elements of a BEI required under the Federal Guidelines not heretofore provided by the Sponsor, constitute the final, complete and exclusive statement of the terms of the agreement between the Co-Chairs of the MBRT and the Sponsor pertaining to the Bank and supersedes all prior and contemporaneous understandings or agreements of the parties. Each party acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any other party or anyone acting on behalf of any party unless the same has been embodied herein.

F. Reasonableness and Good Faith: Except as specifically limited elsewhere in this BEI, whenever this BEI requires Sponsor or the MBRT to give its consent or approval to any action on the part of the other, such consent or approval shall not be unreasonably withheld or delayed. If either the Sponsor, or any one or more of the Co-Chairs of the MBRT disagrees with any determination covered by this provision and reasonably requests the reasons for that determination, the determining party shall furnish its reason in writing and in reasonable detail within 15 business days following the request.

G. Partial Invalidity: If a court of competent jurisdiction holds any clause of this BEI to be invalid or unenforceable, in whole or in part, for any reason, the validity and enforceability of the remaining clauses, or portions of them, shall not be affected unless an essential purpose of this BEI would be defeated by loss of the invalid or unenforceable provision.

H. Notices: All notices (including requests, demands, approvals or other communications) under this BEI shall be in writing. Notices by the Sponsor to the MBRT shall be made to all of the Co-Chairs of the MBRT. Such notice shall not be effective until deemed received by all Co-Chairs of the MBRT.

Addresses for purposes of giving notice are set forth below. Either party may change its address or telex or fax number by giving the other party notice of the change in any manner permitted by this section.

MBRT Co-Chairs:

USACE:

U.S. Army Corps of Engineer
Los Angeles District
Attn: Chief, Regulatory Branch
911 Wilshire Boulevard
P. O. Box 532711
Los Angeles, CA 90017-3401
Telephone: (213) 452-3406
Fax: (213) 452-4196

CDFG:

California Department of Fish and Game
South Coast Region
Attn: Regional Manager
4949 Viewridge Avenue
San Diego, CA 92123
Telephone: (619) 467-4201
Fax: (858) 467-4235

Legal Office
California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, CA 95814
Telephone: (916) 654-3821
Fax: (916) 654-3805

USFWS:

U.S. Fish and Wildlife Service
Carlsbad Field Office
Attn: Chief, Ecological Services
2730 Loker Avenue West
Carlsbad, CA 92008
Telephone: (760) 431-9440
Fax: (760) 431-9624

MBRT Member:

U.S. Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

Wildlands, Inc.
5910 Auburn Boulevard, Suite 17
Citrus Heights, CA 95621
Telephone: (916) 331-8810
Fax: (916) 331-8755

L. Restriction on Benefit. No member of or delegate to the United States Congress or Federal Resident Commissioner shall be entitled to any share or part of this Agreement, or to any benefit that may arise from it.

M. Counterparts. This Agreement may be executed in any number of duplicate and counterpart originals. A complete original of this Agreement containing original signatures of each of the parties shall be circulated to each of the parties by Sponsor and a complete original of this Agreement shall be maintained in the official records of each of the parties hereto.

N. No Third Party Beneficiaries. This Agreement shall not create any third party beneficiary hereto, nor shall it authorize anyone not a party hereto to maintain a suit for personal injuries, property damages or enforcement pursuant to the provisions of this Agreement. The duties, obligations and responsibilities of the parties to this Agreement with respect to third parties shall remain as otherwise provided by law in the event this Agreement had never been executed.

Section IX: Execution

This BEI shall become effective on the date of the signature by the last agency to sign this BEI, and shall be binding only upon Sponsor and the agencies so signing.

Steve Morgan
President
Wildlands, Inc.
Sponsor

Date

—AND—

John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers
Co-Chair, MBRT

Date

Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service
Co-Chair, MBRT

Date

Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game
Co-Chair, MBRT

Date

Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency
Member, MBRT

Date

MBRT Member:

U.S. Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

Wildlands, Inc.
5910 Auburn Boulevard, Suite 17
Citrus Heights, CA 95621
Telephone: (916) 331-8810
Fax: (916) 331-8755

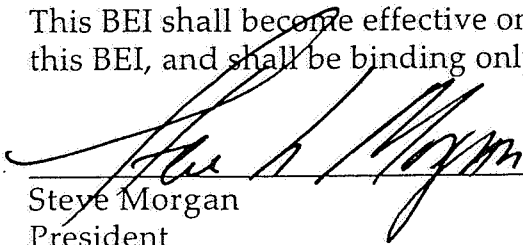
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Section IX: Execution

This BEI shall become effective on the date of the signature by the last agency to sign this BEI, and shall be binding only upon Sponsor and the agencies so signing.



Steve Morgan
President
Wildlands, Inc.
Sponsor

12/3/00

Date

—AND—

John P. Carroll

 John P. Carroll, Colonel
 Corps of Engineers, District Engineer
 Los Angeles District
 U.S. Army Corps of Engineers
 Co-Chair, MBRT

001129

 Date

Ken Berg
 Field Supervisor
 Carlsbad Field Office
 U.S. Fish and Wildlife Service
 Co-Chair, MBRT

Date

Charles F. Raysbrook
 Regional Manager
 South Coast Region
 California Department of Fish and Game
 Co-Chair, MBRT

Date

Alexis Strauss
 EPA Water Director
 Region IX
 U.S. Environmental Protection Agency
 Member, MBRT

Date

John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers
Co-Chair, MBRT

Date

Nancy Dilbert

October 20, 2000

Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service
Co-Chair, MBRT

Date

Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game
Co-Chair, MBRT

Date

Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency
Member, MBRT

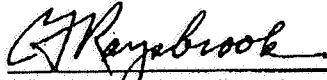
Date

John P. Carroll
 Corps of Engineers, District Engineer
 Los Angeles District
 U.S. Army Corps of Engineers
 Co-Chair, MBRT

Date

Ken Berg
 Field Supervisor
 Carlsbad Field Office
 U.S. Fish and Wildlife Service
 Co-Chair, MBRT

Date



Charles D. Raysbrook
 Regional Manager
 South Coast Region
 California Department of Fish and Game
 Co-Chair, MBRT

10/31/00
 Date

Alexis Strauss
 EPA Water Director
 Region IX
 U.S. Environmental Protection Agency
 Member, MBRT

Date

John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers
Co-Chair, MBRT

Date

Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service
Co-Chair, MBRT

Date

Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game
Co-Chair, MBRT

Date

Catherine Kukeman for
Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency
Member, MBRT

10/6/2000
Date

**FIRST AMENDMENT
AND CLARIFICATION TO
RANCHO JAMUL MITIGATION BANK ENABLING INSTRUMENT**

THIS FIRST AMENDMENT AND CLARIFICATION TO RANCHO JAMUL MITIGATION BANK ENABLING INSTRUMENT ("First Amendment") is made and entered into by and among Wildlands, Inc. (hereinafter, "Sponsor"), the Los Angeles District of the U.S. Army Corps of Engineers ("USACE"), Region IX of the U.S. Environmental Protection Agency ("USEPA"), the Carlsbad Field Office of the U.S. Fish and Wildlife Service ("USFWS"), and the State of California, Department of Fish and Game ("CDFG"), with reference to the following:

1. Original BEI. Sponsor, USACE, USEPA, USFWS and CDFG are the named parties to that certain "Mitigation Bank Enabling Instrument Rancho Jamul Mitigation Bank" (the "Original BEI") respecting the creation of a mitigation bank on approximately 109 acres of land (Phases I and II) out of a 3,700±-acre parcel of land owned by the State of California known as the "Rancho Jamul Property" in San Diego County, California. Capitalized terms not defined herein shall have the meaning given to them in the Original BEI.

2. Amendments. The Original BEI is hereby amended and clarified in the following respects:

2.1. Section II (Stipulations), Part B (Establishment and Use of Credits) is hereby amended to read as follows, in its entirety:

"B. Establishment and Use of Credits: Whereas, it is anticipated that, in accordance with provisions V(D-H) of this banking instrument below, credits will be available to be used as off-site mitigation in accordance with all applicable requirements."

2.2. The heading of Section II (Stipulations), Part E (Exhibits) is hereby relabeled to read as follows, in its entirety:

"D. Exhibits:"

2.3. Section IV (Establishment of the Bank), Part B (Environmental Documentation and Permitting), Paragraph 1 is hereby amended to read as follows, in its entirety:

"1. Nationwide Permit 982015400, which was issued to Bank Developer on September 25, 2000, and which has an effective date of September 25, 2000 (the "NWP #27 Permit"). The NWP #27 Permit does not require the Bank Sponsor to obtain further notification from the Corps that the activities may proceed. Modifications to such activities which fall within the provisions of subsection VI.E and

modifications which do not require review by the applicable USACE District Engineer under the Nationwide Permit Program contained in 33 CFR 330.1 *et seq.*, are within the authorization provided by the NWP #27 Permit;"

2.4. Section IV (Establishment of the Bank), Part B (Environmental Documentation and Permitting), Paragraph 4 is hereby amended to read as follows, in its entirety:

"4. Streambed Alteration Agreement;"

2.5. Section IV (Establishment of the Bank), Part C (Modifications of the Proposal) is hereby amended to read as follows, in its entirety:

"C. Modifications of the Proposal: Establishment of Phase I of the Bank will be performed as described in Exhibit B, and the credits will become available in accordance with the schedule specified in Part V, Section F, of the BEI. Phase II of the Bank must be approved by the MBRT, acting through the Co-Chairs, prior to establishment of that Phase. In the event that the Sponsor determines that modifications must be made in the Proposal to ensure successful establishment of habitat within the Bank, or in order to comply with specific permits or other authorizations needed to establish the Bank, the Sponsor shall submit a written request for such modification to the MBRT, through any of the Co-Chairs. The Sponsor shall then implement all modifications approved by the Co-Chairs, acting in consultation with the other members of the MBRT. Documentation of implemented modifications shall be made consistent with subsection IV(F), *infra*."

2.6. Section IV (Establishment of the Bank), Part D, Subparagraph 1(b) is hereby amended to read as follows, in its entirety:

"(b) Verified by a subsequent on-site inspection by the Co-Chairs of the MBRT; or 60 calendar days have passed without any of the Co-Chairs of the MBRT contacting the Sponsor to arrange for such on-site verification inspection."

2.7. Section V (Operation of the Bank), Part F (Schedule of Credit Availability), Subparagraph 2(a)(iii) is hereby amended to read as follows, in its entirety:

"(iii) Availability of enhancement credits will be based upon the removal of exotic plant species as shown on the as-built drawings. The as-built drawings showing removal of exotic plant species may be combined with the grading and planting as-built drawings, or at Sponsor's election, by separate as-built exotic plant removal drawing(s)."

2.8. Section VI (Maintenance and Monitoring of the Bank), Part E (Remediation Plans), Paragraph 2 is hereby amended to read as follows, in its entirety:

"2. If any one or more of the Co-Chairs determine that the Bank is operating at a deficit, the Sponsor shall be given written notification, whereupon debiting of credits will immediately cease, and the Co-Chairs, in consultation with the other members of the MBRT and the Sponsor, will determine what remedial actions are necessary. If, within six months of the written notification, conditions do not change or continue to deteriorate, or any one or more of the Co-Chairs are dissatisfied with efforts undertaken by the Sponsor, control of the Contingency Funds and the long-term management funds shall be transferred to the Co-Chairs, or their designees, as appropriate, to undertake corrective measures."

2.9. Section VI (Maintenance and Monitoring of the Bank), Part G (Long-Term Maintenance), Paragraphs 1 and 2 are hereby amended to read as follows, in their entirety:

"1. The Bank shall be maintained in perpetuity in accordance with the terms and provisions of the long-term management plan, to be provided in the Bank Closure Plan, to be prepared by the Sponsor and submitted to the Co-Chairs within six months of the date of this BEI becoming effective. In no event, however, shall the Sponsor be permitted to close the Bank under Section VI.H of this BEI prior to the submission to, and approval by, the Co-Chairs of the Bank Closure Plan.

"2. CDFG shall maintain the Bank in accordance with the long-term management component of the Bank Closure Plan, unless and until this responsibility is assigned to another entity acceptable to the Co-Chairs. CDFG may perform its obligations directly or may contract with third parties to perform such maintenance."

2.10. The introductory portion of Section VI (Maintenance and Monitoring of the Bank), Part H (Bank Closure) is hereby amended to read as follows, in its entirety:

"H. Bank Closure: The Bank shall be deemed open on the date that the BEI is fully executed. The Bank shall be deemed closed when:"

2.11. Section VIII (Other Provisions), Part A (Force Majeure), Paragraph 3 is hereby amended to read as follows, in its entirety:

"3. Notwithstanding the foregoing, subject to availability of funds as specified in Section VI.G, Sponsor shall not be relieved from the obligation to maintain and remediate the Bank by reason of any

such discharge which occurs as a result of normal noncatastrophic activities. In case of occurrence of a Catastrophic Event, events of Force Majeure, or Unlawful Acts, Sponsor, CDFG and the Co-Chairs shall meet to discuss the future course of action and management of the Bank (areas where credits have been withdrawn) and shall continue their obligation to the extent practicable using the remaining funds in the account."

2.12. Section VIII (Other Provisions), Part B (Dispute Resolution), Paragraph 2 (Between the MBRT (Acting Through the Co-Chairs) and Sponsor) is hereby amended to read as follows, in its entirety:

"2. Between the MBRT (Acting Through the Co-Chairs) and Sponsor: In the event of any disagreement or dispute between one or more of the Co-Chairs, acting on behalf of the MBRT, and the Sponsor regarding the interpretation and application of the provisions of this BEI, the appropriate Co-Chair(s) and the Sponsor shall meet within 30 days of a written request therefor made by a party, and shall attempt to resolve such disagreement or dispute. In the event that the Co-Chair(s) and Sponsor have not resolved the disagreement or dispute within 60 days of the date of the notice first requesting a meeting, then either party may elect to resolve the dispute or disagreement by the appropriate remedies then available under state or federal law."

2.13. Section VIII (Other Provisions), Part F (Reasonableness and Good Faith) is hereby amended to read as follows, in its entirety:

"F. Reasonableness and Good Faith: Except as specifically limited elsewhere in this BEI, whenever this BEI requires Sponsor or the MBRT to give its consent or approval to any action on the part of the other, such consent or approval shall not be unreasonably withheld or delayed. If either the Sponsor, or any one or more of the Co-Chairs of the MBRT disagrees with any determination covered by this provision and reasonably requests the reasons for that determination, the determining party shall furnish its reason in writing and in reasonable detail within 15 business days following the request."

2.14. Section VIII (Other Provisions), Part H (Notices) is hereby amended to read as follows, in its entirety:

"Notices: All notices (including requests, demands, approvals or other communications) under this BEI shall be in writing. Notices by the Sponsor to the MBRT shall be made to all of the Co-Chairs of the MBRT. Such notice shall not be effective until deemed received by all Co-Chairs of the MBRT.

"Addresses for purposes of giving notice are set forth below. Either party may change its address or telex or fax number by giving the

other party notice of the change in any manner permitted by this section.

"MBRT Co-Chairs:

USACE:

U.S. Army Corps of Engineer
Los Angeles District
Attn: Chief, Regulatory Branch
911 Wilshire Boulevard
P. O. Box 532711
Los Angeles, CA 90017-3401
Telephone: (213) 452-3406
Fax: (213) 452-4196

CDFG:

California Department of Fish and Game
South Coast Region
Attn: Regional Manager
4949 Viewridge Avenue
San Diego, CA 92123
Telephone: (619) 467-4201
Fax: (858) 467-4235

Legal Office
California Department of Fish and Game
1416 9th Street, 12th Floor
Sacramento, CA 95814
Telephone: (916) 654-3821
Fax: (916) 654-3805

USFWS:

U.S. Fish and Wildlife Service
Carlsbad Field Office
Attn: Chief, Ecological Services
2730 Loker Avenue West
Carlsbad, CA 92008
Telephone: (760) 431-9440
Fax: (760) 431-9624

MBRT Member:

U.S. Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

Wildlands, Inc.
5910 Auburn Boulevard, Suite 17
Citrus Heights, CA 95621
Telephone: (916) 331-8810
Fax: (916) 331-8755"

3. Other Terms and Conditions. Except as herein modified, all other terms and conditions of the Original BEI shall remain in full force and effect.

Date: 11/22/00

SPONSOR:

WILDLANDS, INC.

By: [Signature]
Title: CEO

CO-CHAIRS, MBRT:

Date: _____

USACE:

By: _____
John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers

Date: _____

USFWS:

By: _____
Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service

—AND—

Date: _____

CDFG:

By: _____

Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game

MEMBER, MBRT:

Date: _____

USEPA:

By: _____

Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency

MBRT Member:

U.S. Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

Wildlands, Inc.
5910 Auburn Boulevard, Suite 17
Citrus Heights, CA 95621
Telephone: (916) 331-8810
Fax: (916) 331-8755"

3. Other Terms and Conditions. Except as herein modified, all other terms and conditions of the Original BEI shall remain in full force and effect.

Date: 11/22/00

SPONSOR:

WILDLANDS, INC.

By: [Signature]
Title: CEO

CO-CHAIRS, MBRT:

Date: _____

USACE:

By: _____
John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers

Date: _____

USFWS:

By: _____
Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service

—AND—

MBRT Member:

U.S.Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

Wildlands, Inc.
5910 Auburn Boulevard, Suite 17
Citrus Heights, CA 95621
Telephone: (916) 331-8810
Fax: (916) 331-8755"

3. Other Terms and Conditions. Except as herein modified, all other terms and conditions of the Original BEI shall remain in full force and effect.

Date: _____

SPONSOR:

WILDLANDS, INC.

By: _____

Title: _____

CO-CHAIRS, MBRT:

Date: 08/12/9

USACE:

By: *John P. Carroll*

John P. Carroll, Colonel
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers

Date: _____

USFWS:

By: _____

Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service

—AND—

MBRT Member:

U.S. Environmental Protection Agency
Region IX
Attn: EPA Water Director
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 744-1001
Fax: (415) 744-1078

Sponsor:

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Citrus Heights, CA 95621
Telephone: (916) 331-8810
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3. Other Terms and Conditions. Except as herein modified, all other terms and conditions of the Original BEI shall remain in full force and effect.

Date: _____

SPONSOR:

WILDLANDS, INC.

By: _____

Title: _____

CO-CHAIRS, MBRT:

Date: _____

USACE:

By: _____

John P. Carroll
Corps of Engineers, District Engineer
Los Angeles District
U.S. Army Corps of Engineers

Date: _____

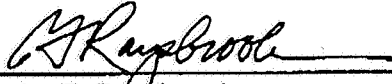
USFWS:

By: Nancy Gilbert
for Ken Berg
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service

—AND—

Date: 11/15/00

CDFG:

By: 
Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game

MEMBER, MBRT:

Date: _____

USEPA:

By: _____
Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency

Date: _____

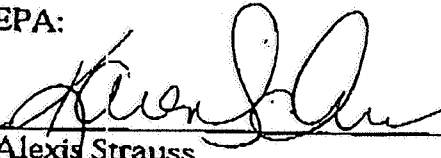
CDFG:

By: _____
Charles F. Raysbrook
Regional Manager
South Coast Region
California Department of Fish and Game



Date: 12/6/00

MEMBER, MBRT:

USEPA:

By: 
Alexis Strauss
EPA Water Director
Region IX
U.S. Environmental Protection Agency

Rancho Jamul Mitigation Bank Location and Service Area

-  Mitigation for all In-Kind Impacts
-  All In-Kind Mitigation beyond In-Watershed Replacement*

*In-Watershed Replacement is:
2:1 for Riparian Habitat
1:1 for other In-Kind Habitats

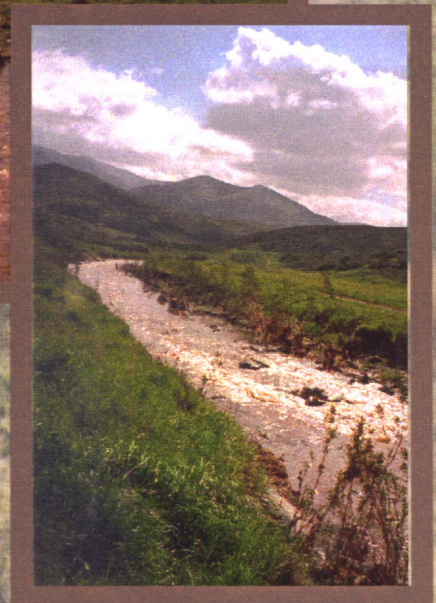
TYPES OF MITIGATION:
Corps Jurisdictional Freshwater Wetlands/Waters of the U.S.
Corps Jurisdictional Riparian Habitat
Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters
Corps Jurisdictional Enhancement Credits (for temporary impacts)
Non-Corps Jurisdictional Oak/Riparian Habitat
Least Bell's Vireo Habitat



Wildlands, Inc.

Rancho Jamul Mitigation Bank Bank Enabling Instrument

San Diego, California
Updated: September, 2000



Prepared for:

Mitigation Bank Review Team

California Department of Fish and Game
U.S. Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

Prepared by:

Wildlands, Inc.



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Executive Summary

The former Daly Ranch, also known as the Rancho Jamul property, was purchased in 1997 by the Trust for Public Land in order to conserve its important biological and open space values (Figures 1a and 1b). A portion of the property was subsequently transferred to the California Department of Fish and Game and is now managed for its wildlife resources. The property has been noted in regional resource assessments as an important site for conservation.

The creek corridors of the site, however, have been degraded by a long history of intensive agricultural use and grazing. The creeks of the site are entrenched and lack connection with adjacent terraces, which lack multiple level riparian habitat and are dominated by ruderal vegetation. Prior to the recent removal of cattle, the majority of the creek segments were denuded. These conditions indicated a high potential for restoration and mitigation banking on this regionally strategic conservation site.

In early 1998, Wildlands reached a Land Use and Easement Agreement with the Trust for Public Land that will allow the development of a wetland and riparian mitigation bank. Under this agreement, Wildlands has conducted the research, planning, and design necessary to create this Rancho Jamul Restoration and Management Plan.

This Restoration and Management Plan seeks to restore, enhance, and preserve the floodplain, fluvial, and associated wetland processes of Dulzura and Jamul Creeks. In many areas of the site, this will require earthwork to reconnect the creekbed with now-isolated terraces. The Plan calls for an expansion of floodplains, the establishment of overflow channels, the re-establishment of creeks once diverted, and the planting and care of adjacent riparian forests. The Plan will result in the enhancement of approximately 8 acres of existing wetlands, the creation and restoration of approximately 72 acres of new U.S. Army Corps of Engineers jurisdictional wetlands, and the establishment of approximately 29 acres of new non-jurisdictional riparian vegetation. All of this habitat will be suitable for the endangered least Bell's vireo and other riparian species.

The enhancement, restoration, and creation of wetland and riparian habitat at the site provides the basis for mitigation credits that can be used to compensate for impacts within a prescribed service area for the Mitigation Bank. The numbers of credits and the proposed service area are set forth in Chapter 4 of this Plan.

Chapter 1: Rancho Jamul Mitigation Bank Purpose

Importance of the Rancho Jamul Site

Rancho Jamul, with its relatively abundant water resources and rich soils, is in a transition from agriculture to wildlife habitat. The property is located in a "Biological Core Area and a Linkage Area," as defined in the Multiple Species Conservation Plan (City of San Diego, 1996), and it encompasses two creeks, Dulzura and Jamul, that are identified as having a role in the recovery of the Federally listed endangered least Bell's vireo. The biogeographical assets of the site and the degraded condition of its creeks provide an important opportunity to assist in regional conservation efforts.

Goals and Objectives

The goal of the Rancho Jamul Mitigation Bank is to restore wetland and riparian habitat and to protect and expand populations of special-status species at a site in south San Diego County, California (Figures 1a and 1b). In particular, the proposed Mitigation Bank site will play an important role in protecting and increasing a population of the endangered least Bell's vireo and promoting linkages with other populations of this species.

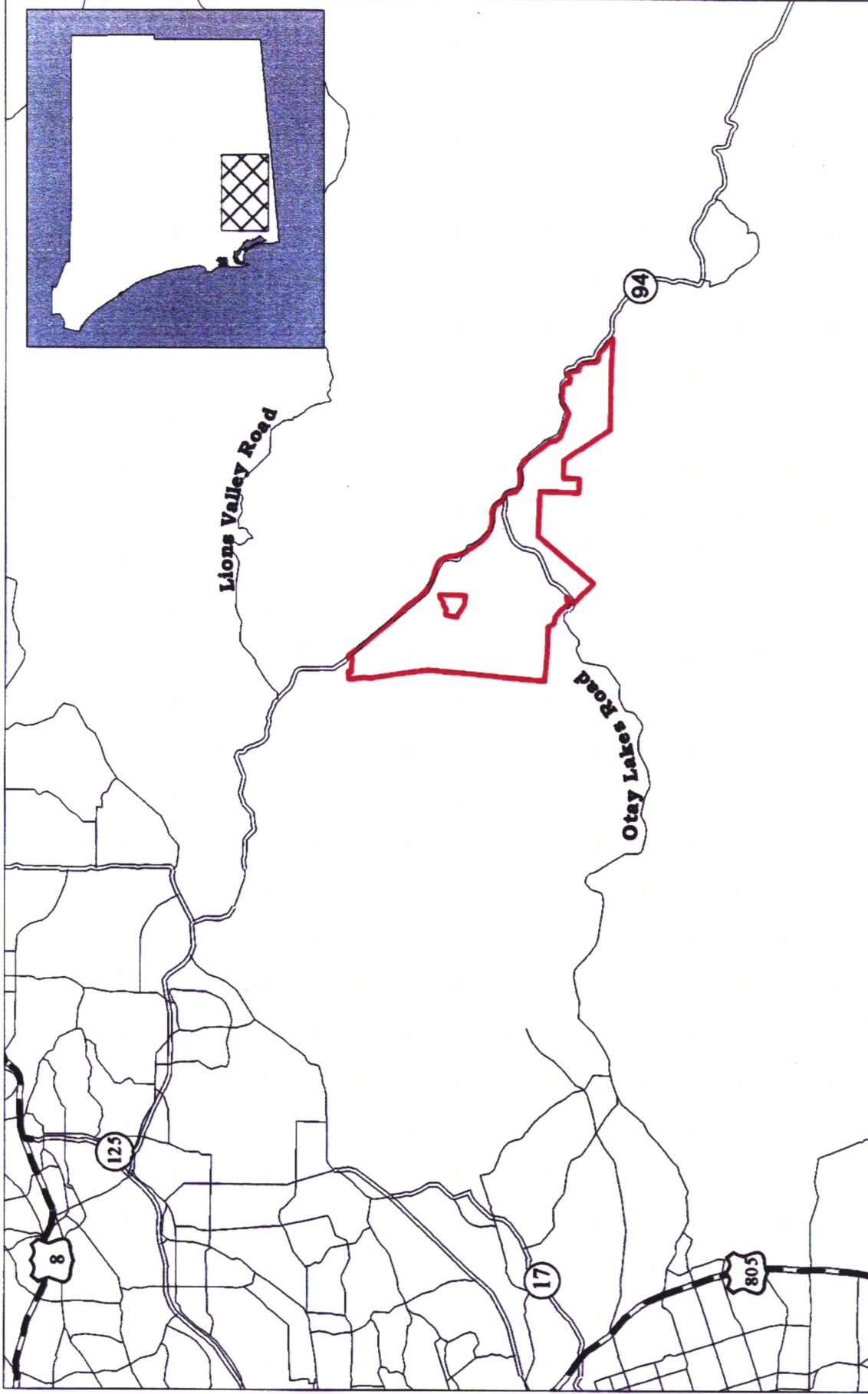
The objectives of the Rancho Jamul Mitigation Bank include the following:

1. To restore, enhance, and preserve the floodplain, fluvial, and associated wetland processes of Dulzura and Jamul Creeks;
2. To restore the native vegetative cover and structural diversity of the stream-influenced areas of the site;
3. To increase native species diversity;
4. To provide new breeding sites and foraging habitat for the least Bell's vireo and other riparian species;
5. To enhance and manage habitat for other special-status species, such as the arroyo toad, the California red-legged frog, and the Western spadefoot toad.
6. To provide connectivity with adjacent habitats;

7. To serve as a refugia during periods of potential population declines following random naturally occurring events; and

8. To endow and manage the site in perpetuity to protect habitats and special-status species populations.

In meeting these objectives, Wildlands seek to further several stated public objectives, as described below.

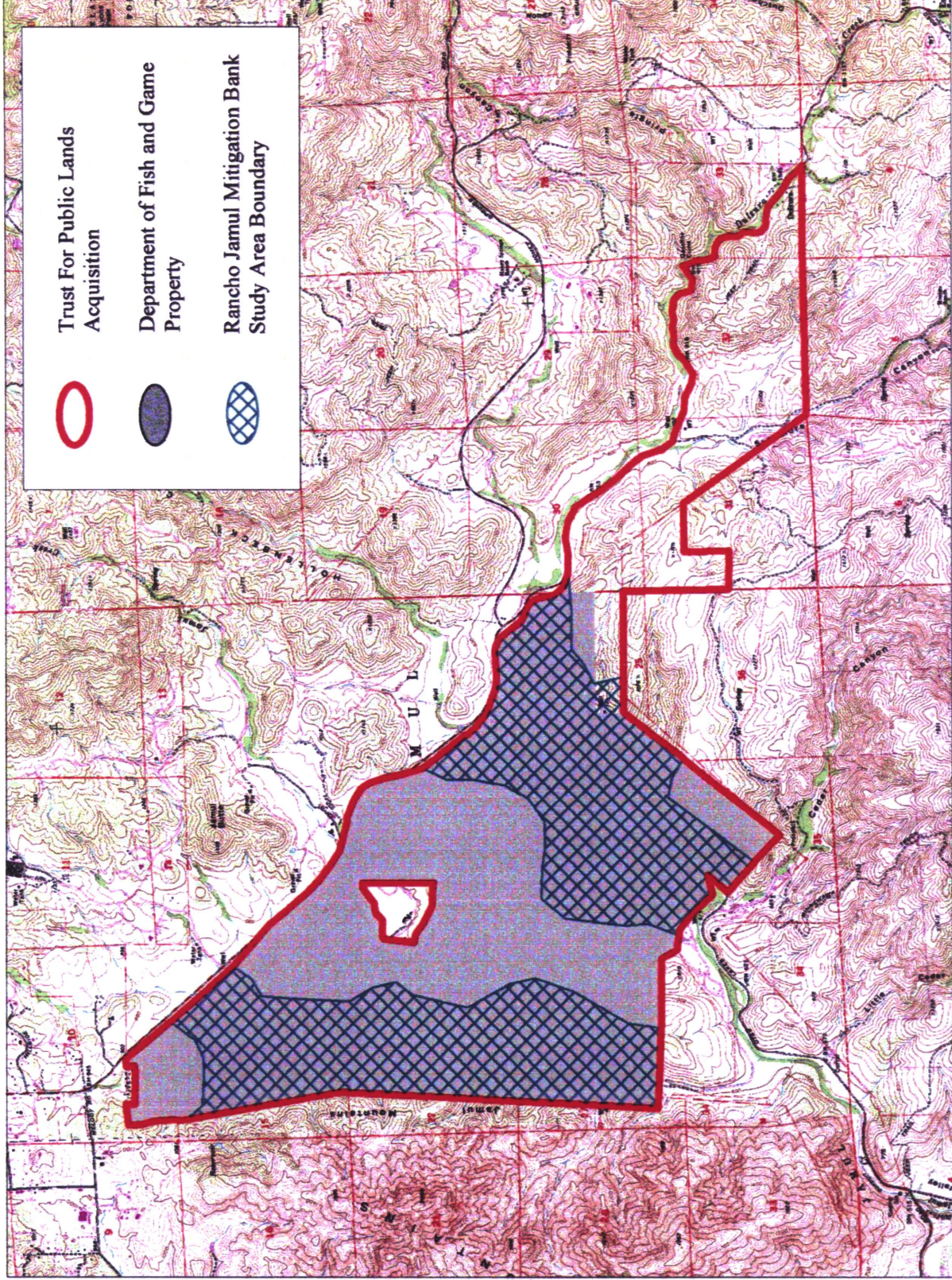


Source: SANDAG



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Figure 1a
Bank Regional Location



Source: Teale Data Center and Trust For Public Lands Mapping



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Figure 1b
Bank Study Area and Trust for Public Lands Acquisition

Federal Wetlands Policy

The 1993 White House proposal package on wetlands supports the use of mitigation banking in appropriate circumstances as a means of compensating for authorized wetland impacts ("Protecting America's Wetlands: A Fair, Flexible, and Effective Approach", White House Office on Environmental Policy, August 24, 1993). The "Federal Guidance for the Establishment, Use and Operation of Mitigation Banks" provides clarification of mitigation banking procedures and describes requirements for mitigation banks (Federal Register, Vol. 60, No. 43, March 6, 1995). Wetland banking credit may be given for restoration, creation or enhancement of wetlands, as well as for the preservation of wetlands when it is demonstrated that the preservation will augment the functions of the restored, created, or enhanced aquatic resource.

Federal Endangered Species Act/ Draft Recovery Plan for the Least Bell's Vireo

The Federal Endangered Species Act (ESA) requires that plants and animals listed as threatened or endangered be protected from extinction. Under the ESA, Federal agencies, in consultation with the U.S. Fish and Wildlife Service, must ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of any listed species (Section 7(a)). The U.S. Fish and Wildlife Service is authorized to issue permits for the take of listed species so long as the take is incidental to otherwise lawful activities (Section 10(a)). Section 4 of the ESA requires the U.S. Department of Interior and the U.S. Department of Commerce to develop and implement recovery plans for listed species. The U.S. Fish and Wildlife Service has issued a Draft Recovery Plan for the Least Bell's Vireo (U.S. Fish and Wildlife Service. 1998).

The Rancho Jamul Mitigation Bank furthers the objectives of the endangered species act by protecting and expanding habitat for special-status species, such as the least Bell's vireo. The Draft Recovery Plan for the Least Bell's Vireo contains criteria for downlisting and delisting the species. The single Downlisting Criterion, used to determine when the species may be reclassified from endangered to threatened, reads:

Criterion 1: Stable or increasing least Bell's vireo populations/metapopulations, each consisting of several hundred or more breeding pairs, are protected and managed at the following sites: Tijuana River, *Dulzura Creek/Jamul Creek/Otay River*, Sweetwater River, San Diego River, San Luis Rey River, Camp Pendleton/Santa Margarita River, Santa Ana River, an Orange County/Los Angeles County metapopulation, Santa Clara River, Santa Ynez River, and an Anza Borrego Desert metapopulation (U.S. Fish and Wildlife Service. 1998. page 65. *Italics added*).

The first of the two delisting criteria entails the establishment of additional populations in currently unpopulated locations (the Salinas River, the San Joaquin Valley, and the Sacramento

Valley). The second delisting criterion specifies the protection and perpetual management of occupied habitat:

Criterion 3: Threats are reduced or eliminated so that least Bell's vireo populations/metapopulations listed above are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat occupied by least Bell's vireos (U.S. Fish and Wildlife Service. 1998. page 66).

The Rancho Jamul Mitigation Bank will provide a perpetual funding source for site management through an endowment account tied to the sale of mitigation credits.

The California Endangered Species Act

The California Endangered Species Act (CESA) establishes state policy to conserve, protect, restore, and enhance endangered species and their habitats. Species listed as rare, threatened, or endangered are protected, and a taking is only permitted when it is incidental to an otherwise lawful activity. Mitigation for effects on special-status species is normally defined and required in the context of the California Environmental Quality Act.

California Policy on Conservation Banks

The State of California Official Policy on Conservation Banks (State of California, 1995) states that such banks serve several useful functions. "First and foremost, banks provide for the conservation of important habitats and/or habitat linkages." (page 2). Other functions noted include consolidation of otherwise piecemeal mitigation for individual project impacts, economies of scale, and incentives for private landowner participation. The Policy envisions conservation banks at sites which will provide for the long-term conservation of habitat and species.

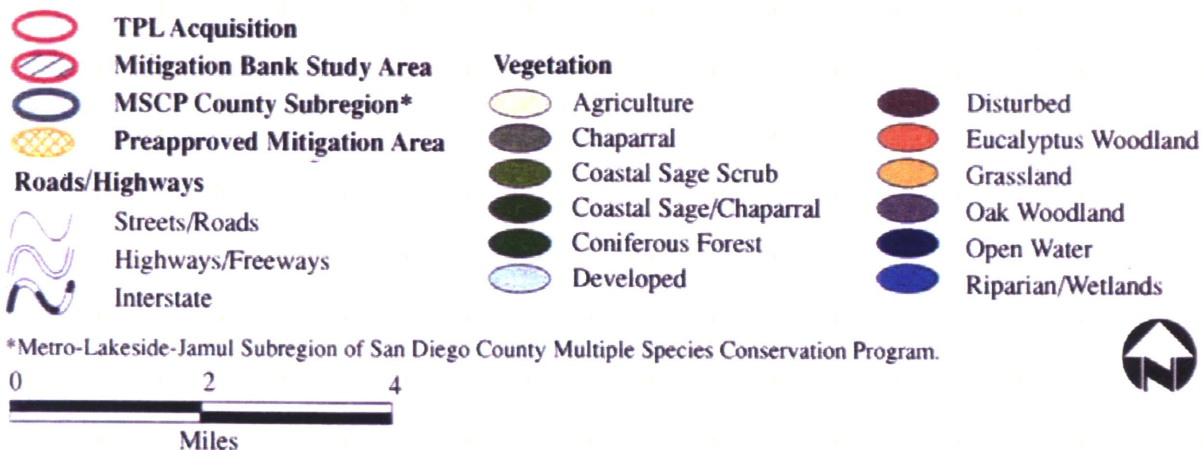
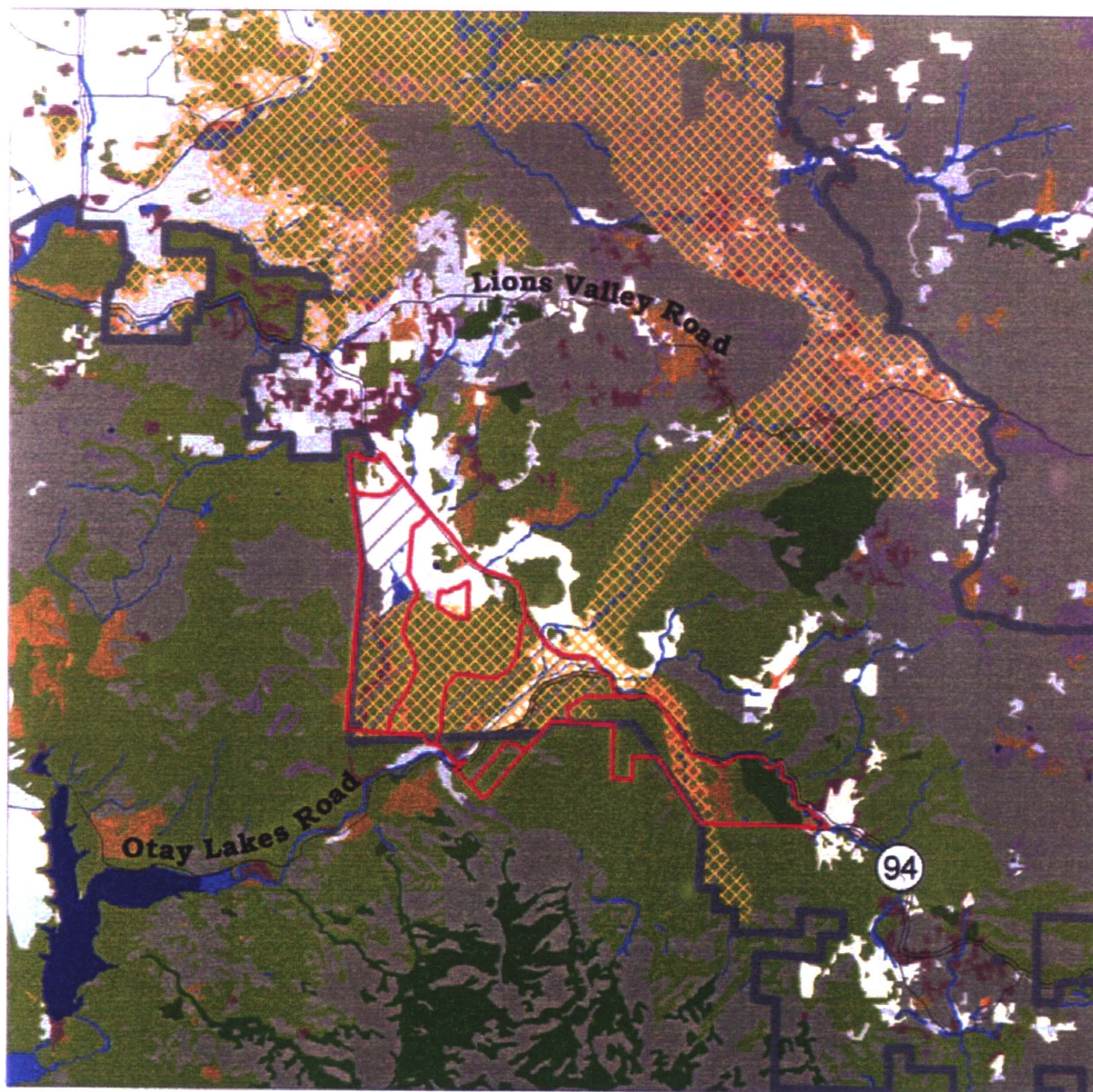
The Rancho Jamul Mitigation Bank will consolidate mitigation for individual project impacts into a regionally significant site that can be readily restored, monitored, and managed in perpetuity.

Natural Communities Conservation Planning Act/ Multiple Species Conservation Program/ County of San Diego Subarea Plan

The State Natural Communities Conservation Planning Act (NCCPA) seeks to protect and perpetuate the biological diversity inherent in natural plant and animal communities. The NCCPA gives the California Department of Fish and Game the authority to enter into agreements with any person or entity to protect areas ensuring the continued existence of multiple species and their habitats, while allowing for reasonable and appropriate urban development. Mitigation and conservation banks may play a role in these agreements.

The San Diego Multiple Species Conservation Program (MSCP) is authorized under the NCCPA (as well as under the State and Federal Endangered Species Acts). The MSCP study area encompasses 12 jurisdictions and 582,243 acres, of which 252,132 acres (43%) are within the unincorporated area of San Diego County. The MSCP establishes a 172,000 acre preserve system in southwestern San Diego County.

The MSCP is being implemented by subarea plans of participating jurisdictions. The County of San Diego Subarea Plan for the MSCP identifies acreage-based preservation goals for a variety of habitats, totalling 101,268 acres. Approximately 63,000 acres of this goal were already protected through public ownership or private ownership committed to open space when the County of San Diego Subarea Plan was adopted (October 22, 1998). The 4,800 acres of Rancho Jamul were not included in the protected land total (63,000 acres) at the time of Subarea Plan adoption. Much of Rancho Jamul was shown as part of a "Preapproved Mitigation Area", a zone the wildlife agencies have preapproved as meeting the County's Subarea Plan conservation goals. The relationship of the Rancho Jamul Mitigation Bank to the Preapproved Mitigation Area is shown in Figure 2.



Source: SANDAG

Figure 2
The Rancho Jamul Mitigation Bank Relative to the Multiple Species Conservation Program (MSCP) County Subarea Plan Preapproved Mitigation Area



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The presently unmet riparian habitat protection goals of the County of San Diego Subarea Plan include the following:

- Freshwater marsh: 51 acres
- Oak riparian forest: 1,856 acres
- Riparian forest: 149 acres
- Riparian woodland: 2 acres
- Riparian scrub: 324 acres

The Rancho Jamul Mitigation Bank can contribute significantly to the achievement of these goals by protecting and restoring wetland and riparian habitat; the proposed Mitigation Bank will entail the restoration and enhancement of over 100 acres of riparian habitat, constituting approximately 21% of the riparian goals listed above. The Mitigation Bank accomplishes this by further refining and implementing the concept of preapproved mitigation contained in the San Diego County Subarea Plan.

County of San Diego Biological Mitigation Ordinance

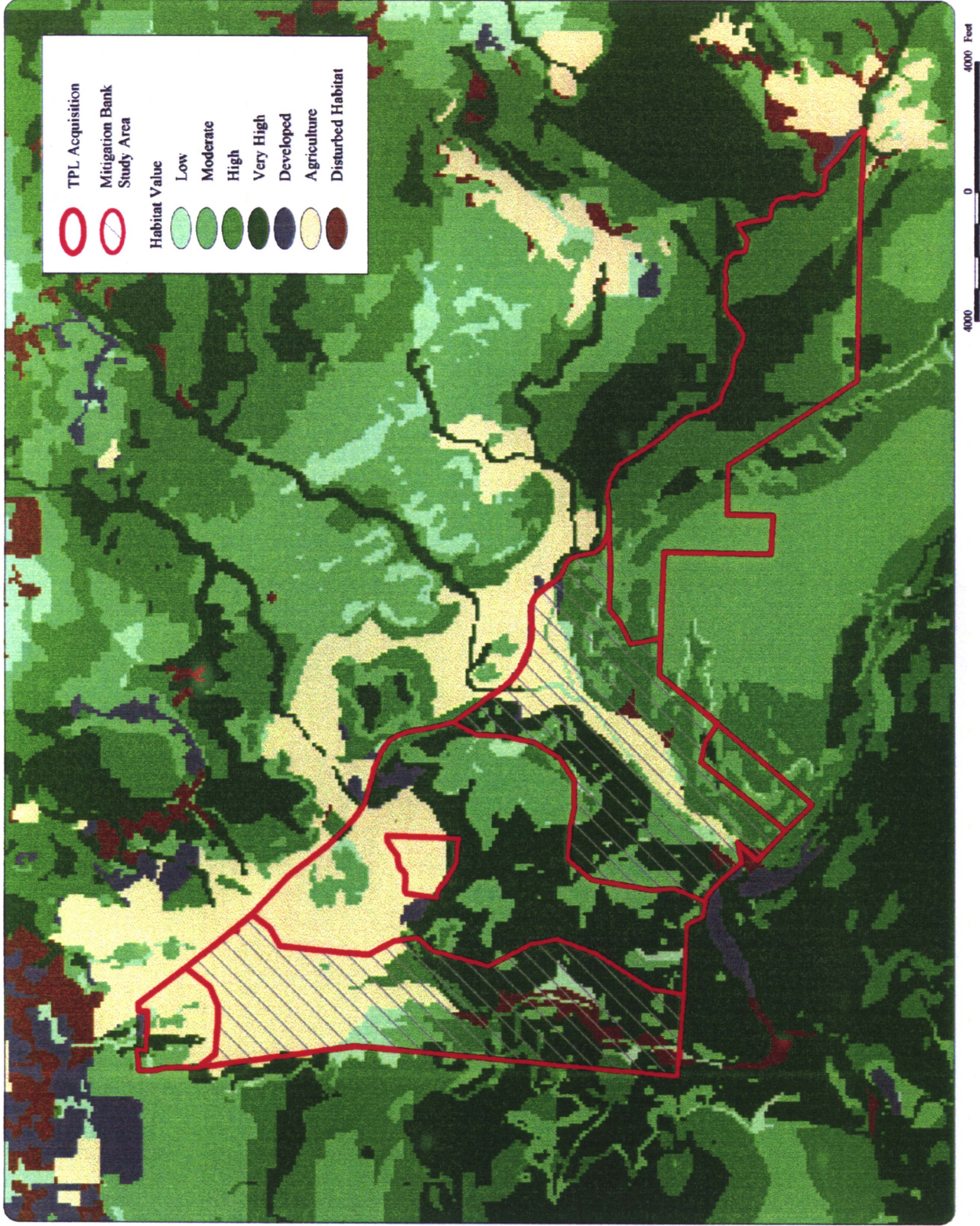
The County of San Diego Biological Mitigation Ordinance serves to implement the San Diego County Subarea Plan for the MSCP by guiding development to locations outside of biological core areas and by establishing mitigation standards for discretionary projects. The mitigation standards fall into two broad categories, those based on the habitat being affected, and those based on the species being affected.

The habitat-based mitigation requirements that are applied to a project depend on the "tier level" of the habitat being impacted and upon the quality of habitat at both the mitigation site and the project site (see Appendix A); the habitat quality is determined by whether or not a site meets specified criteria for a biological resource core area. The Rancho Jamul Mitigation Bank is focused on mitigating for losses of Tier I habitat, namely wetlands and riparian habitats. The site qualifies as a biological resource core area under the Ordinance criteria in that it is largely within a preapproved mitigation area, it can contribute to the long-term survival of sensitive species, it contains an important linkage/corridor, it contains land rated High and Very High on the MSCP Habitat Evaluation Map (Figure 3), and it is part of a protected block of habitat greater than 500 acres. This site definition as a biological resource core area indicates that normal mitigation ratios for impacts under the County Ordinance will be either 1:1 (i.e. acre for acre) for low quality impact sites and 2:1 for high quality impact sites.

County of San Diego Mitigation Banking Policy

The County of San Diego Mitigation Banking Policy discusses the process of recognizing and using mitigation banks owned and operated by private entities, and it sets standards for the

establishment and administration of mitigation banks that will be owned and operated by the County. The Policy acknowledges the lead role of the resource agencies in approving private mitigation banks, but requests that the agencies provide the County with a 30-day opportunity to review mitigation bank proposals. The policy also requires the bank owner/manager to provide the County with an accounting of available mitigation credits.



Source: SANDAG



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Figure 3
The Rancho Jamul Mitigation Bank Relative to the MSCP County
Subarea Plan Habitat Evaluation Map

Chapter 2: Bank Site Description

Past Owners and Uses of Rancho Jamul

The name Jamul Rancho was formalized in 1829 through a grant of 8,926.22 acres to Pio Pico, a man who would later become a Governor of California under Mexican rule. However, the land had been used for grazing livestock for several decades prior to that grant by the San Diego mission. The first agricultural priority of the missionaries was livestock and they developed herds that numbered into the thousands. The mission used Jamul Valley for winter grazing for mules and for pasturing their flock of 17,000 sheep (Tierra Environmental Services 1998). Because of its abundant water supplies, the Valley was especially important in maintaining livestock during dry years (Englehardt 1920).

Rancho Jamul, through a succession of owners and squatters spanning the Mexican and American periods, has remained in agriculture, with a focus on livestock grazing. At various times, the focus has shifted toward cultivation. For example, an 1871 report of one Rancho Jamul farmer's yield included oats seven feet tall and one hundred tons of wheat (Tierra Environmental Services 1998).

In the late 19th century, the ranch came under the ownership of the Southern California Mountain Water Company, a holding of sugar fortune heir, John D. Spreckels. The Water Company further developed the property for agriculture. A reported average of 100 tons of hay each day was baled at the ranch, with a season total of 2,500 tons (Figures 4-7). Other crops reported included barley, corn, beans, and spineless cactus (Tierra Environmental Services 1998).

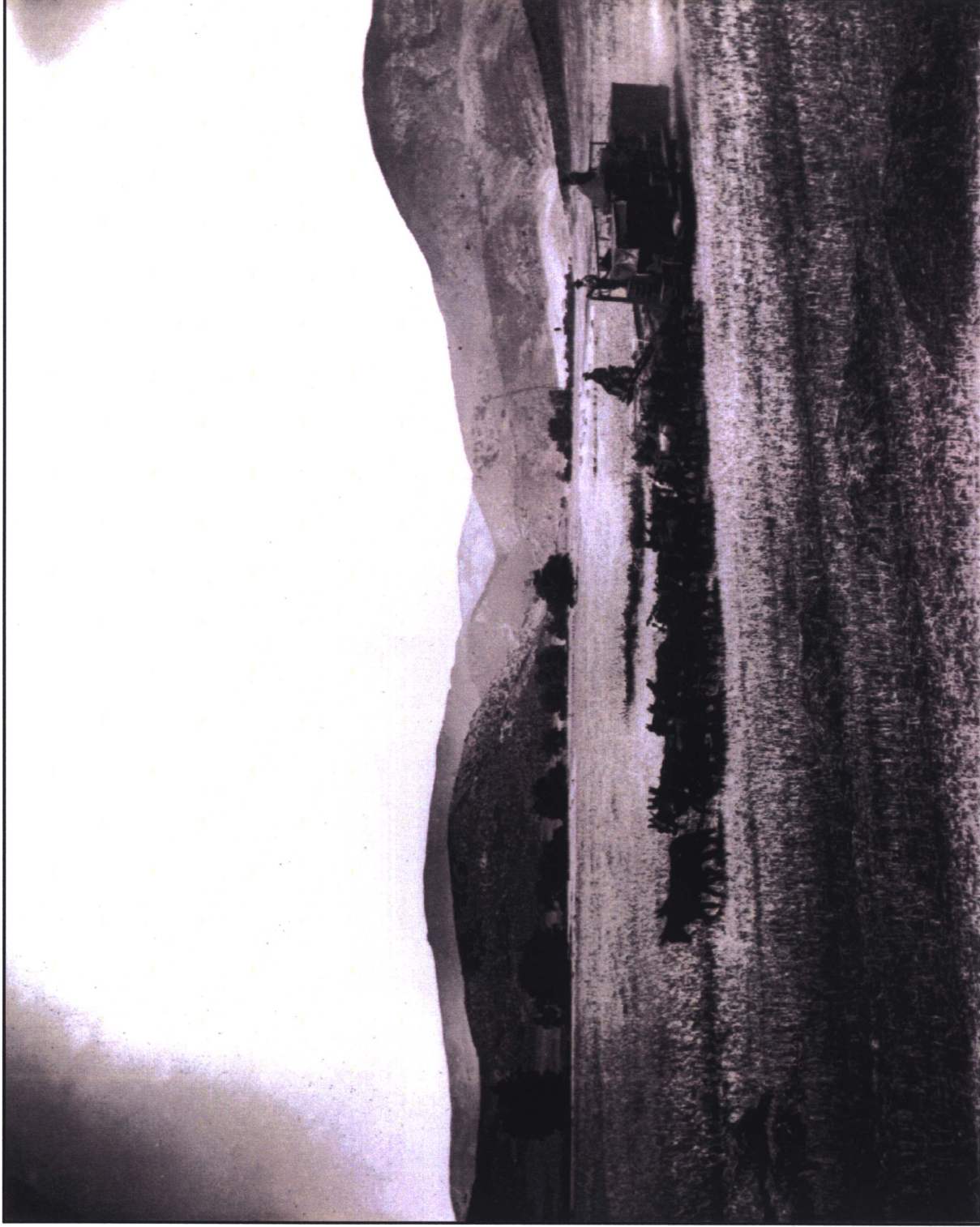
A map of the site from 1908 shows approximately 514 acres of cultivation located adjacent to upper Jamul Creek and additional acreage noted as "arable" along both Jamul and Dulzura Creeks. The 1908 map also indicates two streamside environments: 1) a 43-acre marsh at the confluence of two branches of Jamul Creek and 2) an area identified as creek-bed along a mile-long reach of Dulzura Creek averaging approximately 200 feet in width, with a wide node of approximately 500 feet (Figure 8).

In 1929, San Diego County contractor and rancher George R. Daley bought Rancho Jamul and converted it into a modern cattle ranch. Until a 1944 fire, the Daley Ranch included a three story barn, a grain elevator, a silo type grain bin, and a barley rolling and recleaning plant, among other facilities. At the time of the fire, the Daleys owned 1,200 cattle on three ranches (Tierra Environmental Services 1998).

Aerial photographs from 1928 (Figure 9) show that the condition of Jamul Creek on the site was degraded with little riparian vegetation. This correlates with the appearance of the site as seen in a ground-level photograph taken on the site in 1928 (Figure 10). Dulzura Creek appears in the

1928 aerial photograph as a broad (200-300 feet) floodplain with sparse vegetation and some apparently downcut embankments (Figure 11).

The most recent farming of the Daley Ranch included a period (1987-1992) of crop cultivation when an irrigation system was installed; cucumbers, cabbage, lettuce, and onions were grown in the northern portion of the property on both sides of Jamul Creek (Snyder Consulting 1997).



Source: San Diego Historical Society (Tierra Environmental)





Source: San Diego Historical Society (Tierra Environmental)



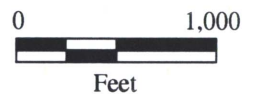
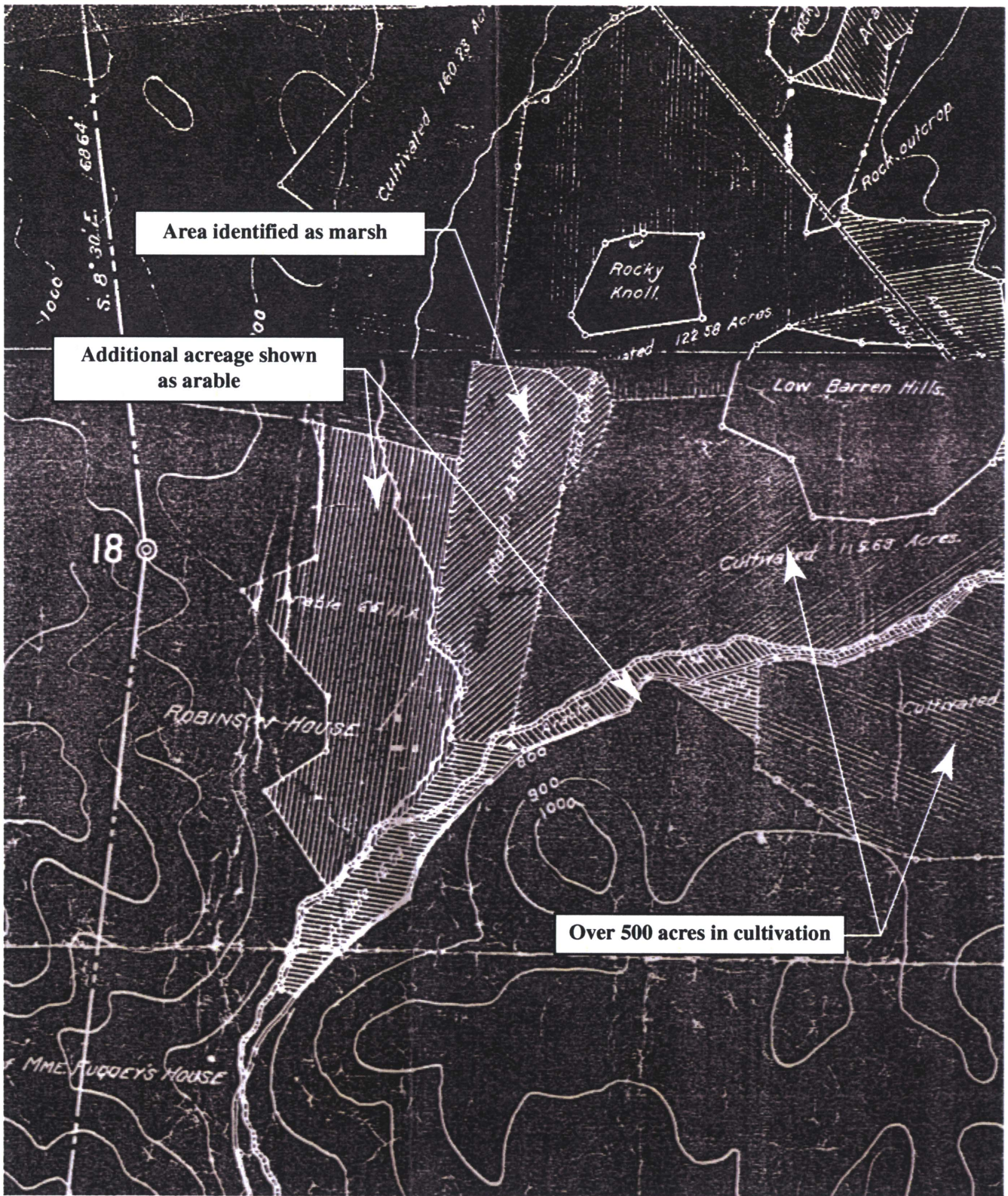
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Figure 6
Hay Production in Study Area - 1910



Source: San Diego Historical Society (Tierra Environmental)





Source: Tierra Environmental



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Figure 8a
1908 Topographic Map of Rancho Jamul Showing
Areas of Cultivation and Creek Beds

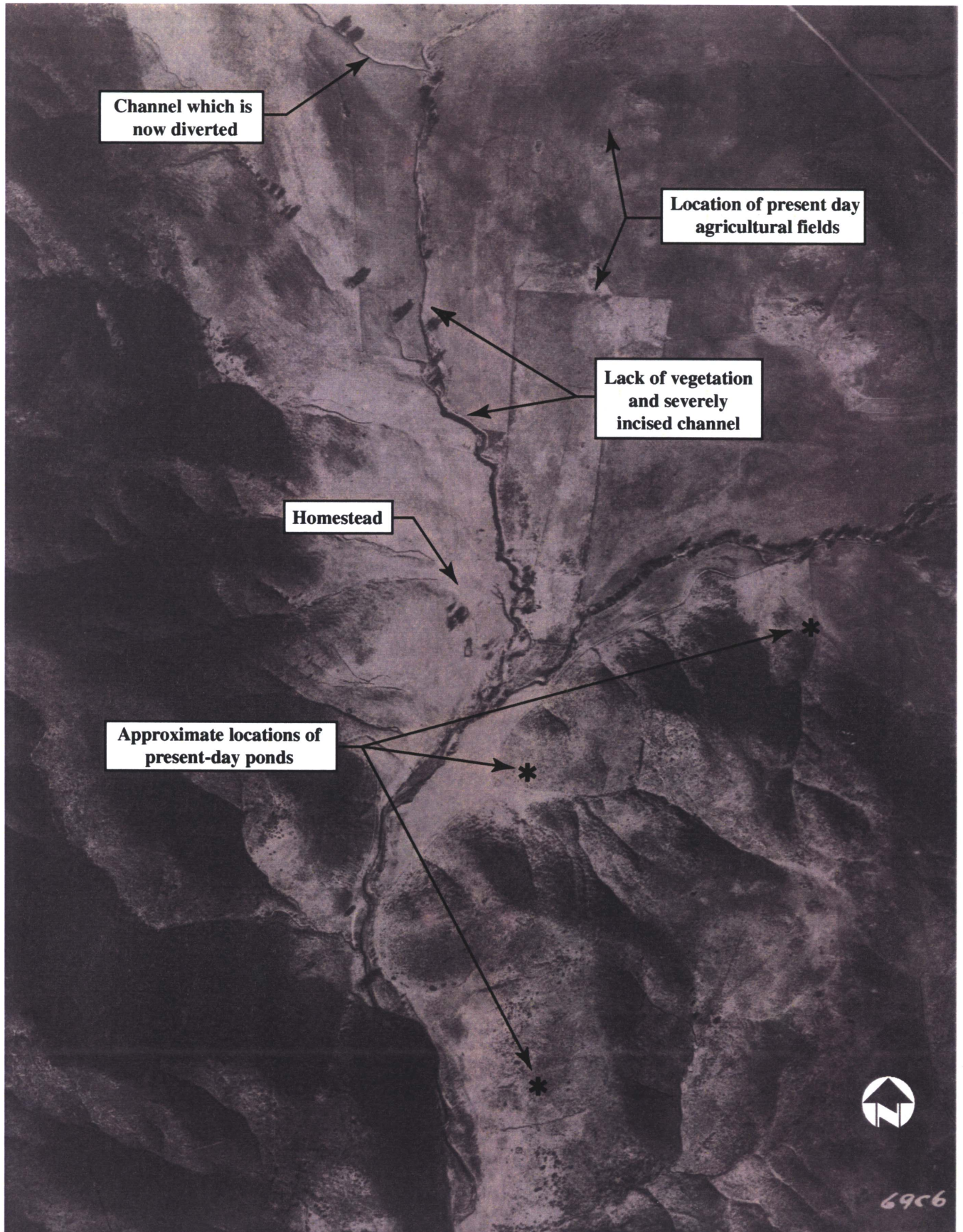


Source: Tierra Environmental



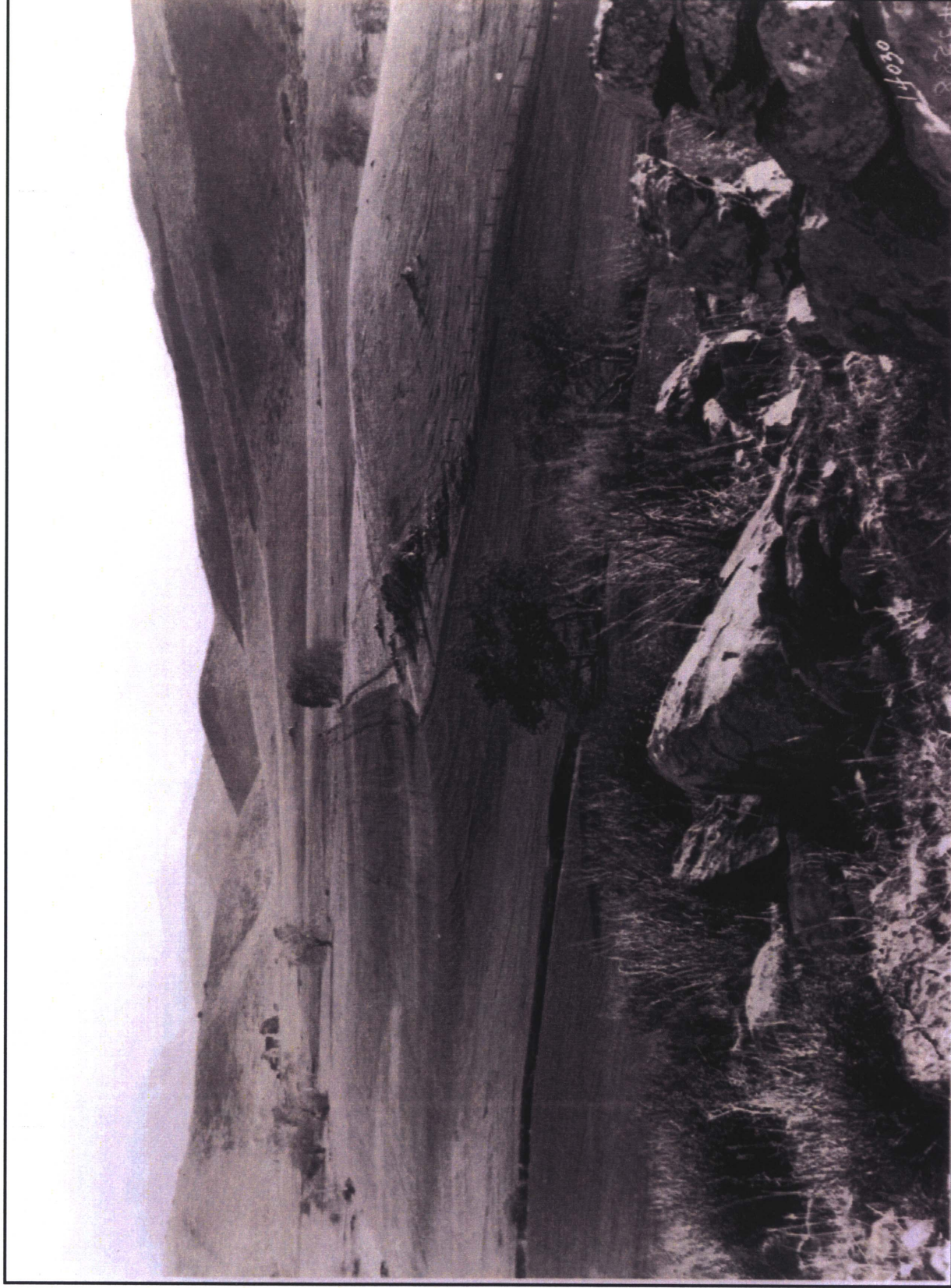
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Figure 8b
1908 Topographic Map of Rancho Jamul Showing
Areas of Cultivation and Creek Beds



Source: County of San Diego aerial photograph files



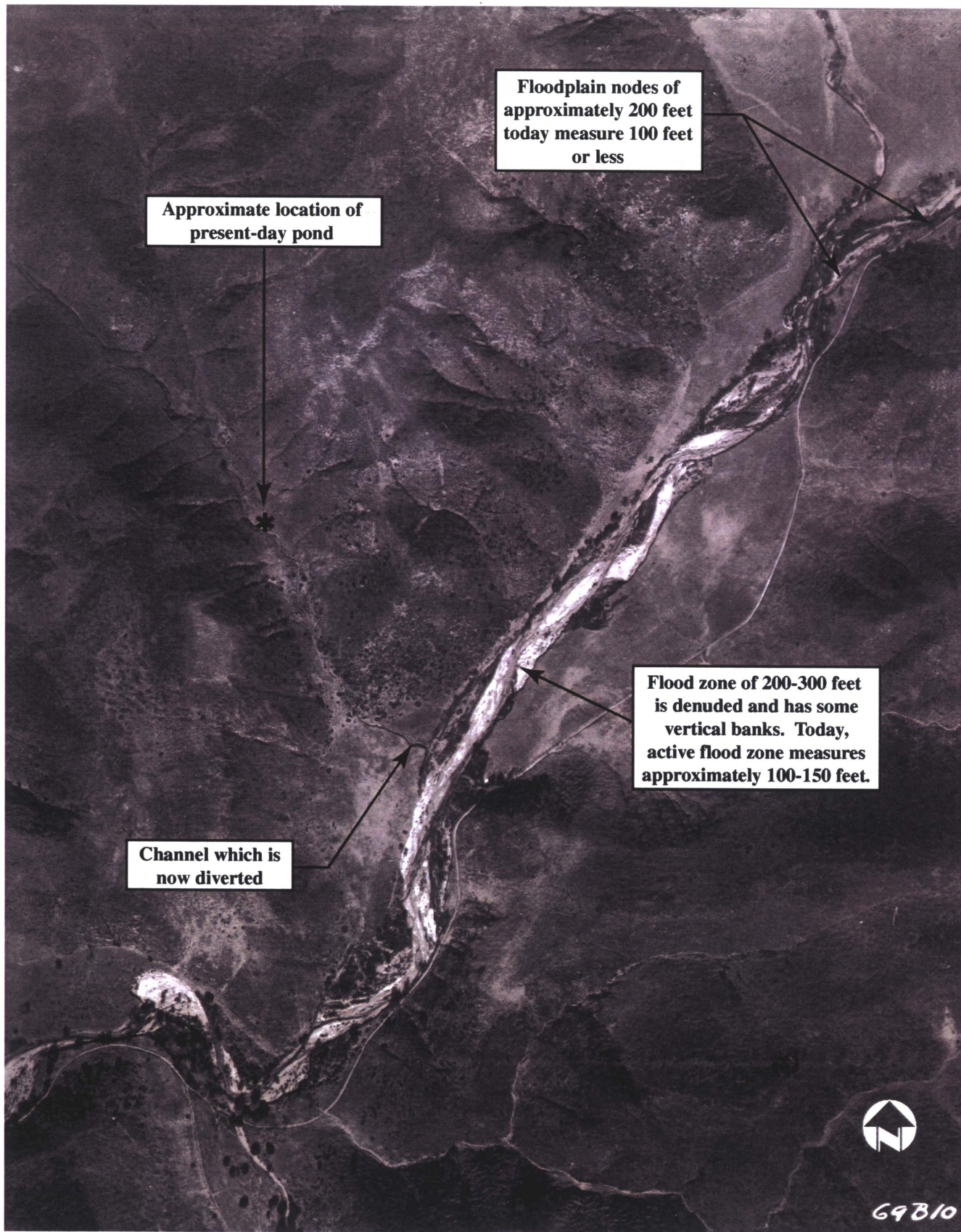


Source: San Diego Historical Society (Tierra Environmental)



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Figure 10
Overview of Jamul Creek Tributary Looking South - circa. 1928



Source: County of San Diego aerial photograph files



Topography

The Rancho Jamul Mitigation Bank is located within the foothills and interior valleys of the southern portion of San Diego County. This area is dominated by level terraces, broad plains, and rolling hills. The project area is centered around Jamul and Dulzura Creeks (Figure 12).

Jamul Creek is a seasonal drainage that flows southerly from the northeastern portion of the project area. The main branch of Jamul Creek flows onto the property at an elevation of 750 feet above sea level through a culvert under Highway 94 near the entrance to the former Daley residence -- the initial reach of the main branch is not part of the Mitigation Bank. To the north of the Jamul Creek mainstem, two branches of a tributary enter the site through culverts under Highway 94 at an elevation of approximately 810 feet. The confluence of this tributary with the mainstem of Jamul Creek is located just south of a broad flat plain at an elevation of approximately 720 feet. From this point, the creek flows southerly in a partially sinuous alignment through a narrow valley that separates the Jamul Mountains from the hills of the Rancho Jamul property. The project area ends downstream at an elevation of 620 feet.

Dulzura Creek flows southwesterly through the project area in a broad valley situated generally southeast of Jamul Creek. A northern branch of this stream enters the site under Highway 94 at an elevation of approximately 700 feet above sea level. The southerly branch also enters the site at an elevation of 700 feet. Both of these branches meander through a flat plain to their confluence at an elevation of 680 ft. Here, the valley narrows between slopes that rise to an elevation of 1000 feet. Downstream the valley broadens again, and is then joined by an intermittent creek prior to exiting the site.

Hydrology

The project site lies within the 98,000-acre Otay River Watershed. Jamul Creek on the Mitigation Bank site has a contributing drainage basin of approximately 11,000 acres and Dulzura Creek has a contributing basin of approximately 27,000 acres (Figure 13).

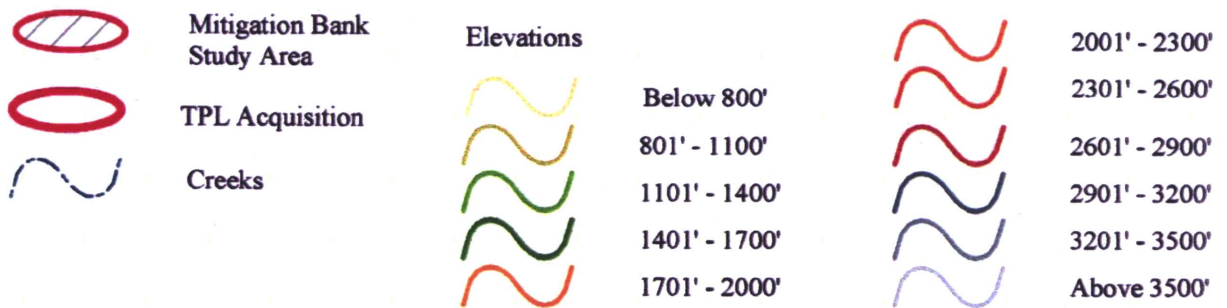
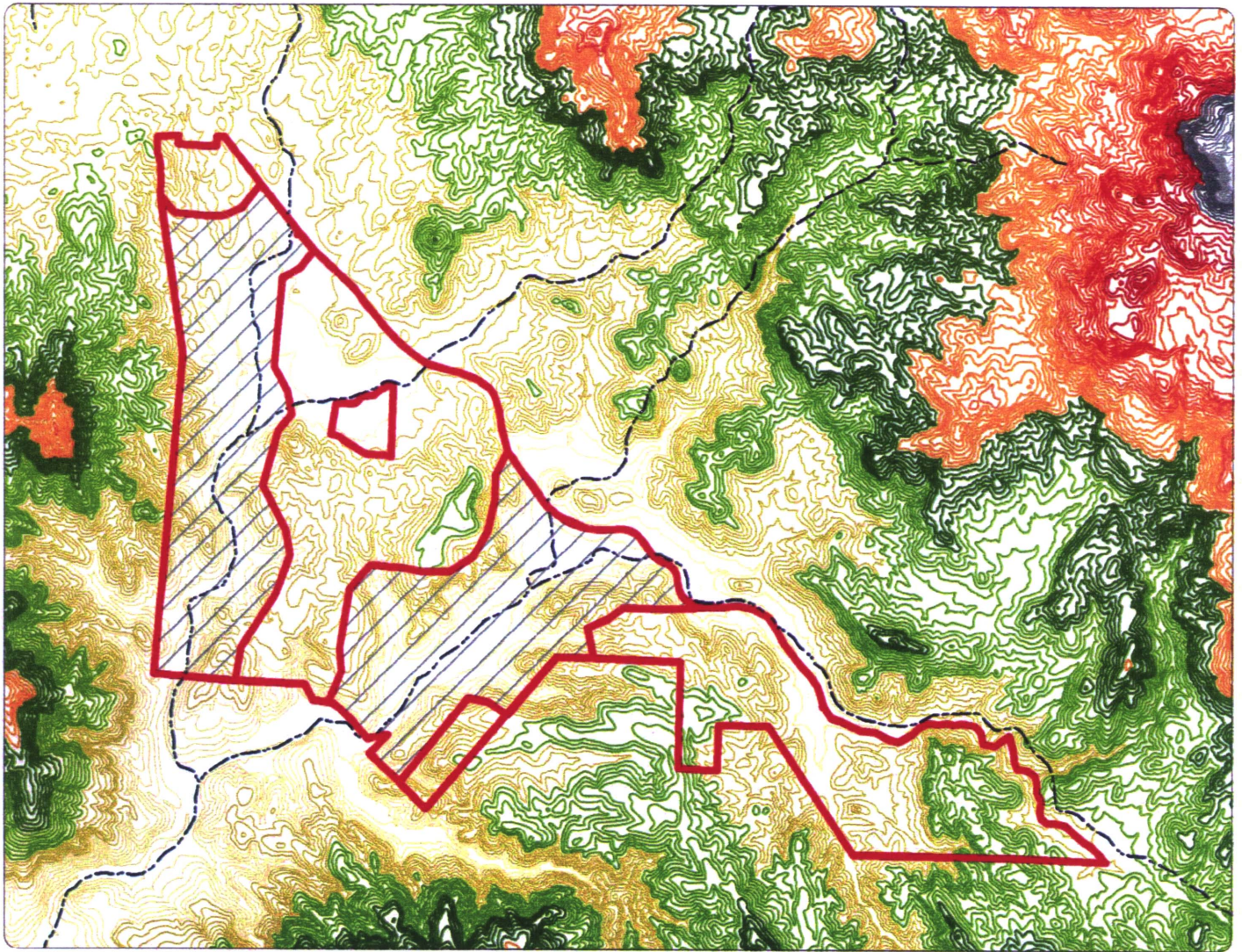
Streamflow in the two creeks is influenced by the size of the contributing basins, the geomorphic characteristics and condition of those basins, the timing and intensity of precipitation, and other factors. Dulzura Creek is additionally influenced by conveyance of water for municipal supply.

Streamflow data is available from a stream gauge on Jamul Creek just below the confluence of Jamul and Dulzura creeks. Mean daily flows are depicted in Figure 14 based on the available data for the period of 1940 through 1997. Mean daily flows range from a low of approximately five cubic feet per second (cfs) in October to a high of approximately 68 cfs in March.

As described previously, the condition of the creeks has been compromised by past land use practices. This degraded condition is readily apparent in the present day morphology of the channels.

Northwest Hydraulic Consultants (NHC) has surveyed a series of cross-sections of the two creeks to provide detailed, location-specific topographic information (Appendix B). The majority of Jamul Creek had a "U-shaped" cross-section defined by a narrow creek bed within vertical or steeply sloping eroding banks. Upper segments of Dulzura Creek had similar morphology. Preliminary hydraulic analysis by NHC reveals that many reaches of the creeks are so deeply entrenched that they completely contain the 100-year flood event (Appendix D). In other words, there is effectively no longer a natural flood plain along these reaches.

Active head cuts are found in several locations along Jamul Creek. Erosion at these locations is destabilizing the creeks and increasing the linear extent and depth of downcut channels. This downcut condition may lead, in turn, to further loss of flood plain and subsequent declines in localized groundwater. This process may inhibit revegetation of the upper streamside terraces if it is not corrected.

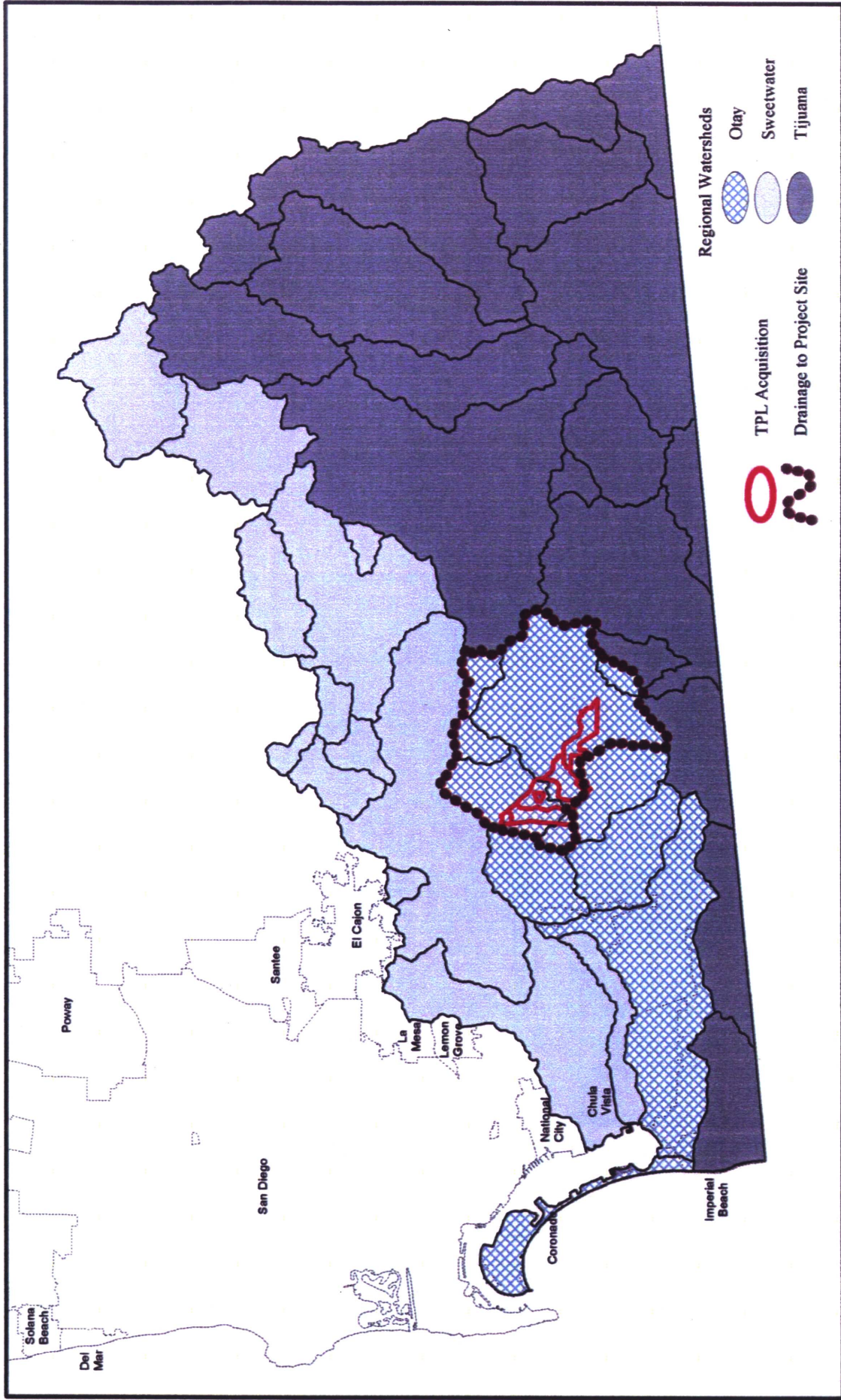


Source: SANDAG



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Figure 12
Topography of Rancho Jamul

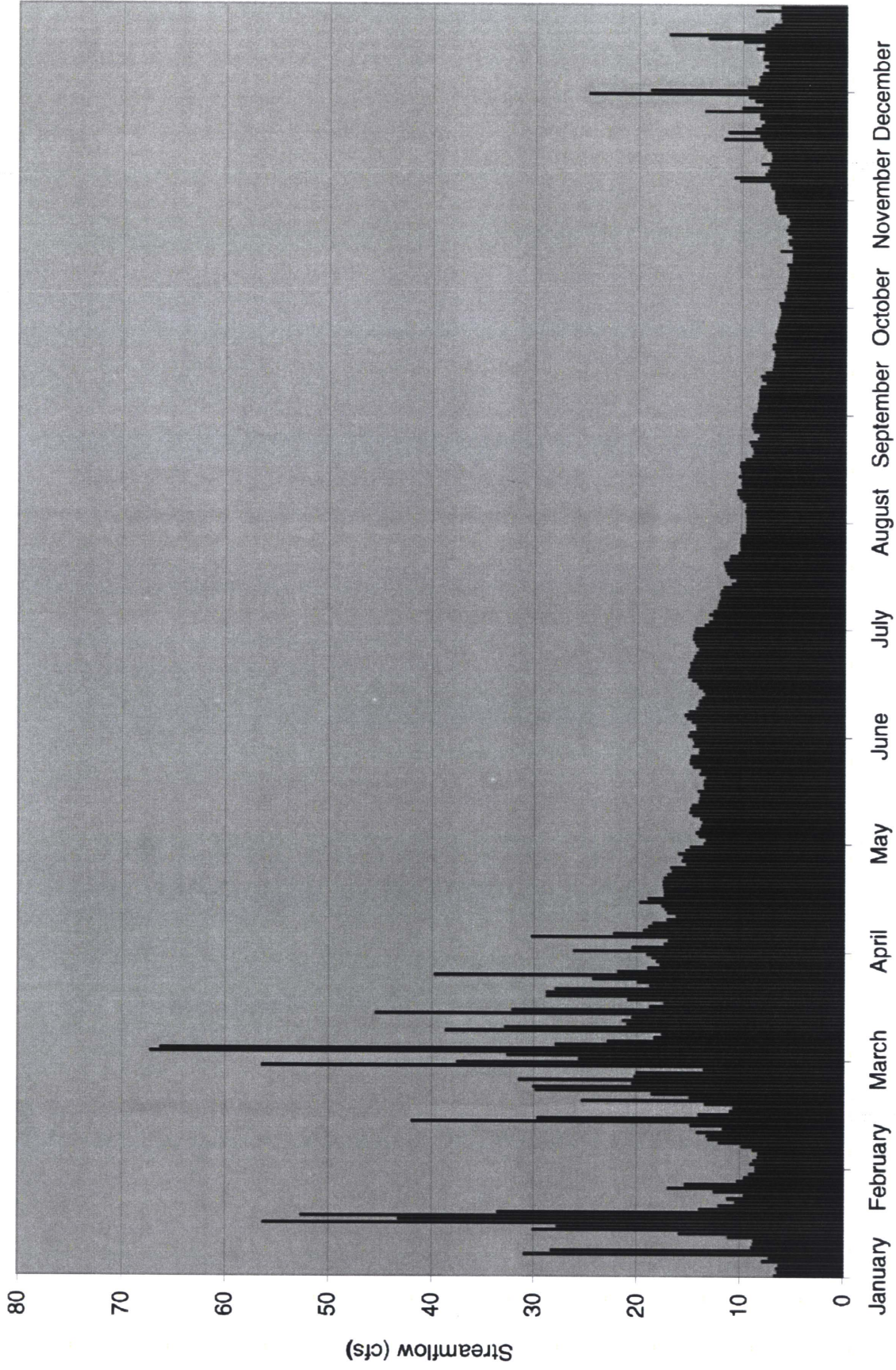


Source: SANDAG



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Figure 13
Watershed Boundaries and Drainage Basins Contributing to Rancho Jamul



Source: San Diego Historical Society (Terra Environmental)



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Figure 14
Mean Daily Flows on Jamul Creek - 1940 to 1997

In September of 1998, Wildlands conducted testing of soil moisture and groundwater levels adjacent to Jamul and Dulzura Creeks. Trenches were excavated to 12 to 15 feet or to the point of contact with groundwater. Depth to soil moisture and depth to groundwater were recorded. The results are shown on Figures 15a and 15b.

The trenches dug in the former agricultural fields along the northern reaches of Jamul Creek on the site had soil moisture at 6 to 10 feet and groundwater at 12 to 15 feet. This indicates an ability to support riparian/sycamore woodland, provided that plants are installed, irrigated, and maintained until sufficient root depth is achieved. Downstream, at a point where the Jamul valley floor narrows significantly, groundwater was encountered a depth of five feet. This level is adequate to support riparian vegetation with little modification or to support wetland/riparian vegetation with minor excavation. Additional locations were found further downstream along Jamul Creek with shallow groundwater.

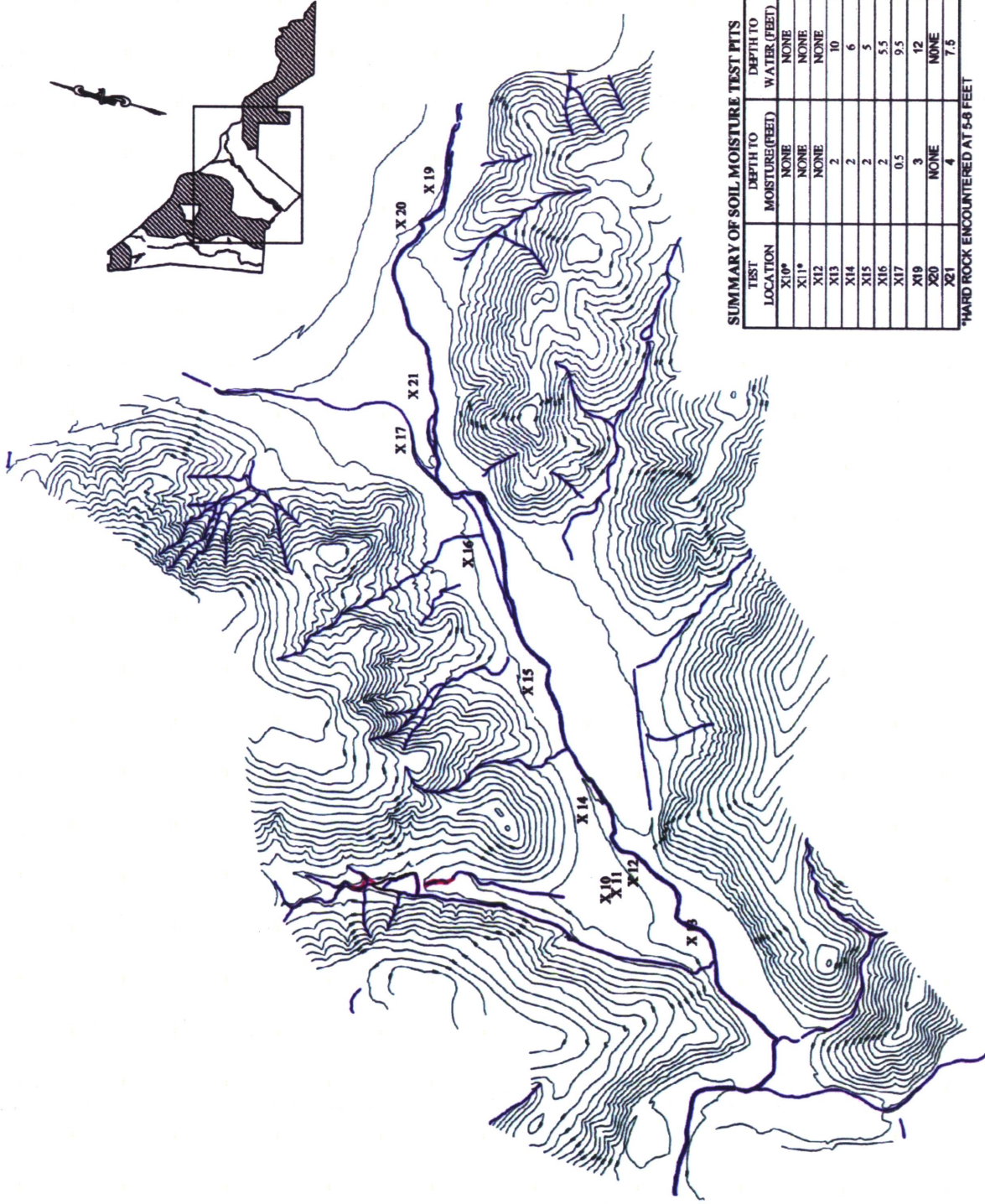
Shallow groundwater levels along Dulzura Creek were encountered on the broad terraces through the middle portion of the project area. As in the case of Jamul Creek, groundwater was found at 5 to 6 feet in several locations.

Soils

A total of twelve soil series occur within the study area (Figure 16). The Visalia, Chino, Grangeville, Greenfield, Placentia, Ramona, and Visalia series are on alluvial fans and terraces and in floodplains; the Bosanko, Cienaba, Escondido, Friant, Las Posas, and Olivenhain series are on uplands. The two most prevalent alluvial soils along Dulzura Creek are the Chino and the Visalia series. The Chino series is a fine sandy loam which typically supports annual grasses and shrubs. Some areas of this soil contain silt loam throughout and are saline. The Visalia series is a very deep sandy loam found on alluvial fans. The typical vegetation is mostly annual grasses, chamise, flat-top buckwheat, California live oak, and scrub oak.

The three most prevalent alluvial soils along Jamul Creek are the Grangeville, the Placentia, and the Visalia series. The Grangeville series is a somewhat poorly drained deep sandy loam found on alluvial fans. This soil is nearly level and the typical vegetation is annual grasses and forbs. Placentia series is a sandy loam having a sandy clay subsoil. This series is found on old alluvial fans and vegetation typically consists of a few scattered oaks, soft chess, wild oats, filaree, chamise, and vinegarweed. The Visalia series is described above.



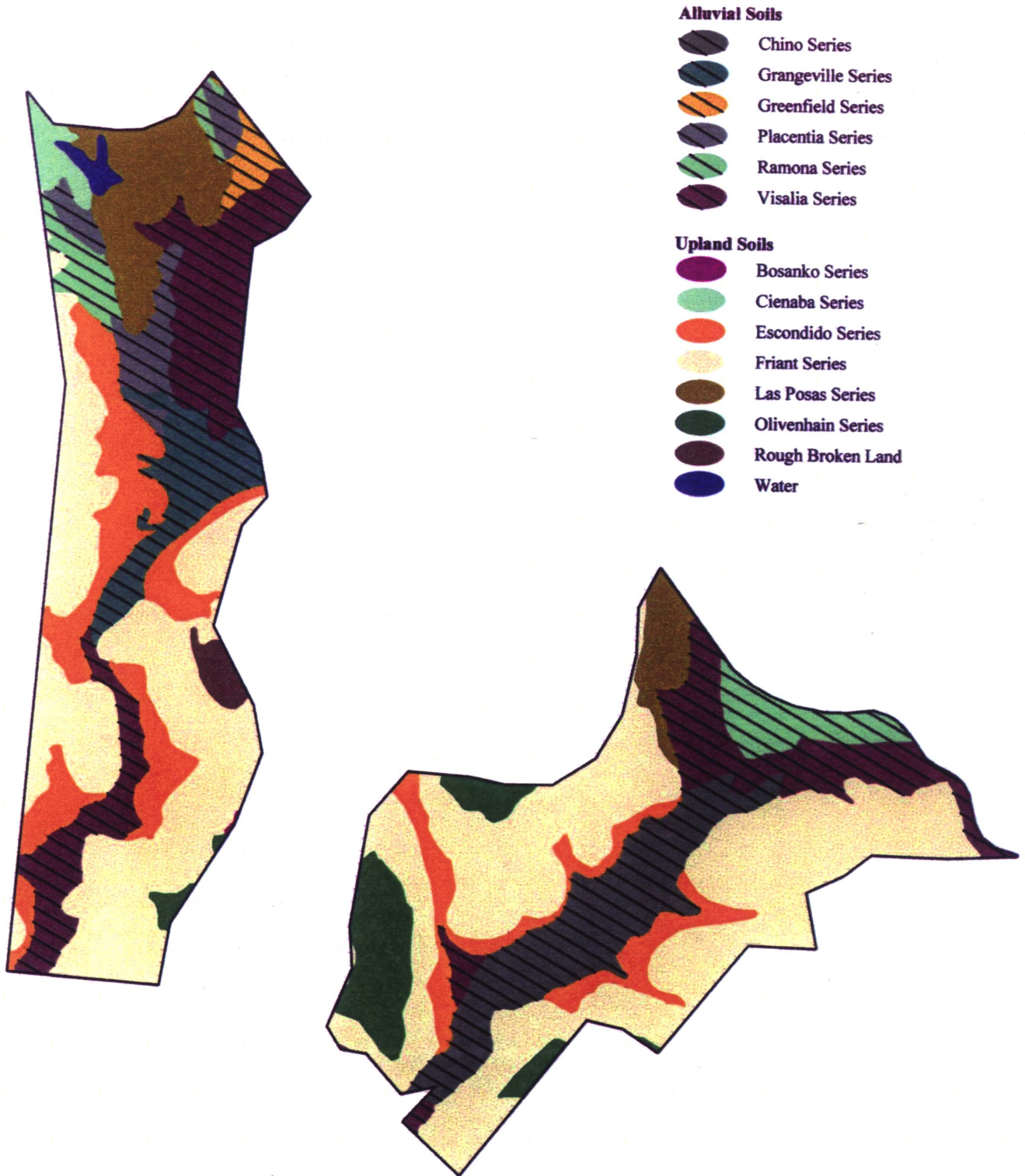


SUMMARY OF SOIL MOISTURE TEST PITS

TEST LOCATION	DEPTH TO MOISTURE (FEET)	DEPTH TO WATER (FEET)
X10*	NONE	NONE
X11*	NONE	NONE
X12	NONE	NONE
X13	2	10
X14	2	6
X15	2	5
X16	2	5.5
X17	0.5	9.5
X19	3	12
X20	NONE	NONE
X21	4	7.5

*HARD ROCK ENCOUNTERED AT 5-8 FEET





Source: SANDAG



Wildlands, Inc.

Figure 16
Soils of Rancho Jamul Mitigation Bank

Biological Resources

Regional Biological Setting

The Rancho Jamul Mitigation Bank site is within an area of San Diego County identified as a biological core area by the Multiple Species Conservation Program (MSCP); the Dulzura Creek portion of the site is also partially within a linkage area of the MSCP (Figure 17). A biological core area consists of lands having biological resources that support or contribute to the long-term survival of sensitive species; a linkage area is a key wildlife movement corridor that connects core biological areas. While not called out as a linkage, Jamul Creek has potential to help link the Otay watershed to the Sweetwater watershed via a riparian corridor that extends from the Sweetwater River south into Jamul along Highway 94.

As mentioned previously, much of the site is also mapped as having high and very high habitat value by the habitat evaluation of the MSCP; the creeks on the site are shown as degraded or as agricultural (Figure 3) and are partially within a Pre-approved Mitigation Area of the County's Subarea Plan (Figure 2).

The property was also included in the planning area for the proposed Otay-Sweetwater Unit of the San Diego National Wildlife Refuge amid lands identified as having high and very high land protection priority. The proposed mitigation bank site itself, consisting of Jamul and Dulzura Creeks, was shown as having low priority for protection, apparently due to the mapping of Dulzura as agricultural lands and most of Jamul as disturbed lands. As noted previously, however, the site has been specifically identified in the Least Bell's Vireo Recovery Plan as one of the locations contributing to the downlisting criteria for that endangered species. Occurrences of least Bell's vireo documented by the California Natural Diversity Data Base in the southern portion of the MSCP area are shown in Figure 18. Several occurrences are located along Jamul Creek between the site and Otay Reservoir, approximately four miles southwest of the project site.

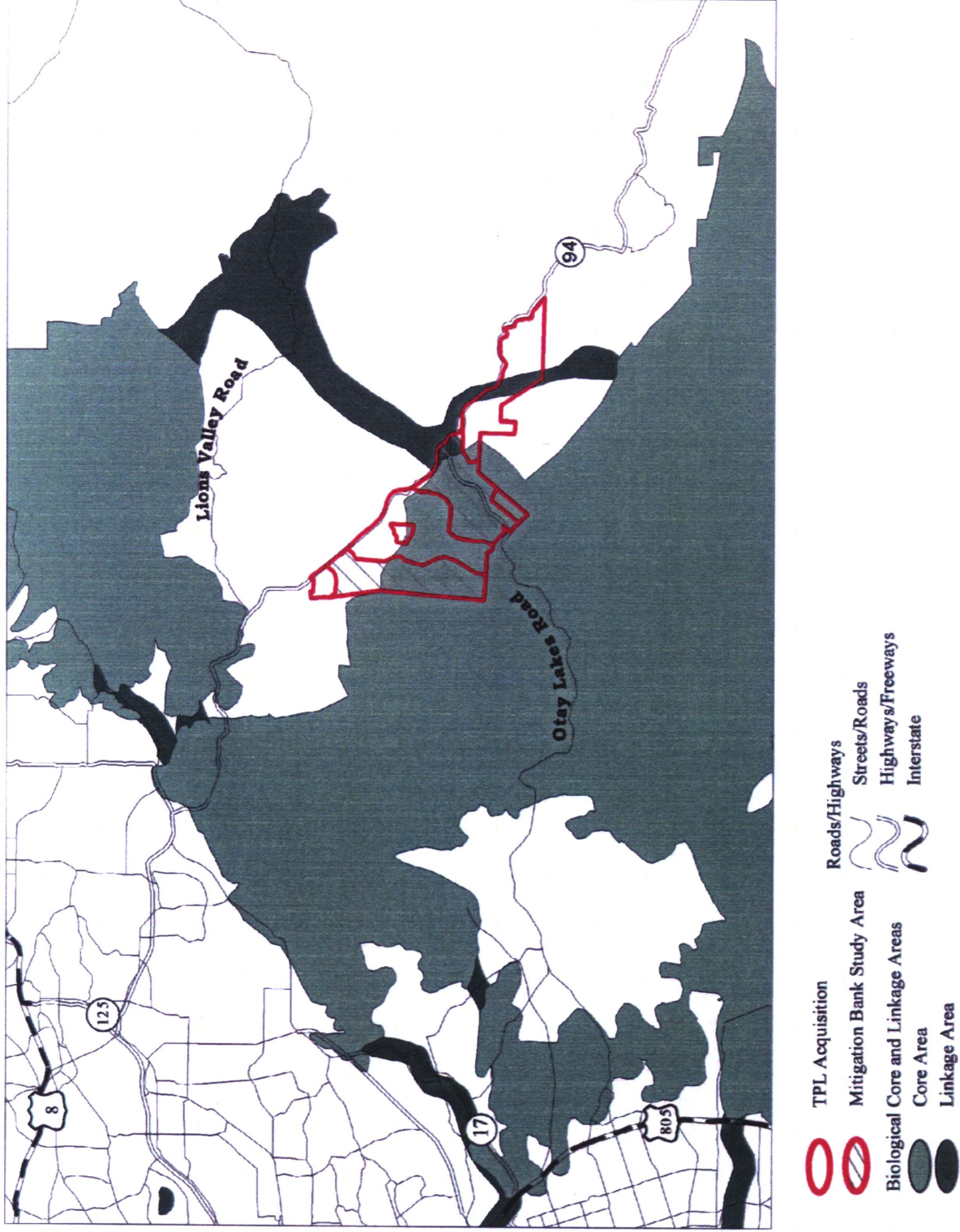
Baseline Biological Conditions on the Site

Overview. As discussed previously, the Rancho Jamul Mitigation Bank site has been mapped as degraded and agricultural in the MSCP. This is consistent with Wildlands found when it surveyed the site at the initiation of the project. For the purposes of this report, project initiation is considered to be that point in time when Wildlands began working with the Trust for Public Land to use portions of the site as a mitigation bank (February 19, 1998).

Wildlands found that the vegetation within most of the creek corridor was trampled and grazed to height of approximately 1-2 inches. The exceptions were segments where grazing had been excluded by fencing, principally along an approximately 3,400-foot reach of Jamul Creek located both upstream and downstream of the confluence of the two principal forks of the creek in the northern portion of the site. Figures 19a-e show photographs of representative locations along Jamul and

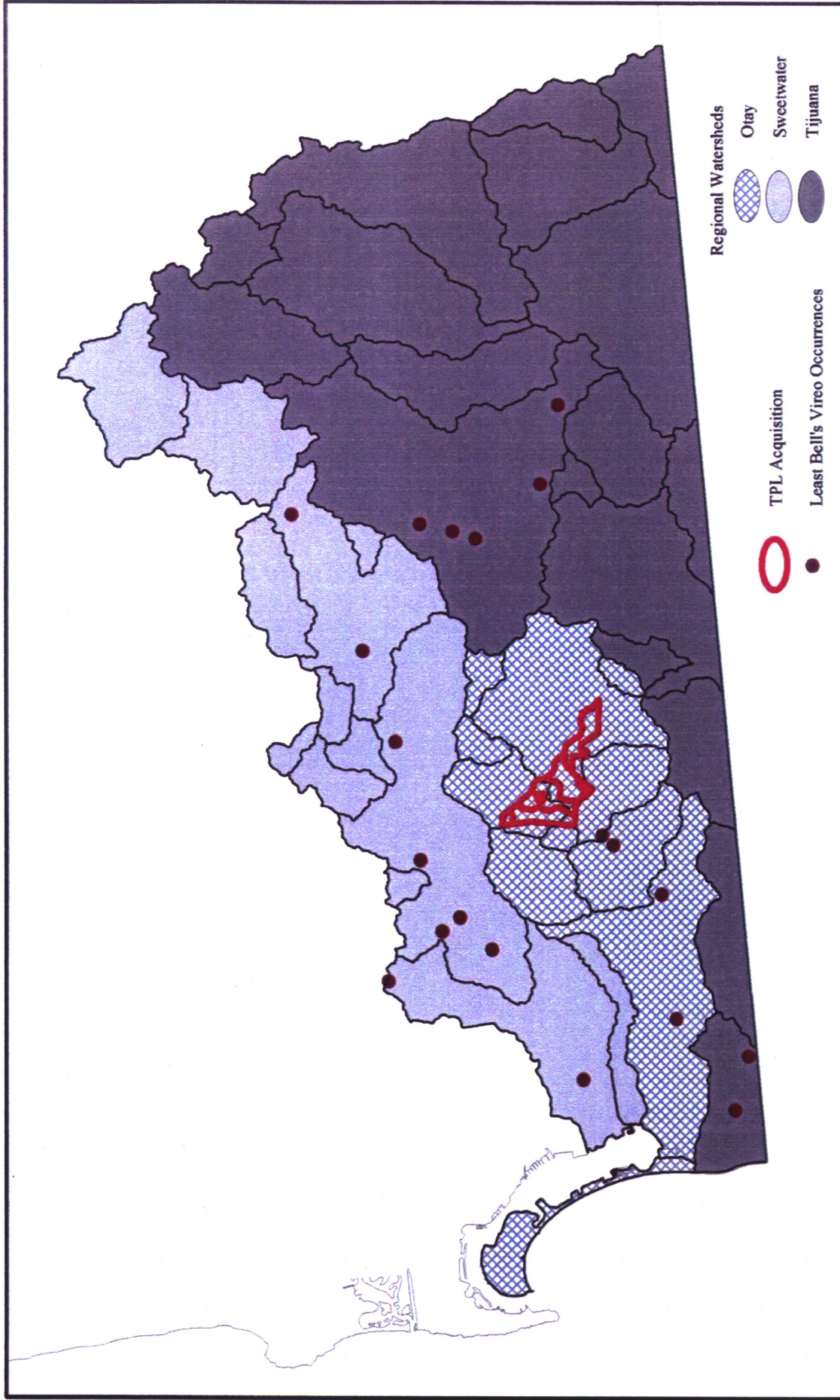
Dulzura creeks. As shown, grazing had eliminated woody riparian vegetation through most of the project area. Thus, the creek corridors were lacking in the structural habitat diversity needed to support a full suite of riparian species, including the least Bell's vireo.

The benches above the creekbeds were also denuded and degraded. The largely ruderal vegetation was closely cropped and trampled, to the point that bare soil was commonly seen. This condition was confirmed in the biological surveys conducted by Dudek & Associates during the spring and summer of 1998, even though the cattle had been absent from the site for the majority of a full growing season by that point. The findings of the Dudek study are summarized below.



Source: SANDAG





Source: SANDAG



Wildlands, Inc.

Figure 18
Least Bell's Vireo Occurrences in the Southern MSCP Area

Figure 19a
Representative Photographs of Baseline
Conditions for Jamul Creek

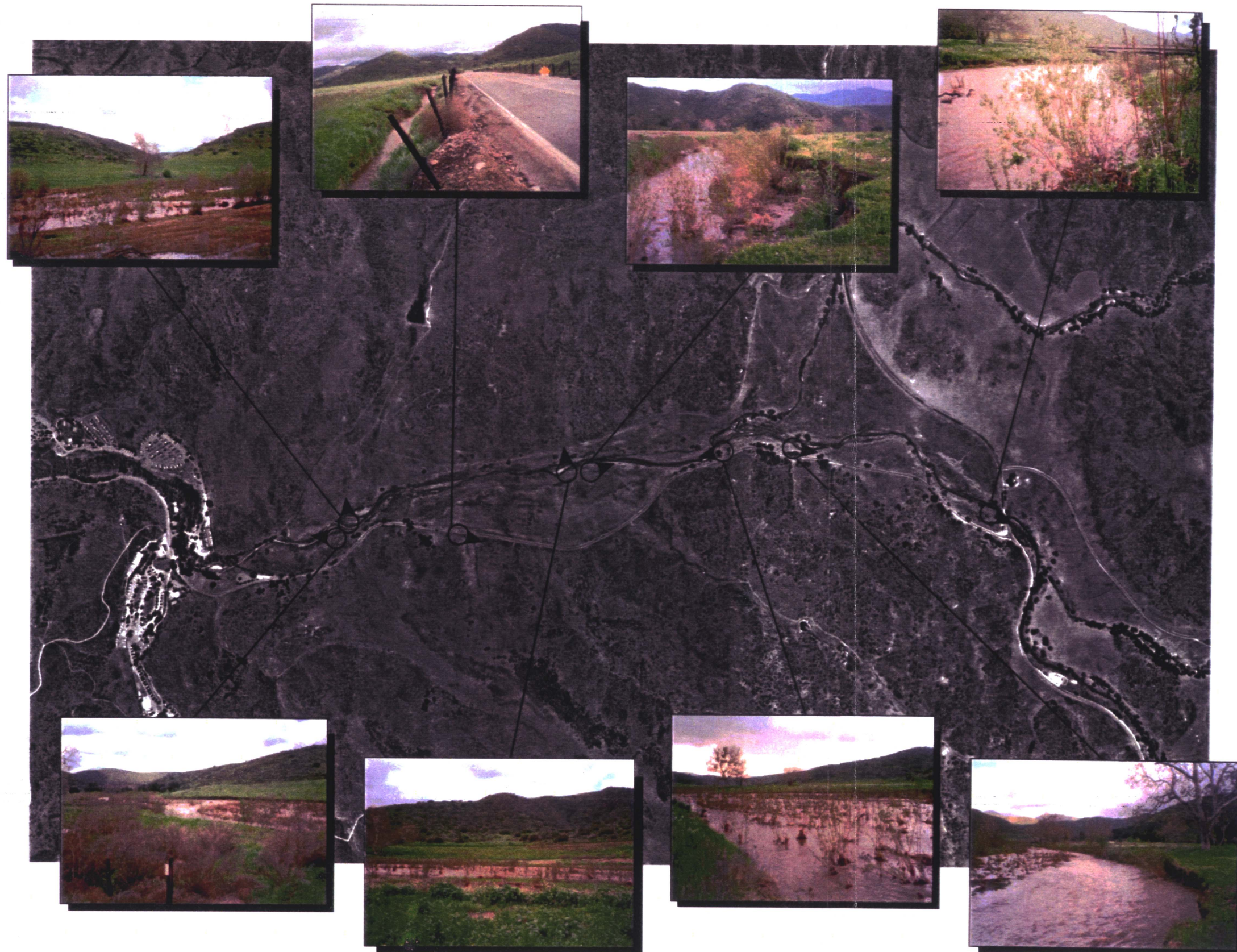


Figure 19b
Representative Photographs of Baseline
Conditions for Jamul Creek

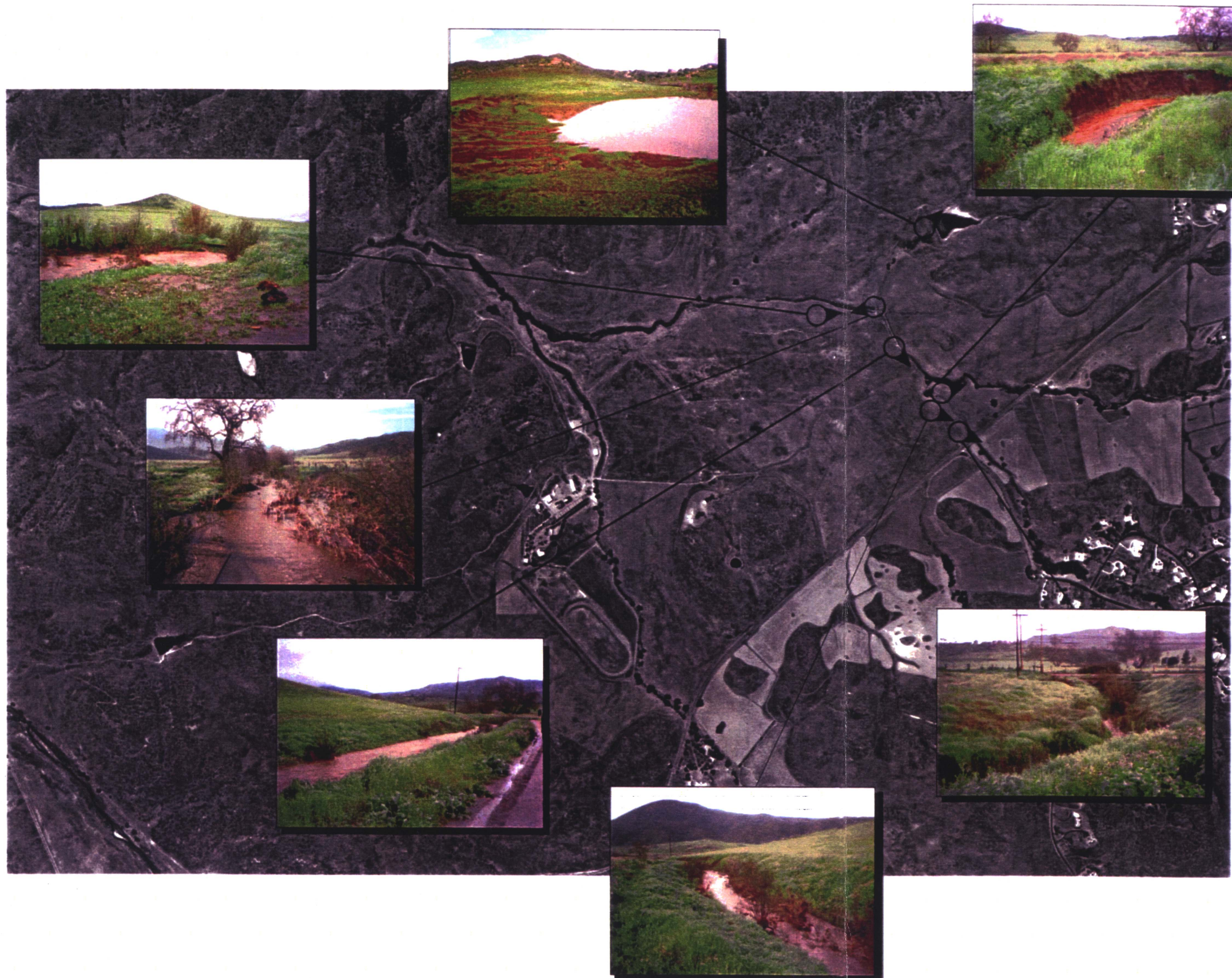


Figure 19c
Representative Photographs of Baseline
Conditions for Jamul Creek

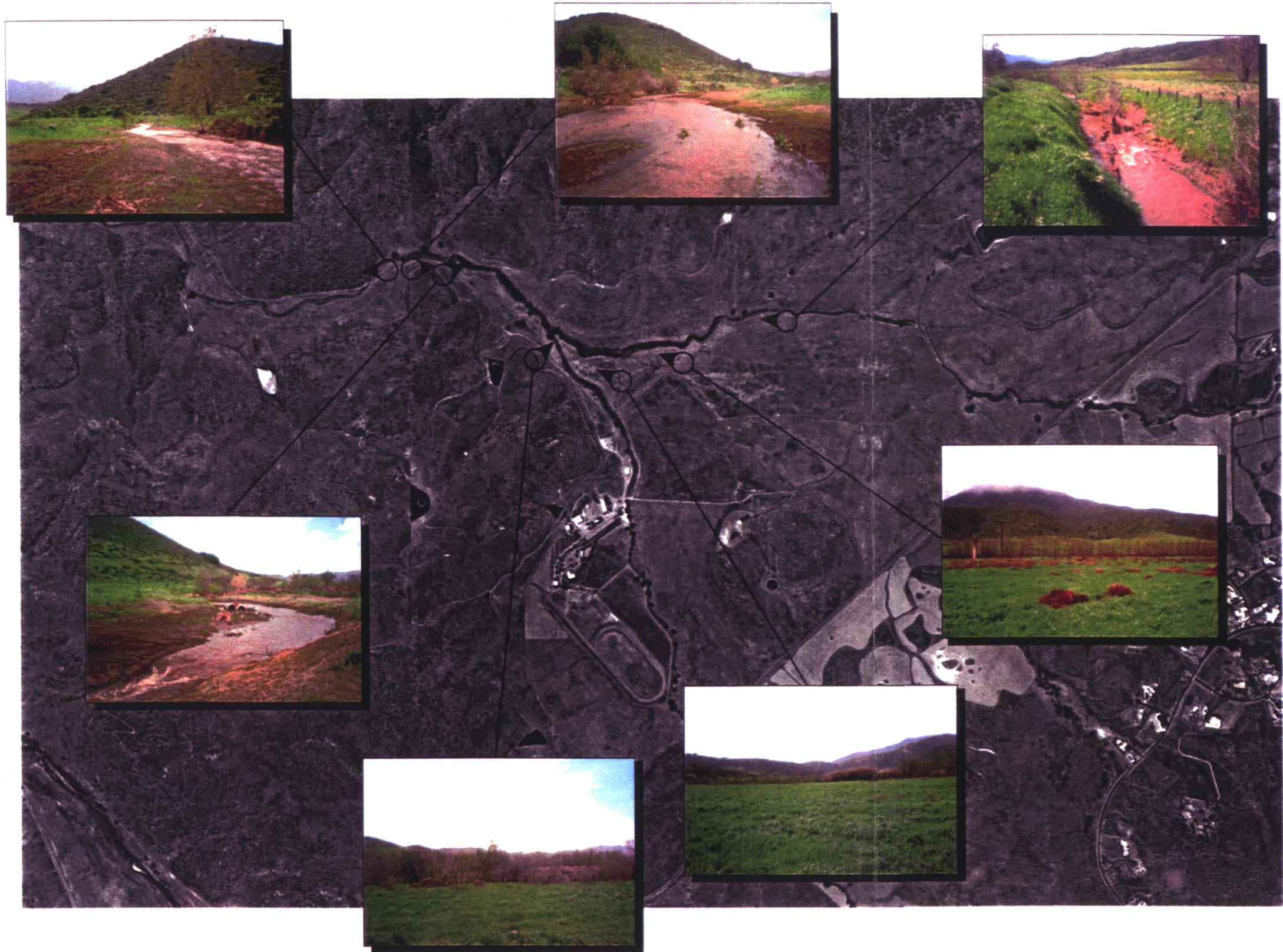


Figure 19d
Representative Photographs of Baseline
Conditions for Jamul Creek

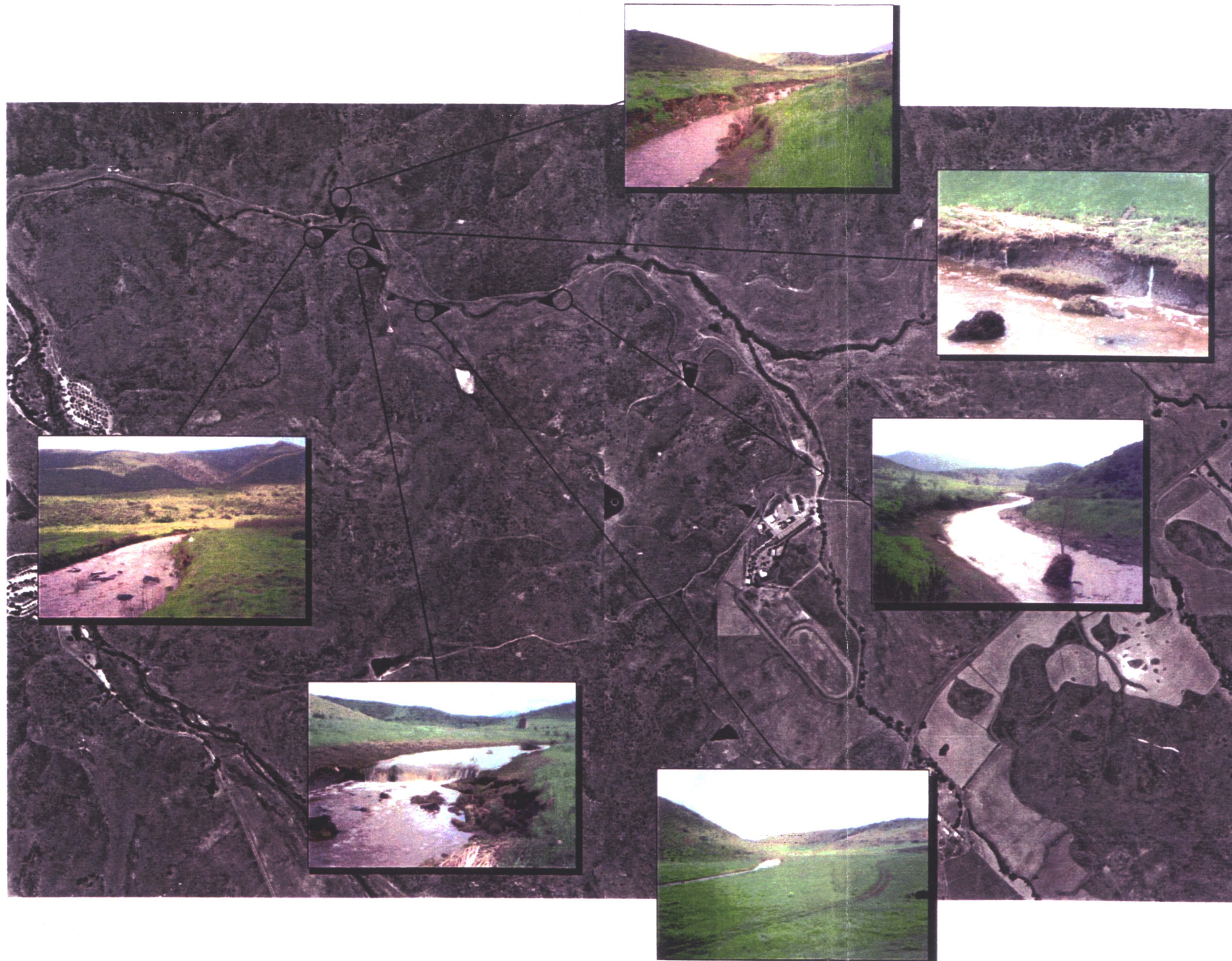
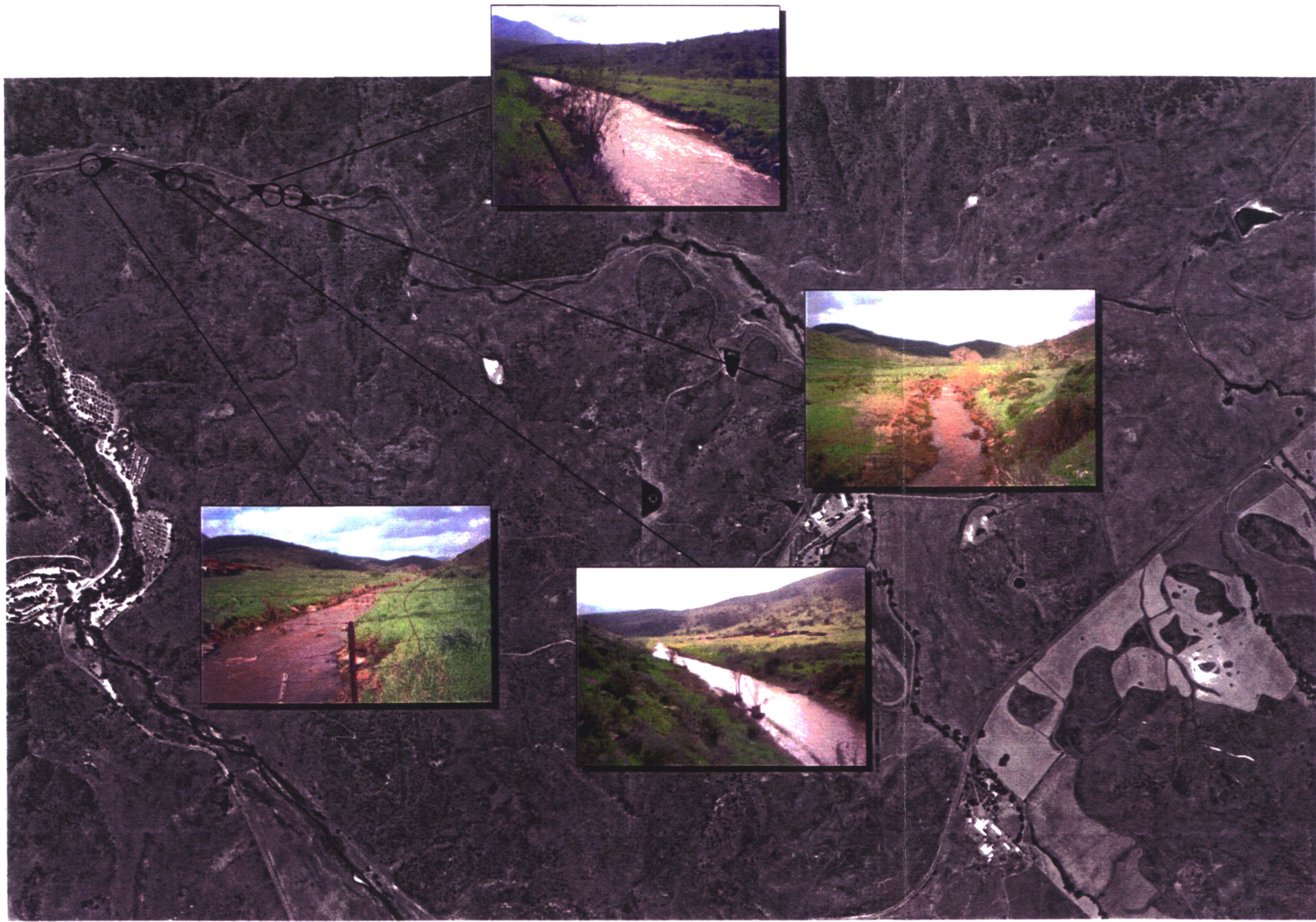


Figure 19e
Representative Photographs of Baseline
Conditions for Jamul Creek

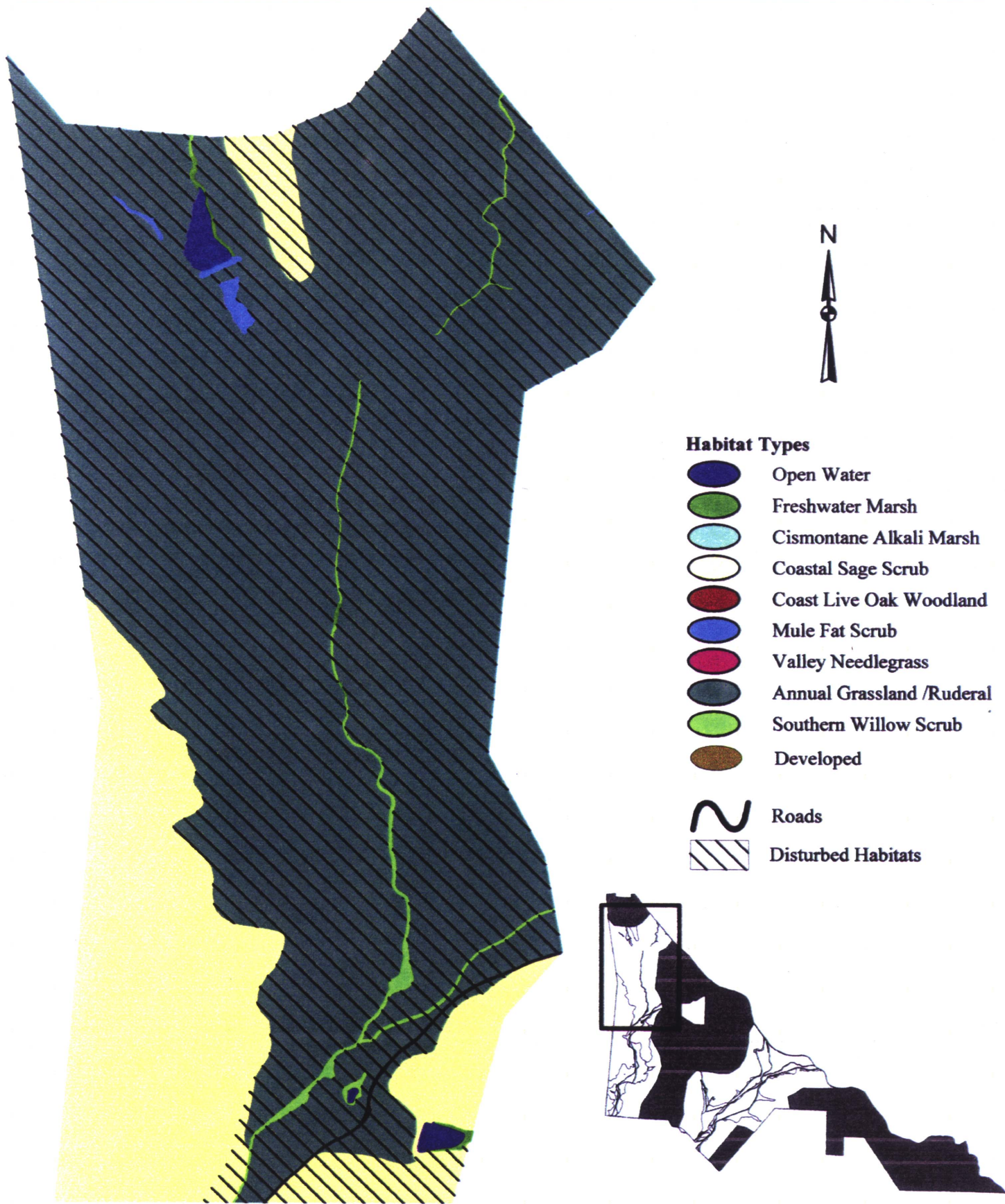


Vegetative Communities. The land surveyed by Dudek & Associates consisted of a study area defined broadly by Wildlands in order to encompass both of the creeks and their key tributaries. This study area consisted of 1,099 acres along Jamul Creek and 1,087 acres along Dulzura, for a combined total of 2,187 acres. The full Dudek & Associates report can be reviewed in Appendix C for a description of survey methodology and schedules.

The study area includes eleven native plant communities, four altered or non-native plant communities, and developed land (Figures 20a-d, Table 1). Because of the broad definition of the study area, the acreage tabulation includes a substantial proportion of coastal sage scrub vegetation, a plant community that is not indicative of the stream zones where restoration work is to be focused.

Table 1: Habitat Types at Rancho Jamul

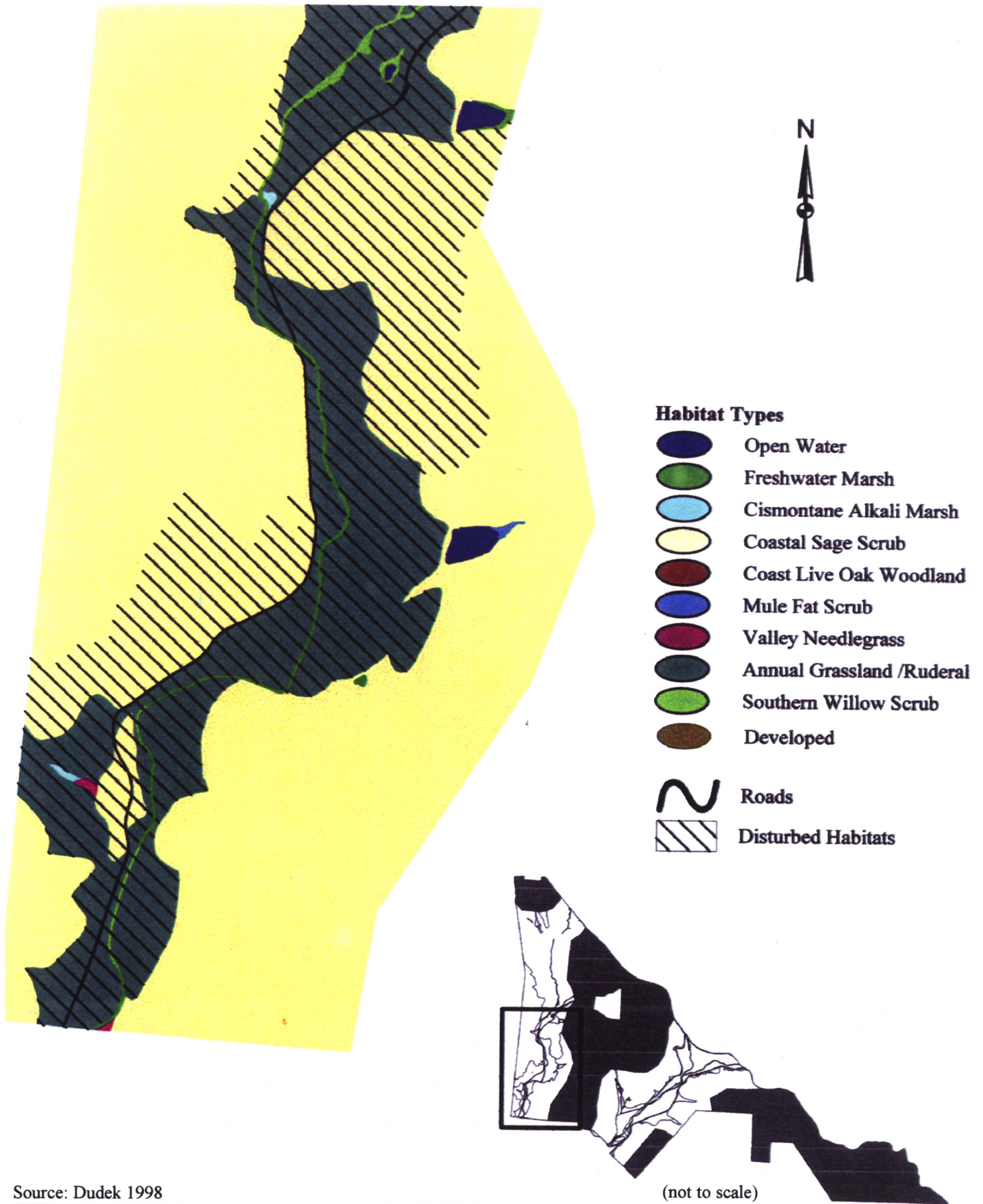
HABITAT TYPE	AMOUNT (AC)
Native Habitat Types	
Coastal Sage Scrub	1,104.7
Disturbed Coastal Sage Scrub	117.3
Coast Live Oak Woodland	8.5
Valley Needlegrass Grassland	0.3
Cismontane Alkali Marsh	1.5
Disturbed Cismontane Alkali Marsh	0.3
Freshwater Marsh	10.1
Mule fat Scrub	11.6
Disturbed Mule Fat Scrub	0.3
Southern Willow Scrub	16.0
Disturbed Southern Willow Scrub	5.0
Unvegetated Waters	
Unvegetated Waters of the United States	0.7
Open Water Ponds	6.7
Non-Native Land Covers	
Ruderal Habitat	875.4
Disturbed Habitat	8.2
Annual (Non-native) Grassland	7.9
Developed Land	13.4
TOTAL	2,187.0



Source: Dudek 1998

(not to scale)



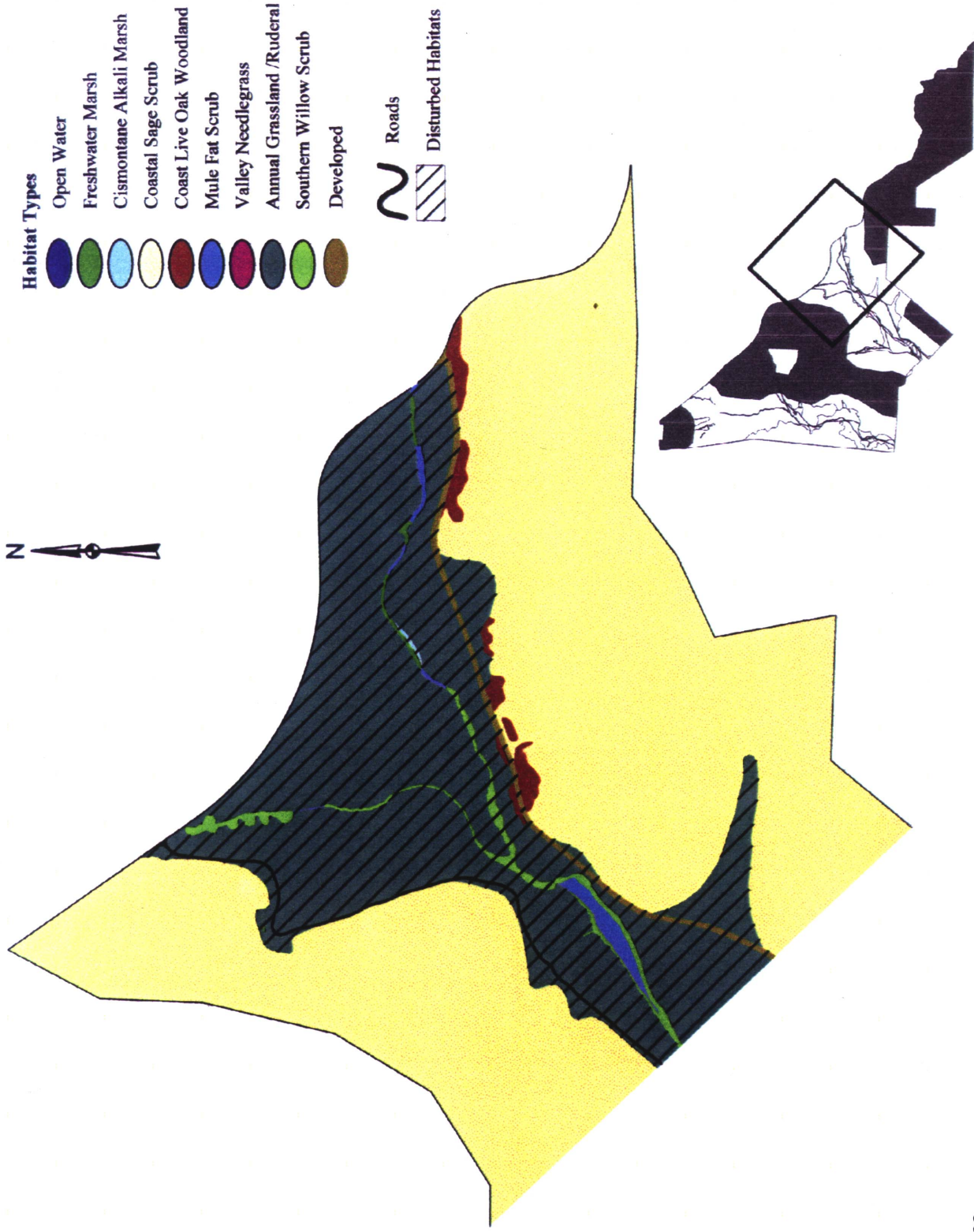


Source: Dudek 1998



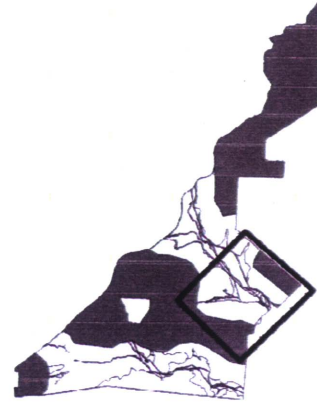
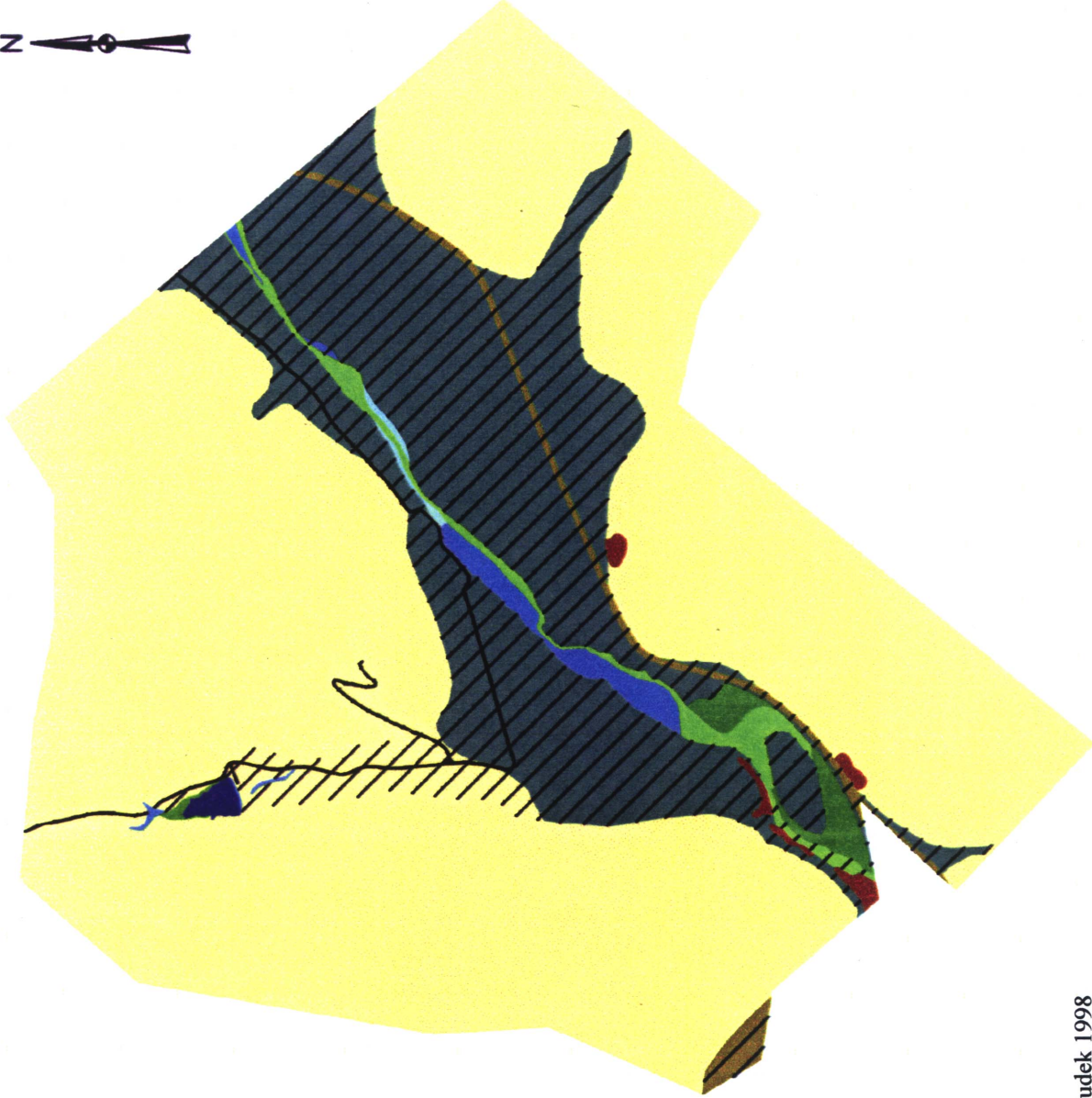
Wildlands, Inc.

Figure 20b
Distribution of Habitat Types at Rancho Jamul



Source: Dudek 1998





Source: Dudek 1998

(not to scale)



Wildlands, Inc.

Figure 20d
Distribution of Habitat Types at Rancho Jamul

The core project area along each creek is most simply described as a narrow band of stream habitat bordered by broad plains of ruderal vegetation. The in-stream habitat along Jamul Creek alternates between southern willow scrub, freshwater marsh, disturbed southern willow scrub, disturbed freshwater marsh, and ruderal cover. The Dulzura Creek in-stream environment has these habitats, plus mule fat scrub; along Dulzura Creek, the habitats are more frequently intermixed rather than exclusively alternating as seen along Jamul Creek.

An important qualification to the mapping by Dudek & Associates is that its main focus was on wetland delineation and vegetation mapping rather than a detailed assessment of plant community stage and habitat quality. We are currently working with an U.S. Geological Survey Research Ecologist, Barbara Kus, to measure and record plant community composition, structure, and other characteristics that pertain more specifically to the goals of this project.

The ruderal vegetation is generally located on the upland terraces, or plains, adjacent to the creeks; these terraces are broad, extending beyond the boundaries of the biological study area in some cases. The ruderal habitat was defined by Dudek & Associates as follows (page 12):

Ruderal habitat is similar to annual (non-native) grassland in that these areas are typically the result of frequent mechanical disturbance, but differ in that non-native species predominate over natives and native habitat recovery is unlikely due to the predominance of non-native species. Generally, ruderal habitat is characterized by forbs such as black mustard, star-thistle, filaree (*Erodium* sp.), sweet fennel (*Foeniculum vulgare*), etc., rather than grasses.

The ruderal habitat zones closest to the creeks are the areas that are the focus of restoration, as described in the subsequent chapter.

The coastal sage scrub habitat is located on the slopes that rise above the ruderal plains. Approximately one tenth of this habitat has been partially denuded by grazing and other ranch activities.

One remnant plant community of note within the study area is the valley needlegrass grassland. This community, dominated with perennial bunchgrasses, is typically interspersed with coastal sage scrub on some clay soils, often on more mesic exposures and at the bases of slopes. Two occurrences are mapped within the study area, one adjacent to Jamul Creek at the southerly limit of the Jamul Creek portion of the area, and the other approximately 1700 feet north of the first occurrence in association with a tributary to Jamul Creek.

The botanical diversity of the site is characterized by Dudek & Associates as moderate, with a total of 76 species (53 or 70% native and 23 or 30% non-native).

Sensitive Plant Species. Five plant species considered sensitive were found on the site (Table 2, Figure 21). None of these species is a formally listed or candidate species under the federal or State Endangered Species Acts and none is considered rare for the purposes of the California Environmental Quality Act. All of these species, with the exception of ashy spike-moss (*Selaginella cinerascens*), is found in the Jamul Creek portion of the study area; ashy spike-moss is common throughout much of the coastal sage scrub onsite.

Table 2: Sensitive Plants at Rancho Jamul

SPECIES	USFWS	CDFG	CNPS	OCCURRENCE ONSITE
<i>Viguiera laciniata</i> San Diego County viguiera	None	None	List 2, 1-2-1	Observed scattered in coastal sage scrub within the Jamul Creek corridor.
<i>Juncus acutus</i> var. <i>loepoldii</i> Southwestern spiny rush	None	None	List 4, 1-1-3	Observed primarily within intermittent or perennial stream channels.
<i>Iva haycsiana</i> San Diego marsh-elder	None	None	List 2, 2-2-1	Observed within several cismontane alkali marsh habitats within the Jamul Creek corridor.
<i>Romneya coulteri</i> Coulter's matilija poppy	None	None	List 4, 1-1-3	Observed in one patch of coastal sage scrub within the Jamul Creek Corridor.
<i>Selaginella cinerascens</i> Ashy spike-moss	None	None	List 4, 1-2-1	Common throughout much of the coastal sage onsite.

Source: Dudek & Associates, 1998

The California Native Plant Society's (CNPS) Lists

List 1A: Plants presumed Extinct in California

List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

List 2: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

List 3: Plants about which we need more information - A Review List

List 4: Plants of limited distribution - A Watch List

R-E-D Code

R (Rarity)

1. Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.

2. Distributed in a limited number of occurrences, occasionally more if each occurrence is small

3. Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported.

E (Endangerment)

1. Not endangered

2. Endangered in a portion of its range

3. Endangered throughout its range

D (Distribution)

1. More or less widespread outside California

2. Rare outside California

3. Endemic to California



Source: Dudek 1998



Wildlands, Inc.

(not to scale)

Figure 21
Sensitive Plant Species Occurrences

Sensitive Animal Species. One State and federally listed endangered animal species, the least Bell's vireo (*Vireo belli pusillus*), and one federally listed threatened animal species, coastal California gnatcatcher (*polioptila californica californica*), were observed within the study area (Table 3). In addition, three raptor species of special concern and three other sensitive bird species were observed within the study area.

Table 3: Sensitive Animals at Rancho Jamul

SPECIES	USFWS	CDFG	OCCURRENCE ONSITE
<i>Poliopitla californica</i> California gnatcatcher	Threatened	Species of Special Concern	Four pairs were observed within the Jamul Creek corridor.
<i>Vireo belli pusillus</i> Least Bell's vireo	Endangered	Endangered	Two males were heard along Dulzura Creek; three males were heard along Jamul Creek.
<i>Icteria virens</i> Yellow-breasted chat	None	Species of Special Concern	Two were heard along Dulzura Creek; six individuals were heard along Jamul Creek.
<i>Dendroica petechia</i> Yellow warbler	None	Species of Special Concern	One was heard along Dulzura Creek; Five individuals were heard along Jamul Creek.
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Former Category 2 candidate	Species of Special Concern	One observed within Jamul Creek corridor.
<i>Elanus caeruleus</i> White-tailed kite	None	Species of Special Concern, Fully Protected	Observed during the surveys; believed to use the project site for foraging purposes.
<i>Accipiter cooperi</i> Cooper's hawk	None	Species of Special Concern	Observed foraging over the project site during surveys; no roosts or nests observed.
<i>Circus cyaneus</i> Northern harrier	None	Species of Special Concern	Observed flying over the study area; believed to use the project site for foraging purposes; may nest on the site.

Source: Dudek & Associates, 1998

The three sensitive species that nest in riparian habitat, the least Bell's vireo, the yellow warbler (*Dendroica petechia*), and the yellow-breasted chat (*Icteria virens*), were found along the segments of Jamul Creek that had been fenced from cattle and in the remnant riparian habitats at the southwesternmost corner of the Dulzura Creek portion of the study area (Figures 22a-c).

Two individual male least Bell's vireo were heard singing on several occasions along Dulzura Creek and three males were heard singing along Jamul Creek. Based on the behavior of these individual birds, the field biologists believed that all were paired.

No sensitive reptilian, amphibian, mammalian, or invertebrate species were observed on the site. However, the site contains potential habitat for the sensitive species listed in Table 4.

Table 4: Potential Sensitive Animals at Rancho Jamul

REPTILES		
Species	Federal	State
<i>Thamnophis hammondi</i> Two-striped gartersnake	Federal Special Concern	DFG: California Special concern species DFG: Protected
<i>Phrynosoma coronatum</i> San Diego horned lizard	Federal Special Concern	DFG: California Special concern species DFG: Protected
<i>Cnemidophorus tigris</i> Coastal western whiptail lizard	Federal Special Concern	DFG: California Special concern species DFG: Protected
<i>Cnemidophorus hyperythrus</i> Beldings orange-throated whiptail lizard	Federal Special Concern (full species)	DFG: California Special concern species DFG: Protected (full protection)
AMPHIBIANS		
Species	Federal	State
<i>Scaphiopus hammondi</i> Western spadefoot toad	Federal Special Concern	DFG: California Special concern species DFG: Protected
INVERTEBRATES		
Species	Federal	State
<i>Euphydryas editha quino</i> Quino checkerspot butterfly	Federally listed as Endangered	None
<i>Lycaena hermes</i> Hermes copper	Federal Special Concern	None

Source: Dudek & Associates, 1998

Wildlands is planning to work with biologists from the U.S. Geological Survey to identify areas of potential habitat for amphibian species of special interest.



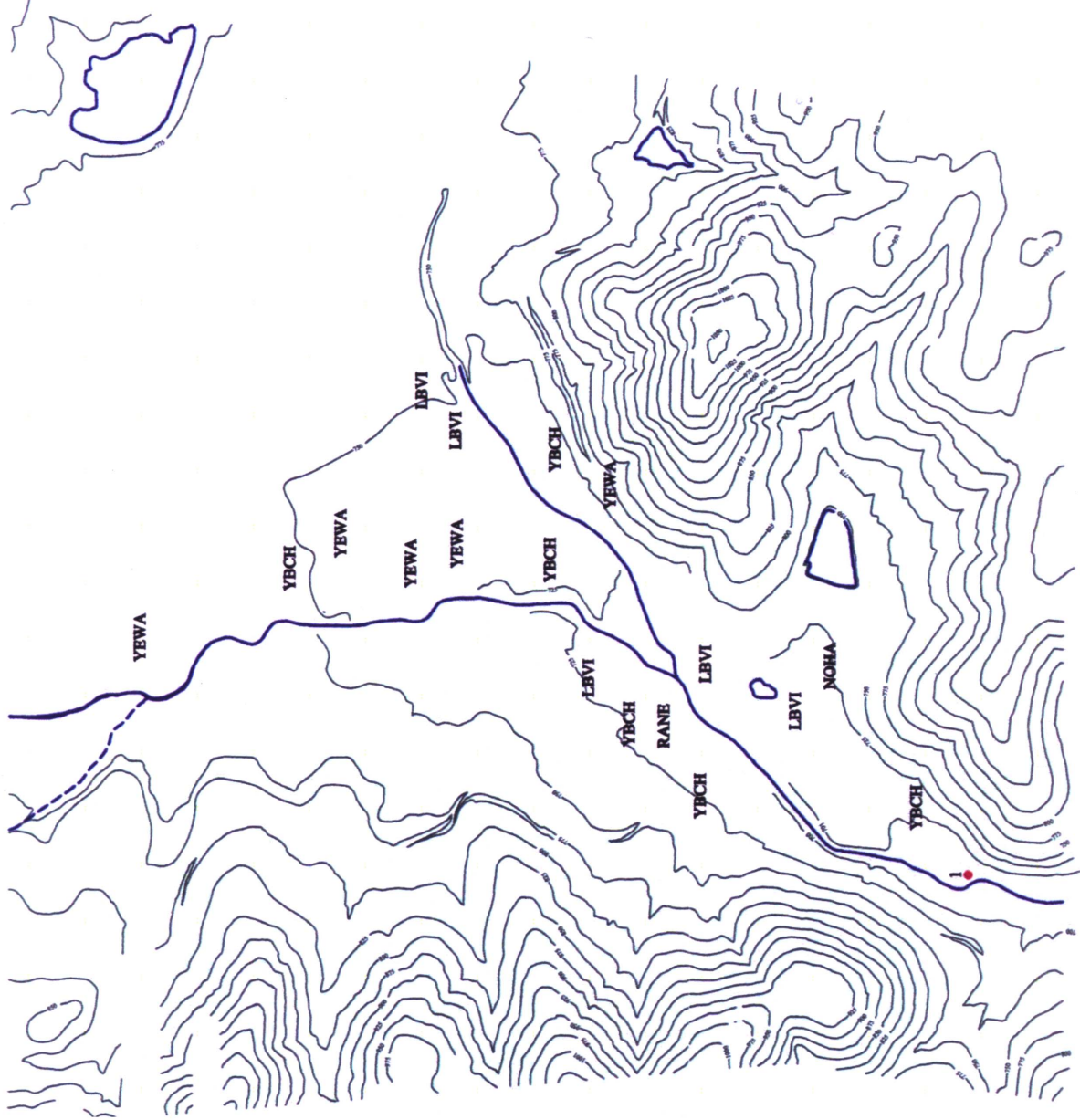
Jamul Creek Biological Resources Map

Sensitive Animal Species:

- LBVI** Least Bell's Vireo
- NOHA** Northern Harrier
- YBCH** Yellow-Breasted Chat
- CAGN** California Gnatcatcher
- RCSP** Rufous-crowned Sparrow
- RANE** Raptor Nest
- YEWA** Yellow Warbler

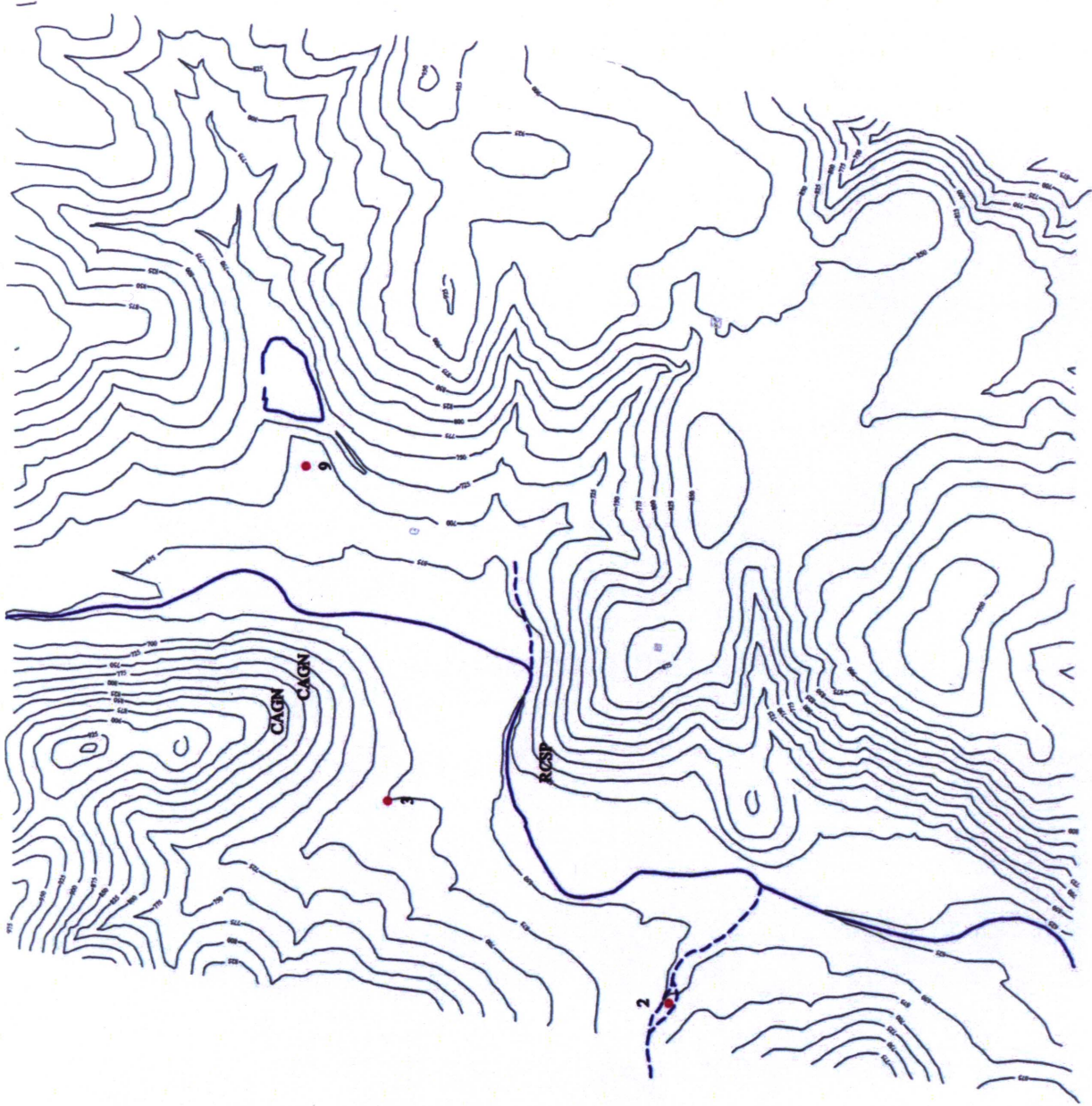
• 1 **Data Station**

(not to scale)



Source: Dudek 1998





Jamul Creek Biological Resources Map

Sensitive Animal Species:

- LBVI Least Bell's Vireo
- NOHA Northern Harrier
- YBCH Yellow-Breasted Chat
- CAGN California Gnatcatcher
- RCSP Rufous-crowned Sparrow
- RANE Raptor Nest
- YEWA Yellow Warbler

• 1 Data Station (not to scale)



Dulzura Creek Biological Resources Map

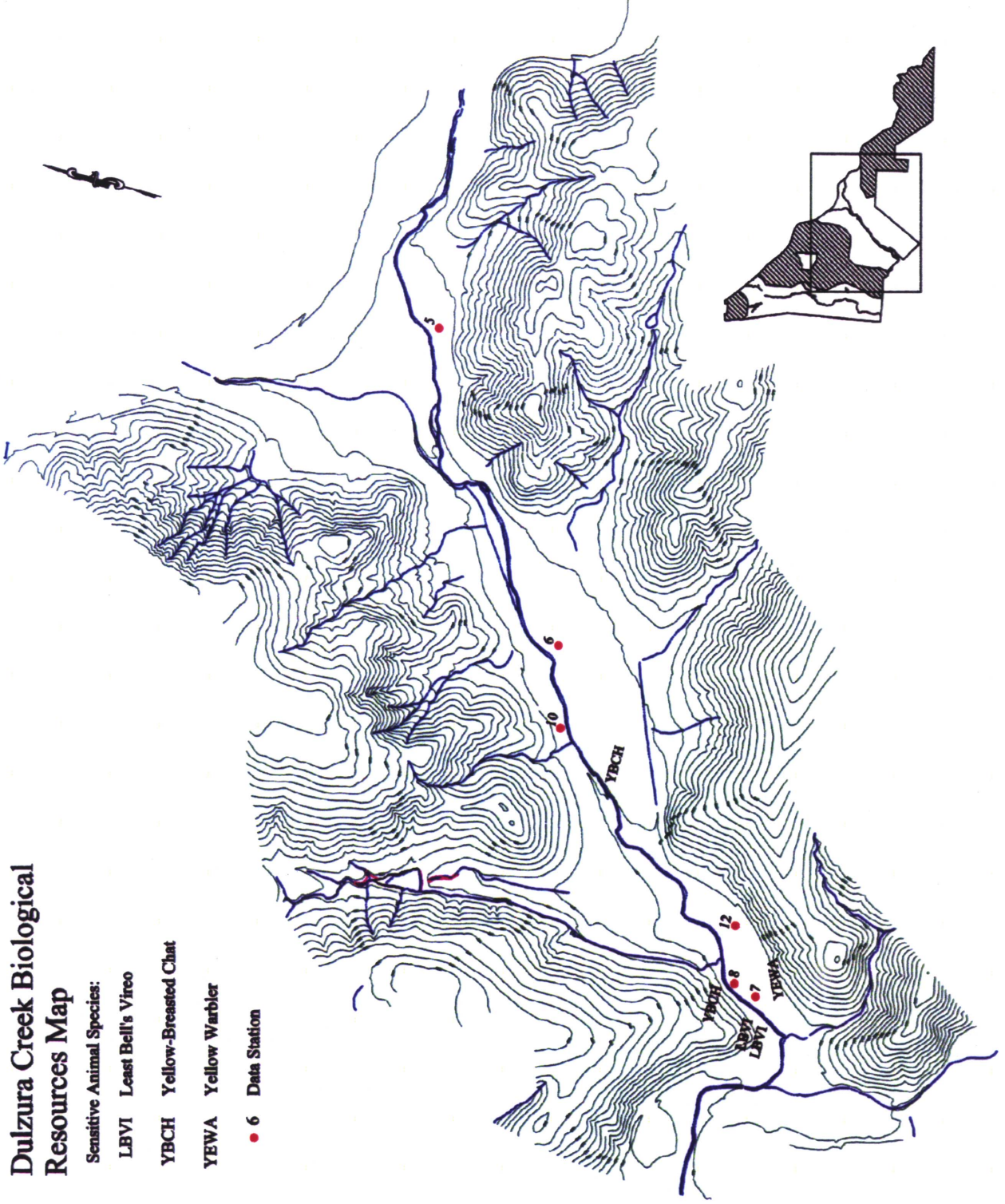
Sensitive Animal Species:

LBVI Least Bell's Vireo

YBCH Yellow-Breasted Chat

YEWA Yellow Warbler

• 6 Data Station



Source: Dudek



(not to scale)

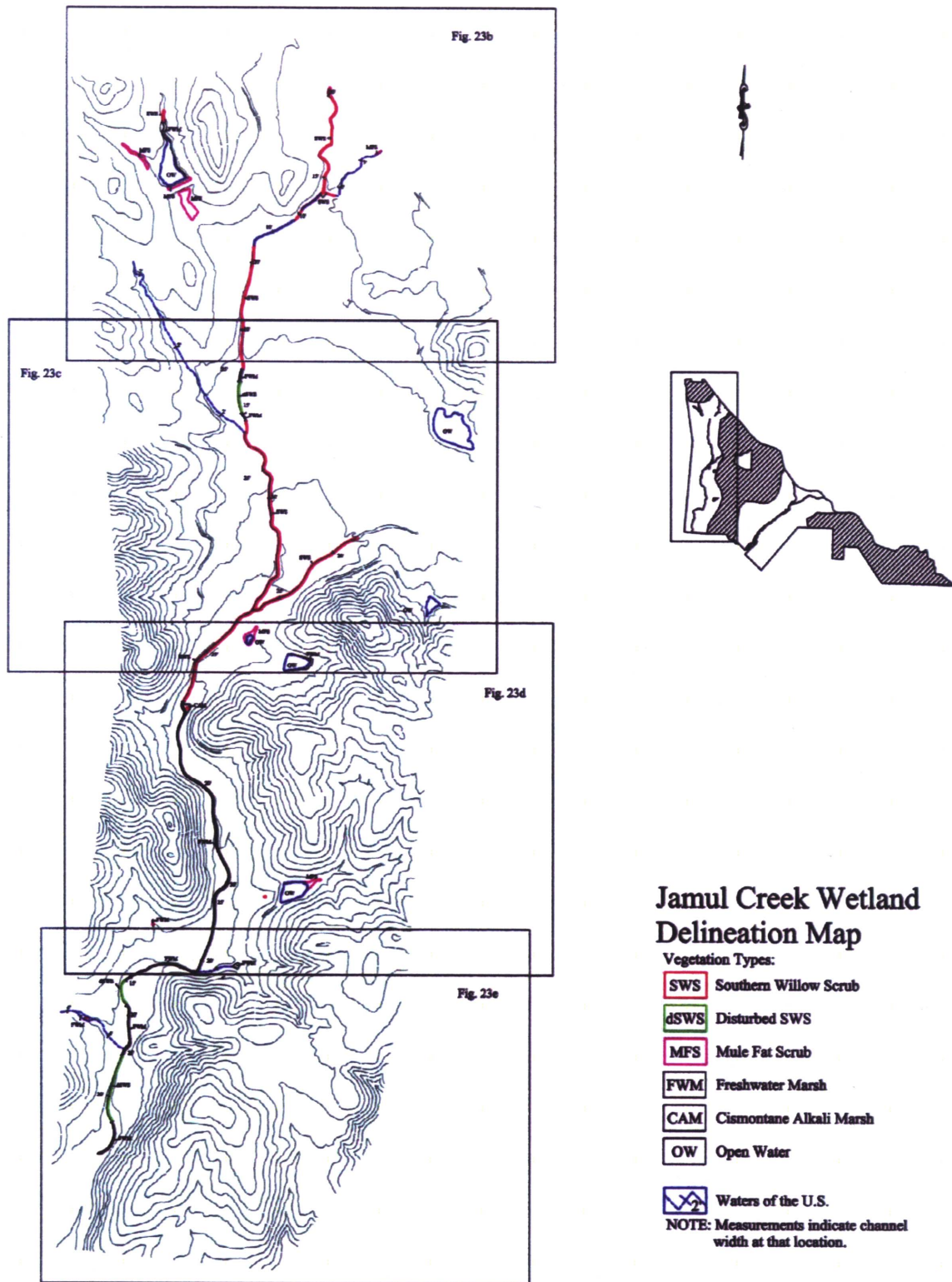
Existing Waters of the United States and Wetlands. A wetland delineation of the study area was conducted in April 1998 by Dudek & Associates (Appendix C) and verified on December 18, 1998 by the U.S. Natural Resources Conservation Service (Appendix D). The extent and distribution of waters and wetlands on the site is depicted in Figure 23. The total acreage of waters and wetlands under jurisdiction of the Corps is 51.80 acres.

Through most of the study area, the limit of waters and wetlands of the site is distinctly defined by a vertical or near vertical embankment. This is particularly the case along Jamul Creek, where the creek is confined to a 10 to 30 foot channel. Most of the 30 foot width channel coincides with the reach that had been fenced off from grazing, allowing more mature habitat to develop.

The upstream reaches of Dulzura Creek resemble Jamul Creek in being narrow and confined. Just below the confluence of Dulzura Creek with a major tributary, the channel alternatively broadens and narrows, varying in width from approximately 25 to 200 feet. A large freshwater marsh is present at the downstream end of the Dulzura Creek portion of the study area. This marsh, with an expanse of southern willow scrub, surrounds a large island of annual grassland that does not delineate as wetland.

The in-stream habitats described above fall within the delineated area. These habitats include the following types (inclusive of those areas identified as being disturbed):

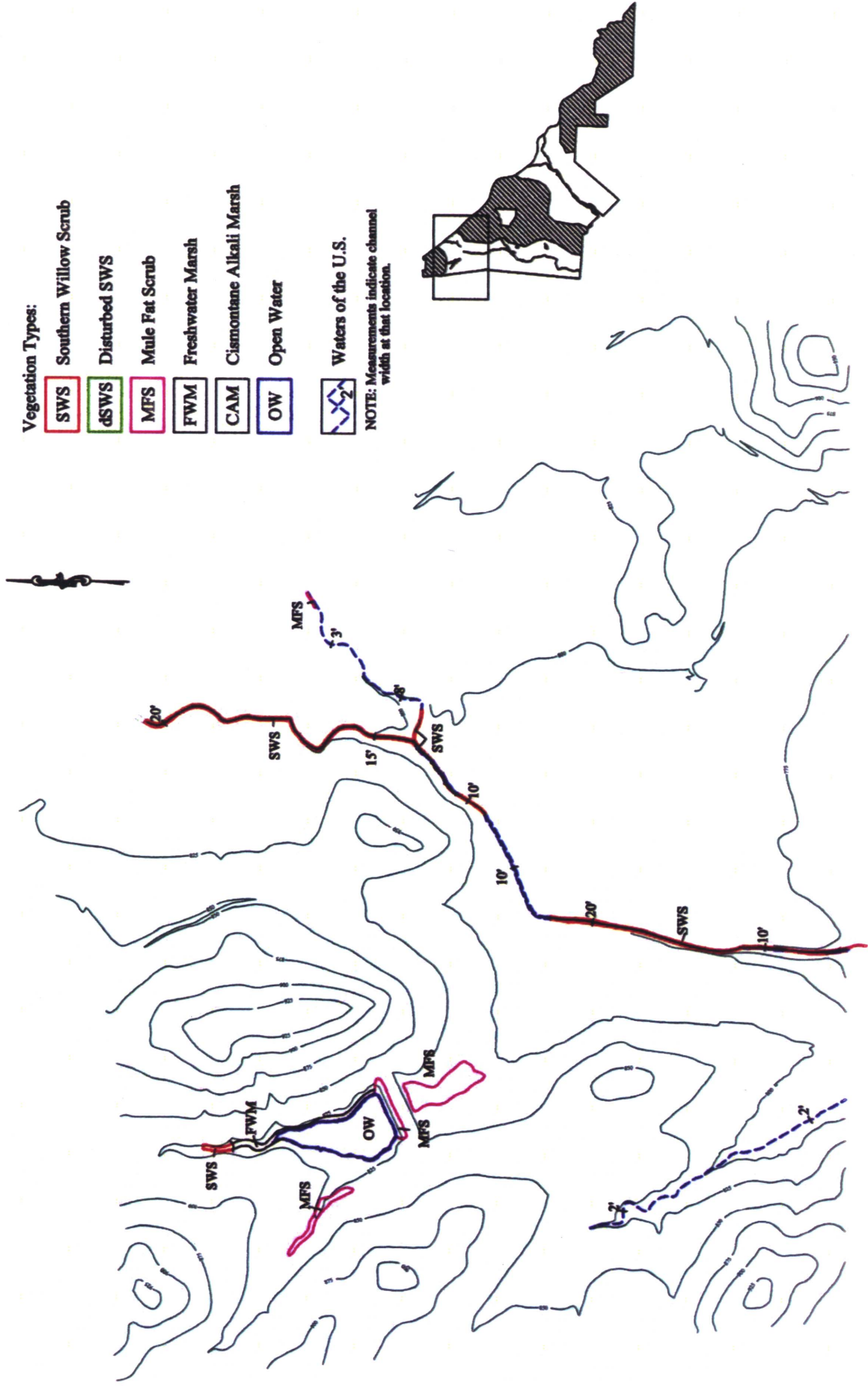
- Freshwater Marsh
- Cismontane Alkali Marsh
- Southern Willow Scrub
- Mule fat Scrub
- Open Water



Source: Dudek 1998



Jamul Creek Wetland Delineation Map



Source: Dudek 1998



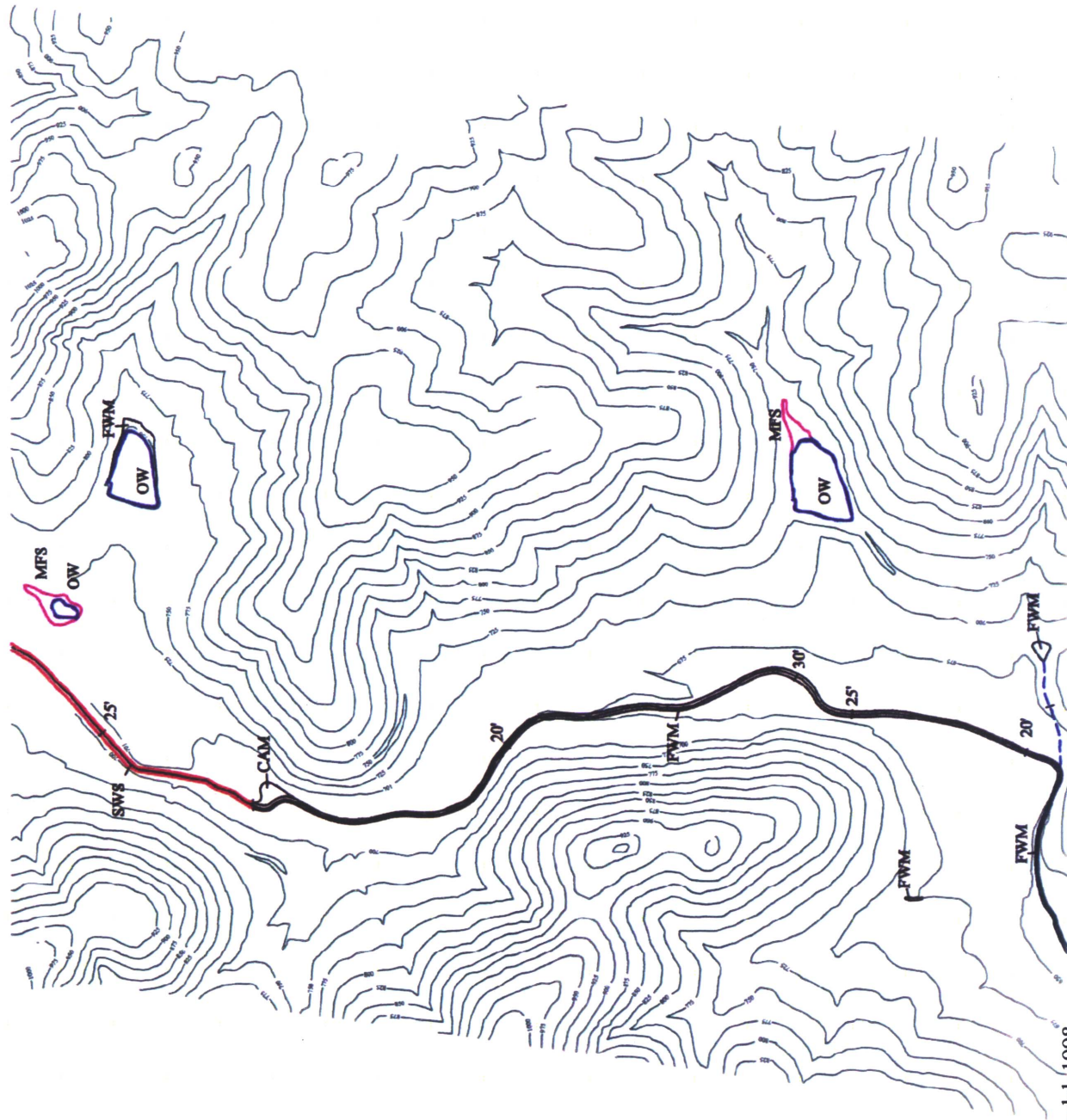
Wildlands, Inc.

Figure 23b
Wetland Delineation Map



Source: Dudek 1998





Jamul Creek Wetland Delineation Map

Vegetation Types:

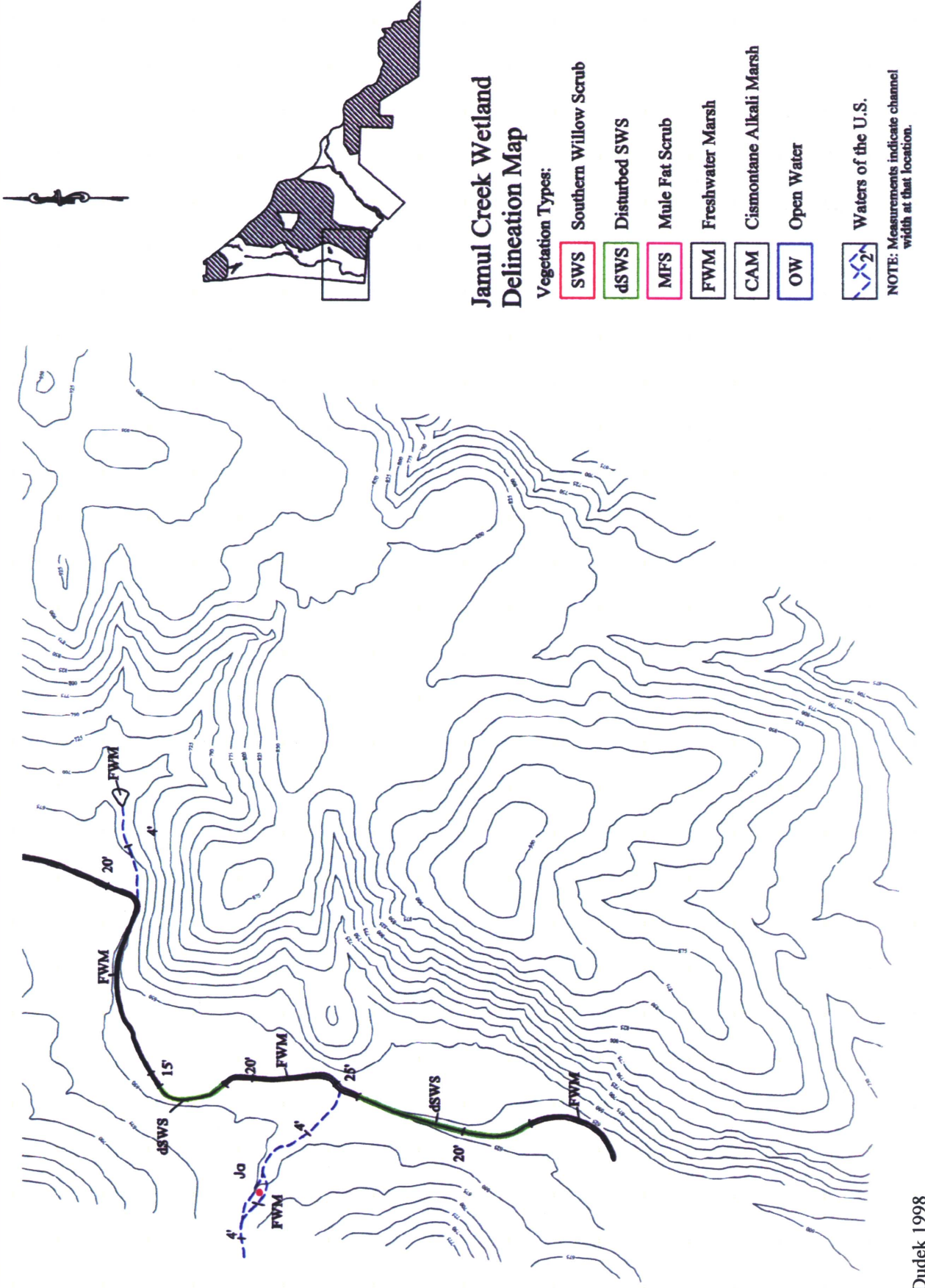
- SWS Southern Willow Scrub
- dSWS Disturbed SWS
- MFS Mule Fat Scrub
- FWM Freshwater Marsh
- CAM Cismontane Alkali Marsh
- OW Open Water



Waters of the U.S.
NOTE: Measurements indicate channel width at that location.

Source: Dudek 1998

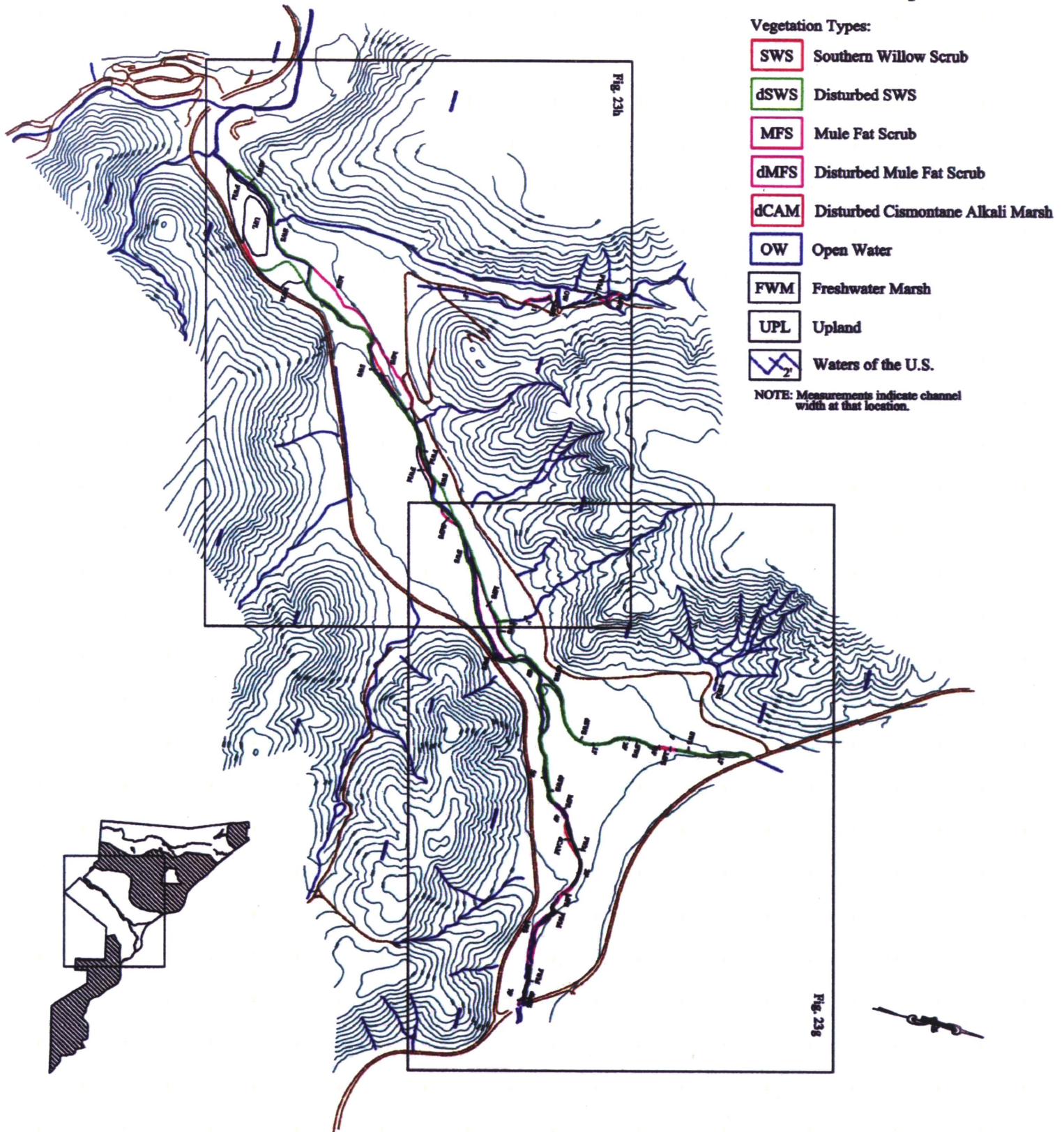




Source: Dudek 1998



Dulzura Creek Wetland Delineation Map



Source: Dudek 1998

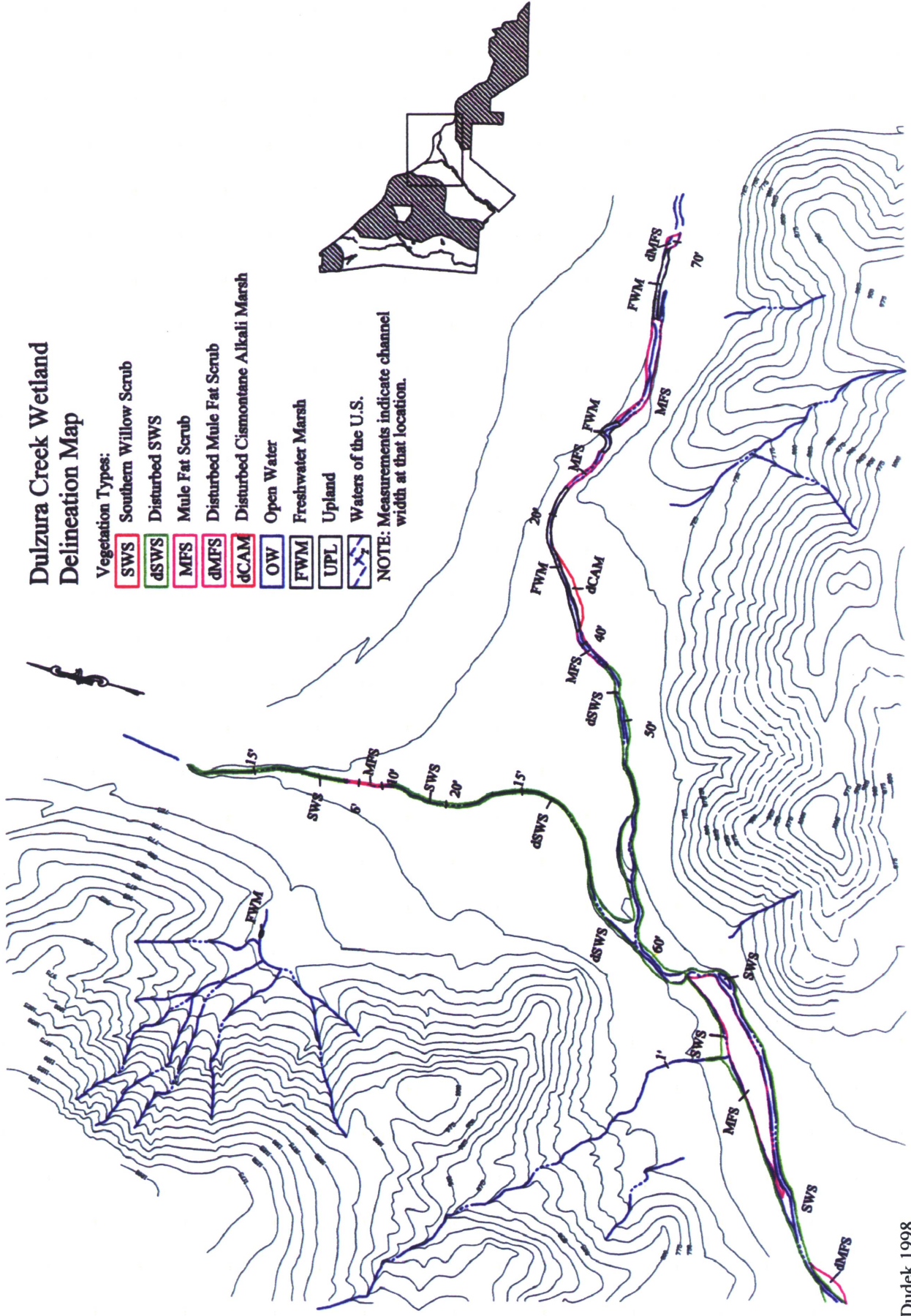


Dulzura Creek Wetland Delineation Map

Vegetation Types:

- SWS Southern Willow Scrub
- dSWS Disturbed SWS
- MFS Mule Fat Scrub
- dMFS Disturbed Mule Fat Scrub
- dCAM Disturbed Cismontane Alkali Marsh
- OW Open Water
- FWM Freshwater Marsh
- UPL Upland
- Waters of the U.S.

NOTE: Measurements indicate channel width at that location.



Source: Dudek 1998

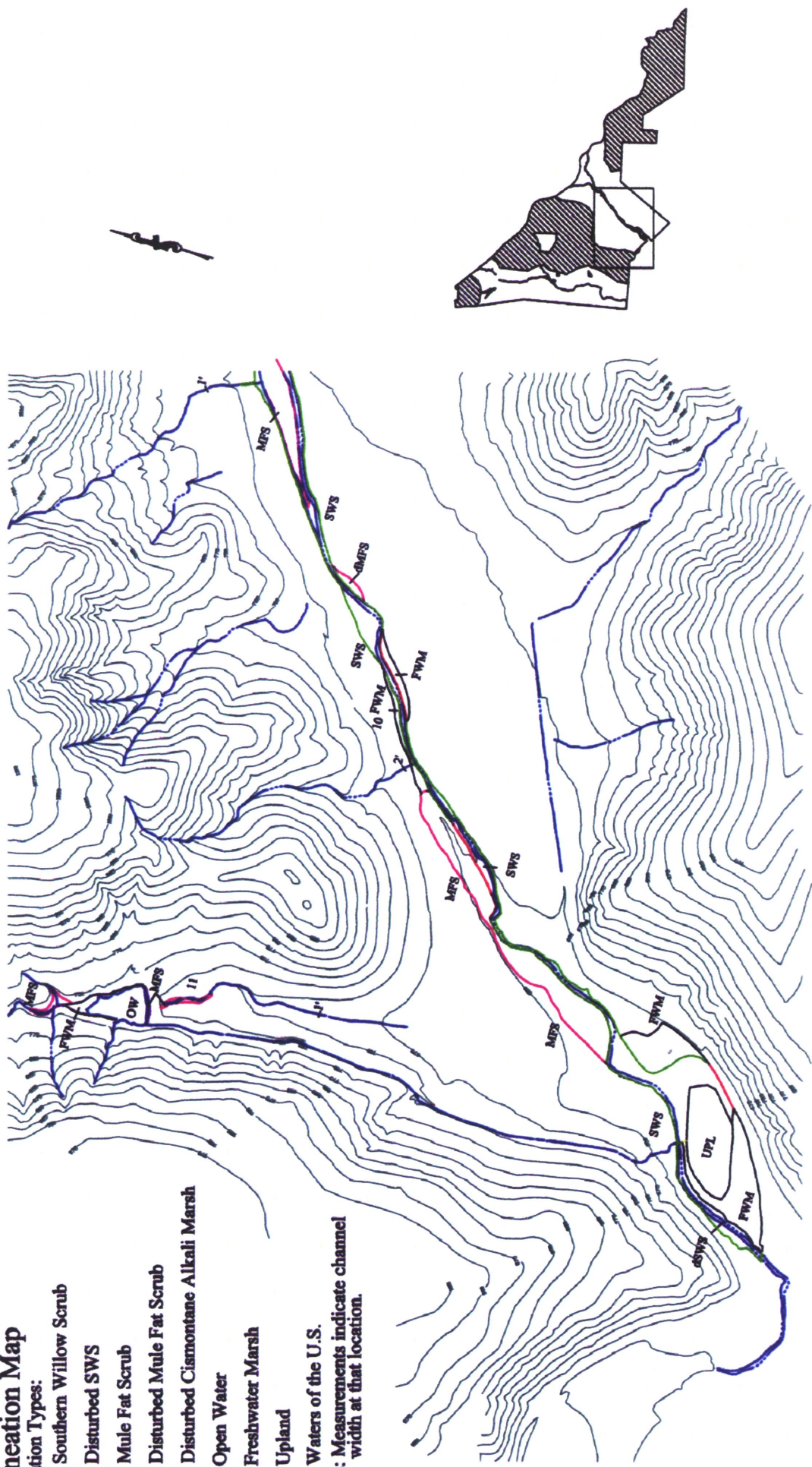


Dulzura Creek Wetland Delineation Map

Vegetation Types:

- SWS Southern Willow Scrub
- dSWS Disturbed SWS
- MFS Mule Fat Scrub
- dMFS Disturbed Mule Fat Scrub
- dCAM Disturbed Cismontane Alkali Marsh
- OW Open Water
- FWM Freshwater Marsh
- UPL Upland
- Waters of the U.S.

NOTE: Measurements indicate channel width at that location.



Source: Dudek 1998



Wildlands, Inc.

Figure 23h
Wetland Delineation Map

Chapter 3: Restoration and Management Plan

Introduction

The restoration of habitat at Rancho Jamul will require a change in the way the property has been managed and active stabilization of stream corridors. The first step in this process has already taken place: removal of the cause of the degradation -- grazing. Subsequent restoration activities, including the repair and expansion of stream environments, can now proceed.

Enhancement of Existing Jurisdictional Habitat

There are 44.72 acres of existing jurisdictional habitat within the study that are not planned for active use by the California Department of Fish and Game. Wildlands plans to conduct activities that will enhance functions and values of these existing jurisdictional waters and wetland habitat along Dulzura and Jamul Creeks. These enhancement activities fall within three categories:

- 10 Removal and control of exotic species.
- 20 Stabilization of head cuts.
- 30 Revegetation of selected stream reaches.

These categories are described below.

Removal and Long-Term Control of Exotic Species

Non-Native Plant Removal and Control. The different reaches of Dulzura and Jamul Creeks currently have varying levels of exotic plant species infestation. The three species of principal concern are shown in Table 5.

Table 5: Exotic Plants of Principal Concern at Rancho Jamul

Arundo or Giant Reed	<i>Arundo donax</i>
Tree of heaven	<i>Ailanthus altissima</i>
Tamarisk (salt cedar)	<i>Tamarix sp.</i>

Wildlands has located and mapped occurrences of these exotic species using a global positioning system. The results of this survey are depicted in Figure 24 and discussed below.

Rancho Jamul Conservation Bank Restoration and Management Plan

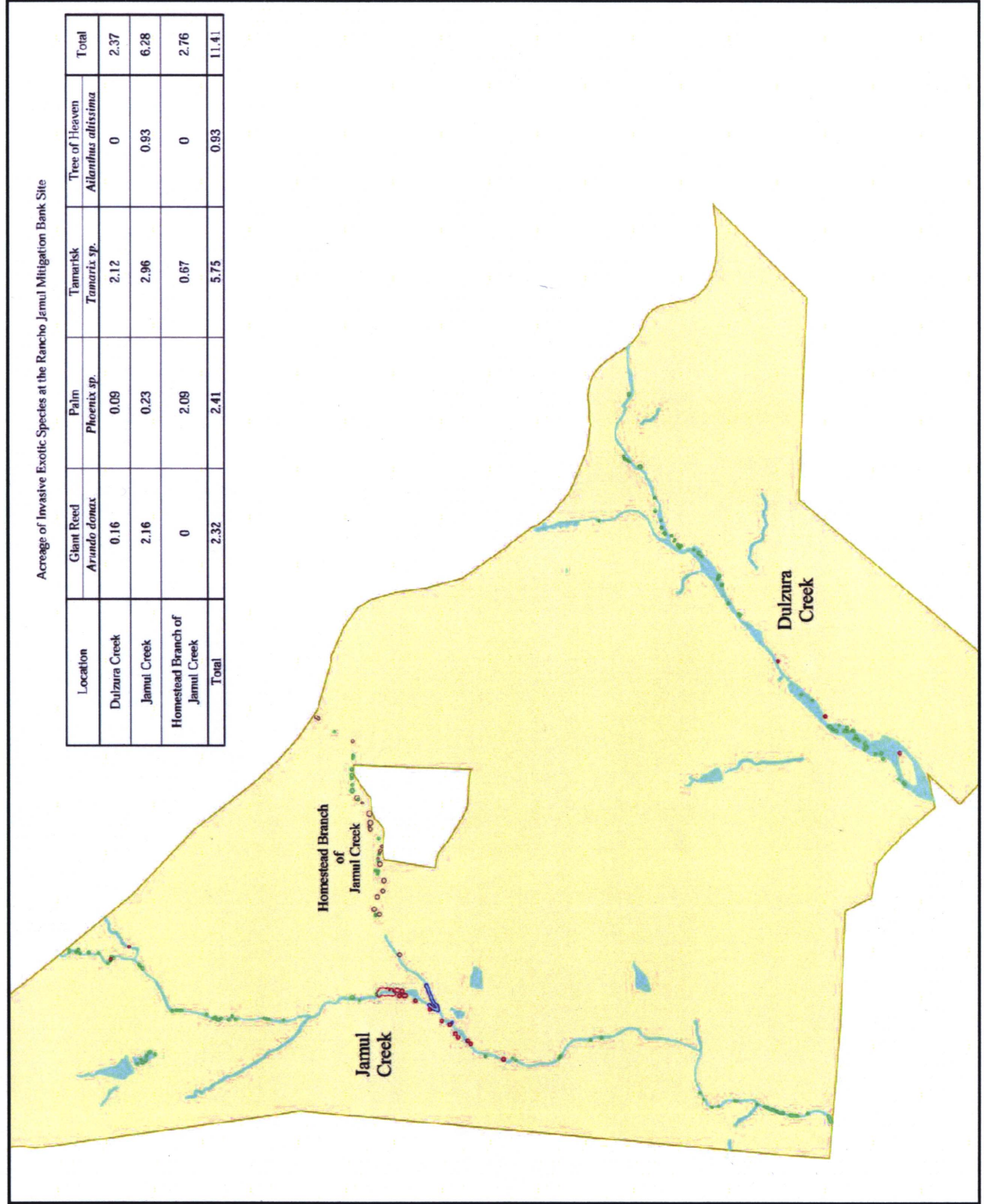


Figure 24
Location of Selected Exotic Species



Arundo is a highly invasive species that favors riparian settings. Its rhizomes are tough, thick, knotty, and vigorous and usually have many branches (University of California, Division of Agriculture and Natural Resources, "The Grower's Weed Identification handbook"). Current infestation is most evident in a large dense cluster and nearby smaller clusters totaling 31,021 square feet along Jamul Creek (see Figure 24). The most effective means of initial removal of arundo is to excavate the root masses. Manual excavation has limited practicality and effectiveness where the plant is well rooted. Therefore, we propose that the work be performed by an excavator positioned outside of the existing riparian zone in order to minimize disturbance of the creek channel or unnecessary destabilization of embankments. The area of infestation will be treated with an appropriate herbicide approved for use in floodplains, such as Rodeo®. The area of infestation will be replanted immediately after removal, using plants from the proposed revegetation plant palette. We propose to monitor the removal site annually until the plant is no longer in evidence for three consecutive years. Any regrowth would be manually removed if possible and treated with herbicide if necessary.

Tree of heaven is also an highly invasive plant that can spread rapidly from seeds or rhizomes. It is currently most evident in the vicinity of the confluence with the main branch of the creek, where an area of 8842 square feet is dominated by the plant (Figure 24). In this location, the existing trees are as high as approximately 30 feet with diameter at breast height of up to approximately eight inches. The trees of heaven will be cut and the stump will be painted or infused with herbicide. The annual monitoring activities of the site will include visits to the infestation sites to check for stump sprouting or sites of new growth.

Tamarisk is an invasive plant of the southwest that can reduce competition by native species through gradual alteration of soil chemistry. Young saplings are evident though most of the project area in varying densities. The growth of tamarisk at the site may have been controlled in the past by the position of the property at a relatively high point in the watershed and by close cropping of cattle. The plant was not evident in grazed reaches during the fall of 1997; it manifested in these reaches as seedlings in the spring of 1998 and now has progressed to the sapling stage. Our June 1999 survey revealed 551 point occurrences of tamarisk and additional plants within clusters totaling 1612 square feet plant (Figure 24). Tamarisk will be cut and the stumps will be painted or infused with herbicide. As in the case of the other invasive species, the annual monitoring activities of the site will include visits to the infestation sites to check for stump sprouting or nodes of new growth. The monitoring will also include semi-annual reconnaissance of the entire riparian zone to ensure detection of new infestations. This will be done through the bank establishment period and into perpetuity.

Non-Native Animal Control. There are various non-native animal species at the site that are of concern from a wildlife management perspective (Table 6). The species of greatest concern at Rancho Jamul is the cowbird. Cowbird removal will be accomplished by trapping birds in modified Australian crow traps. The details of trap placement, baiting, and monitoring will be formulated with input from the wildlife agencies. Cowbird trapping will be an ongoing, potentially perpetual

management activity at the site.

Table 6: Non-Native Animal Species of Principal Concern

Brown-headed cowbird	<i>Molothrus ater</i>
Bullfrog	<i>Rana catesbeiana</i>
Feral/domestic cat	<i>Felis domestica</i>

Wildlands will also cooperate with the California Department of Fish and Game in programs to remove or control bullfrogs and feral cats. The Department has already begun working with the U.S. Biological Services Division on bullfrog eradication from ponds on the site.

Head Cut Stabilization

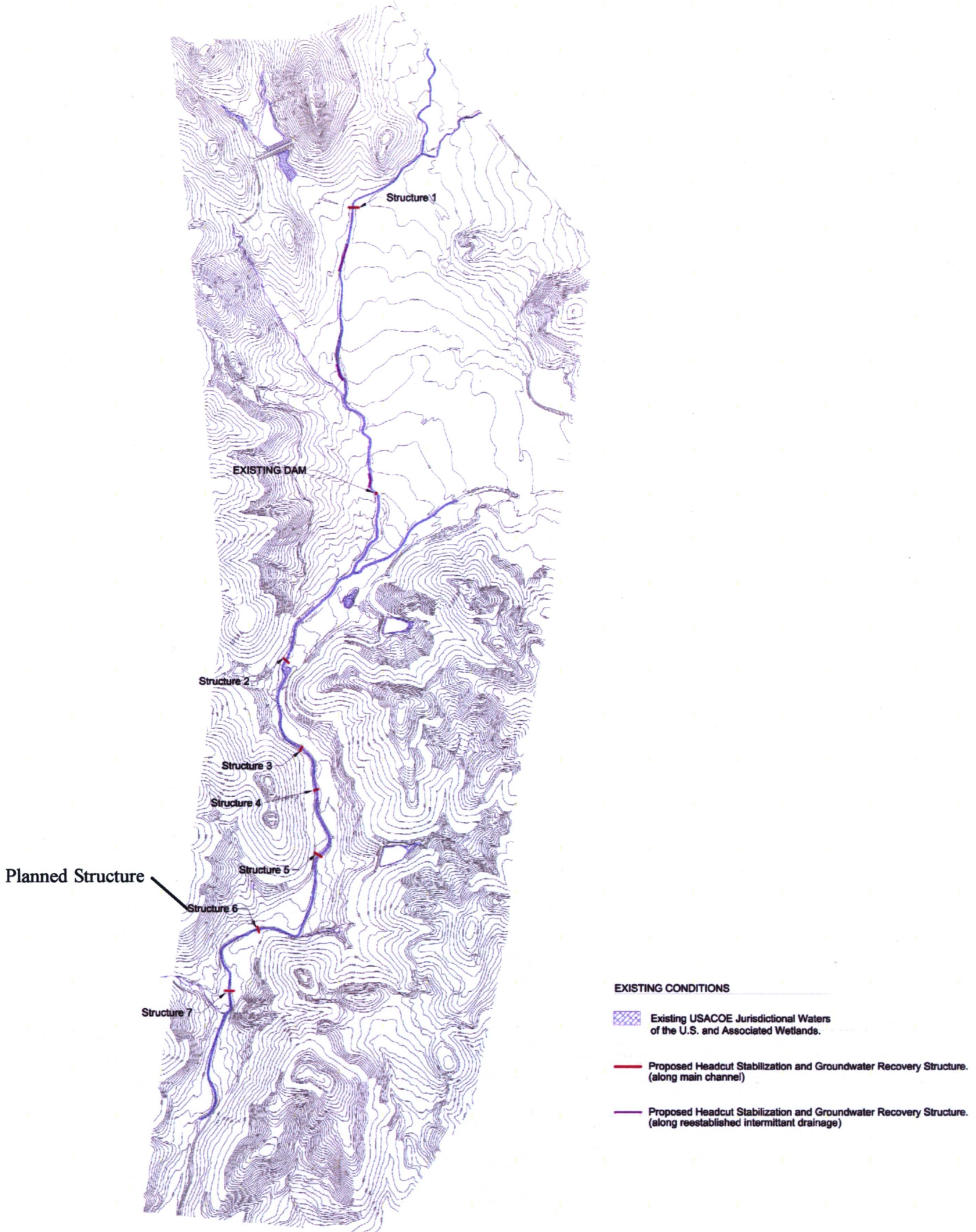
Portions of Dulzura and Jamul Creeks are incised with high vertical banks lacking vegetative cover. In several areas this incision has caused abandonment of the active floodplain to terraces. The overall restoration approach is to cut back the banks and lower the terraces to re-establish an active floodplain area.

In addition to this floodplain restoration, a key step will be to stabilize the severe head cuts on Jamul Creek to ensure that additional incision and loss of active floodplain does not occur. The advancement of these headcuts upstream will need to be controlled. One hard point structure is planned at a prominent headcut on lower Jamul Creek and an additional six structures may be placed if necessary as part of Phase I to control head cuts and to encourage heightening of local groundwater levels (Figure 25). A typical hard point structure is shown in Figures 26a-b.

The most severe head cut is located on a Jamul tributary where two culverts sit atop an eroding creekbed with a seven foot drop in elevation. The height of this drop will complicate the effort to stabilize the head cut. Specific designs are being developed to address this problem as part of Phase II.

Revegetation of Selected Stream Reaches

There are reaches of Dulzura and Jamul Creeks that are revegetating slowly with little diversity of riparian vegetation. In some cases, the limiting factor appears to be a paucity of substrate having suitable conditions for colonization by a range of riparian species. In these circumstances, supplemental plantings will be made within the channel to increase the rate of recovery and increase species diversity. This planting will be done in addition to planting proposed for adjacent, currently non-jurisdictional terraces. At this time, we estimate that approximately 2.6 acres of channel will be affected by this activity.



Habitat Creation and Restoration

Design Goals and Objectives

Jurisdictional Wetland Habitat. The goal of the Rancho Jamul Mitigation Bank Restoration Plan with respect to wetlands is to create, restore, and enhance conditions that constitute wetland habitat under the jurisdiction of the U.S. Army Corps of Engineers.

Specific wetland objectives include:

1. To restore, enhance, and preserve the floodplain, fluvial, and associated wetland processes of Dulzura and Jamul Creeks;
2. To foster the functions and values characteristic of naturally occurring wetlands; and
3. To expand the amount of wetland habitat and to assist in providing for no-net-loss of habitat in the region.

Non-Jurisdictional Oak and Riparian Habitat. The goal of the Rancho Jamul Mitigation Bank Restoration Plan with respect to oak and riparian habitat is to expand these sensitive ecological community and to protect and expand populations of special-status species. In particular, the proposed Bank site will play an important role in protecting and increasing a population of the endangered least Bell's vireo and promoting linkages with other populations of this species.

Specific riparian objectives of the Rancho Jamul Mitigation Bank include:

1. To restore the native vegetative cover and structural diversity of the stream-influenced areas of the site;
2. To increase native species diversity;
3. To provide new breeding sites and foraging habitat for the least Bell's vireo and other riparian species;
4. To provide connectivity with adjacent habitats;
5. To serve as a refugia during periods of potential population declines following random naturally occurring events; and
6. To endow and manage the site in perpetuity to protect habitats and special-status species populations.

The design criteria developed to accomplish these goals and objectives are listed below.

Design Criteria

The following design criteria have guided the preparation of the draft Restoration Plan and will continue to guide the project through implementation and management. The criteria for non-jurisdictional riparian habitat have been adapted from the Draft Least Bells Vireo Recovery Plan.

Creation of New Jurisdictional Habitat

1. Establishment of new wetland habitat meeting the three parameter test of the U.S. Army Corps of Engineers in upland areas of little habitat value;
2. Restored floodplain and fluvial processes, such as natural water flow and sedimentation regimes, such that wetland hydrology is restored to streamside locales of the site.; and
3. Expansion and establishment of the marsh and riparian plant communities shown in Table 7.

Creation/Restoration of Non-Jurisdictional Oak and Riparian Habitat

1. The presence of dense cover within 1-2 meters (3-6 feet) of the ground, where least Bells vireo nests are typically placed;
2. A dense, stratified canopy for foraging; and
3. Adjacent upland vegetation.

Table 7: Rancho Jamul Mitigation Bank Vegetation Communities

Rancho Jamul Mitigation Bank Restoration Categories	San Diego Co. Bio. Mit. Ord. Plant Com./NDDDB General Habitat Type	1997 NDDDB Natural Community Series (NDDDB Code)	Distribution	Description *
Riparian Complex and Least Bell's Vireo Habitat	Riparian Forest and Woodland (61.000.00)	Mixed Willow (61.207.00)	Widely distributed through CA	More than one willow species in canopy. Arroyo willow, big-leaf maple, black willow, CA sycamore, Fremont cottonwood, narrowleaf willow, red willow, and/or white alder may be present. Trees < 10 m; canopy continuous. Shrubs sparse under tree canopy. Seasonally flooded, saturated.
	Riparian Scrub (63.000.00)	Mulefat Scrub (63.510.00)	CA locations include the so. coast & the Peninsular Range	Mulefat sole or dominant shrub in canopy; arroyo willow, and/or narrowleaf willow may be present. Shrubs < 4m.; canopy continuous. Ground layer sparse. Seasonally flooded, saturated. Canyon bottoms; irrigation ditches, stream channels.
		Mixed Willow (61.207.00)	Widely distributed	See description above. In the scrub form of this plant community, the trees listed are either absent or occasionally emergent from the shrub layer.
Freshwater Wetland	Fresh Water Marsh (52.100.00), Alkali Marsh (52.200.00), Meadows & Seeps (45.000.00), Native Grassland (41.000.00)	Fresh Water Marsh, bulrush, bulrush-cattail, cattail, duckweed, etc. Alkali Marsh (Cismontane), Sedge, Spikerush. Saltgrass.	Widely distributed through CA	Bulrushes and cattails important herbs emerging from water; broadleaf cattail, California bulrush, common tule, saltgrass, umbrella-plant, African umbrella sedge, coarse cyperus, pale spike-rush, spiny rush, toad rush, mariposa rush, yerba mansa, dock, annual rabbit-foot grass, bog rush, and rush may be present. Herbs < 4 m; cover continuous, intermittent, or open. Habitat permanently flooded, regularly flooded, semipermanently flooded, irregularly flooded, irregularly exposed.
Non-Jurisdictional Oak and Sycamore Woodland	Riparian Forest and Woodland (61.000.00)	California Sycamore (61.310.00)	CA locations include the so. coast & the Peninsular Range	California sycamore sole or dominant in the canopy as widely spaced trees; arroyo willow, black willow, CA bay, coast live oak, Fremont cottonwood, red willow, and white alder may be present. Trees < 35 m; canopy open. Shrubs common or infrequent. Ground layer grassy. Soils permanently saturated at depth. Riparian corridors; braided, depositional channels of intermittent streams; gullies; springs; seeps; stream and river banks, terraces adjacent to floodplains subject to high-intensity flooding.
		Coast Live Oak (71.060.00)	CA locations include the so. coast & the Peninsular Range	Coast live oak sole, dominant, or important tree in canopy; bigleaf maple, box elder, California bay, Engelmann oak, and laurel sumac may be present. Trees < 30 m tall; canopy continuous, intermittent, or open. Shrubs occasional, or common. Ground layer grassy or absent. Raised stream banks and terraces. Note: the riparian expression of this habitat type is similar to the California sycamore series where live oak is dominant.

* Descriptions adapted from: "A Manual of California Vegetation", by John O. Sawyer and Todd Keeler-Wolf. 1995. California Native Plant Society.

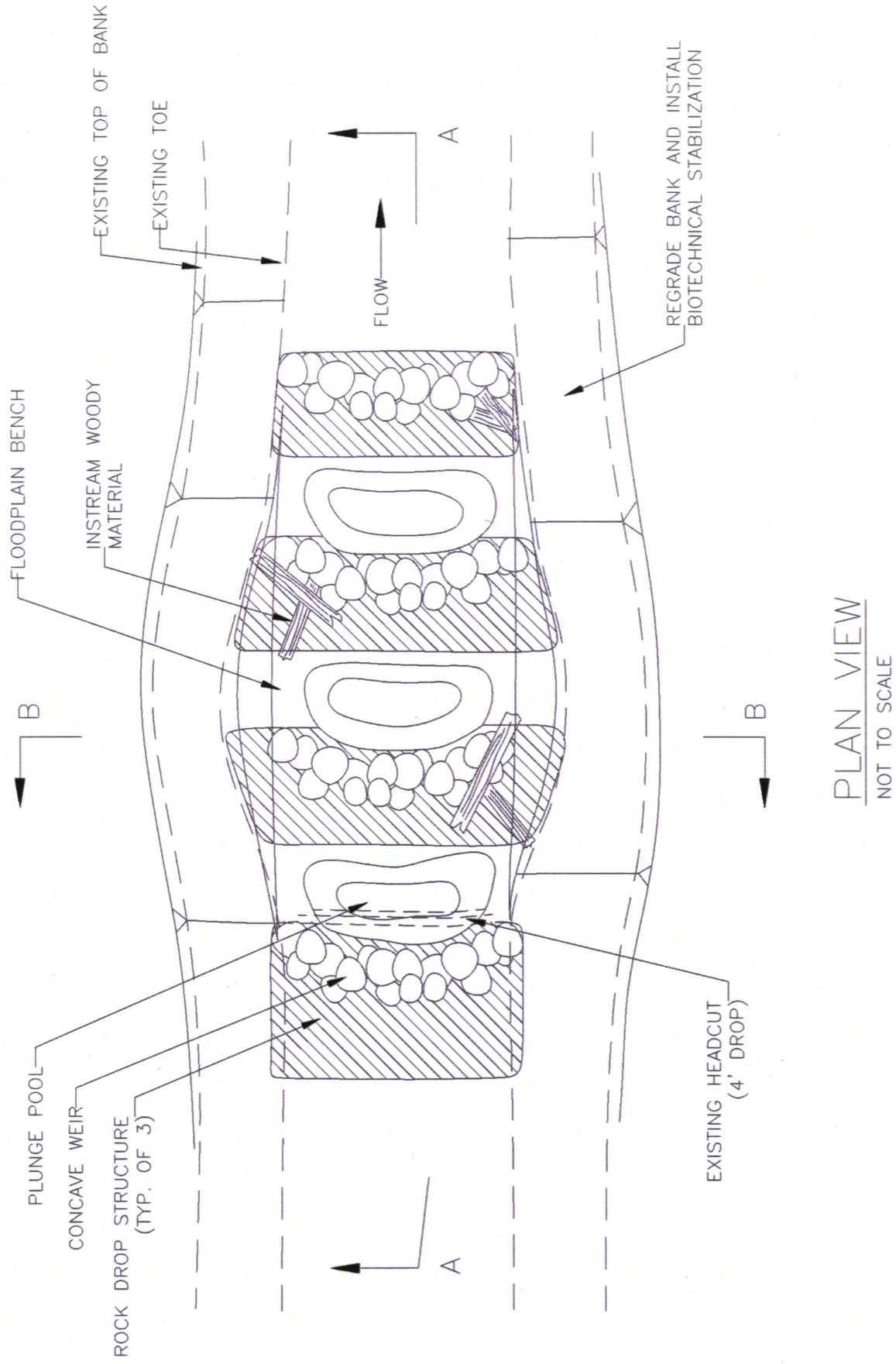
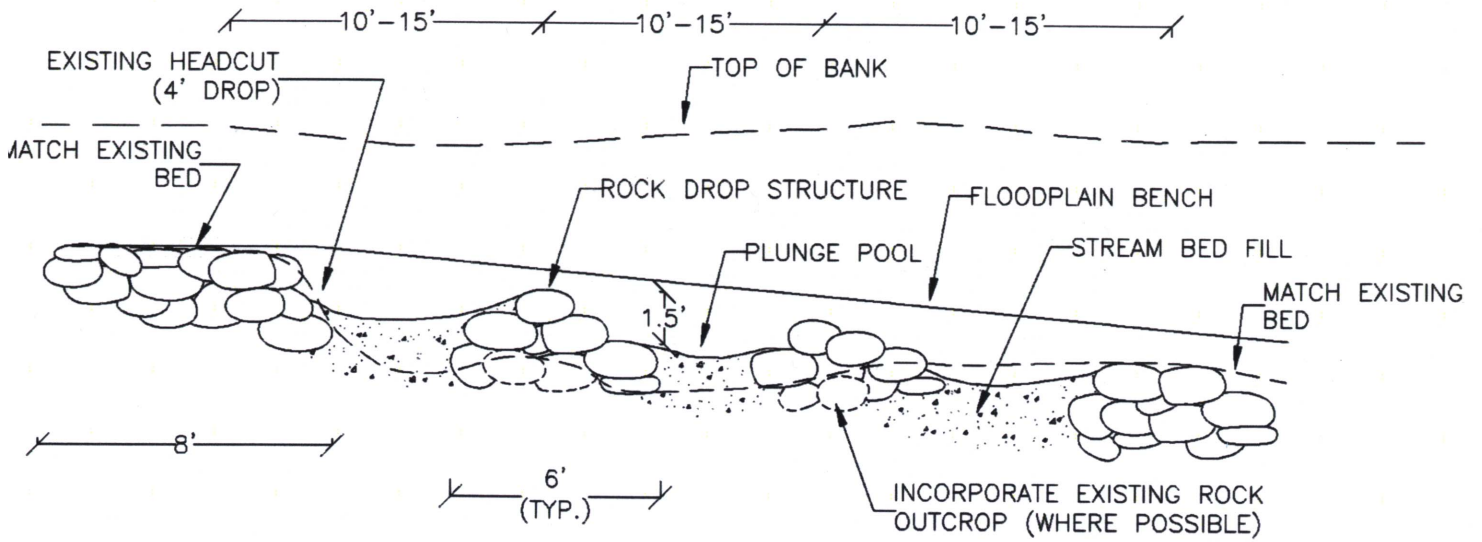
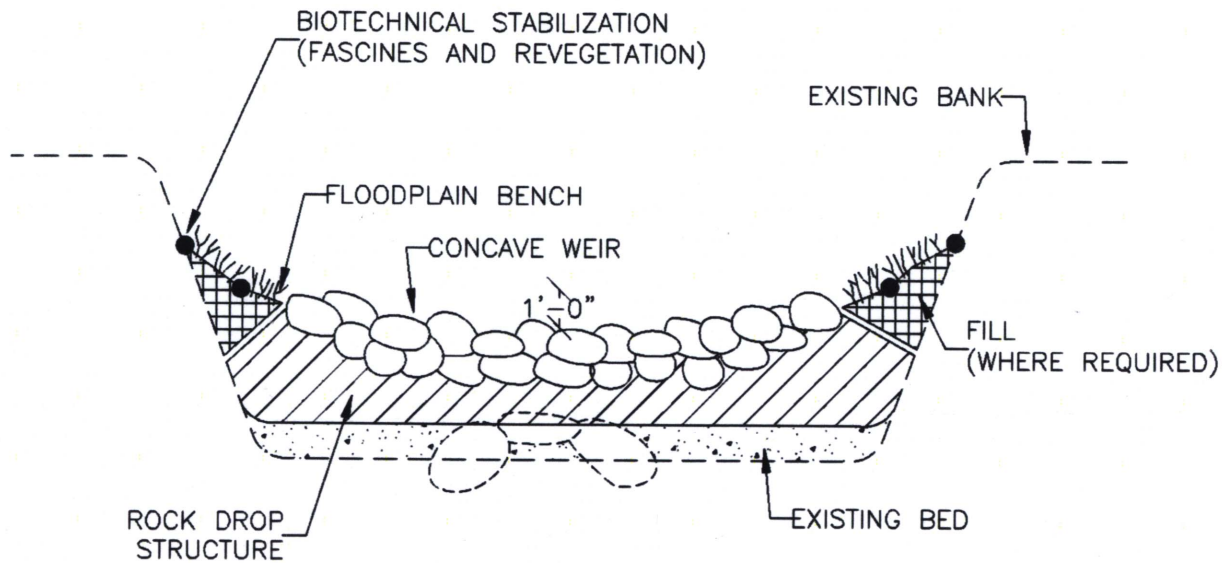


Figure 26a
Head Cut Stabilization Structure





SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



Habitat Restoration Design Concept

The fundamental features of the restoration design are depicted in Figures 27-29. These illustrations show the proposed channel modifications and progression of habitat for two different types of existing channel geomorphology.

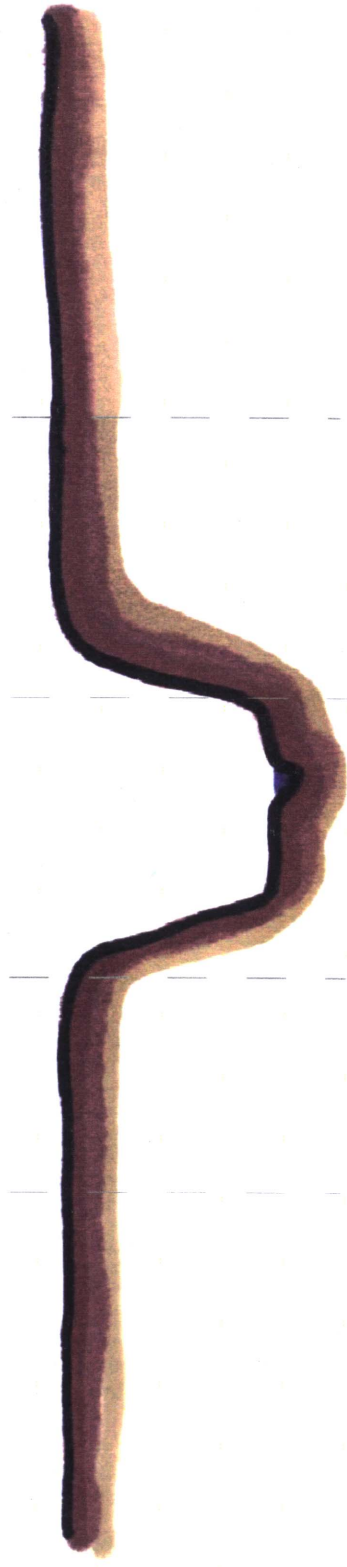
Figure 27 depicts the type of deep and narrowly incised channel typical of most of Jamul Creek and the upper reaches of Dulzura Creek. The first step in restoration, the removal of grazing, has taken place. This is allowing the re-establishment of vegetation in the bottom the incised channel. The second step in restoration entails excavation along these channels to convert abandoned terraces to active floodplains; these re-established floodplains will accommodate the higher winter discharges and will be in contact with groundwater during all but the driest months of the year. The final step in the restoration is revegetation, primarily though natural colonization but also including planting on the peripheral, higher benches. The emphasis of the design concept on re-establishment of active floodplains is supported by the hydrologists providing technical support for this project, Northwest Hydraulic Consultants, Inc. (Appendix E).

The floodplains will primarily support riparian plant communities that also qualify as jurisdictional wetlands; the lower pits, ponds, and some of the overflow channels will support marsh plant communities. The slopes and upper terraces adjacent to the floodplains will support non-jurisdictional riparian communities.

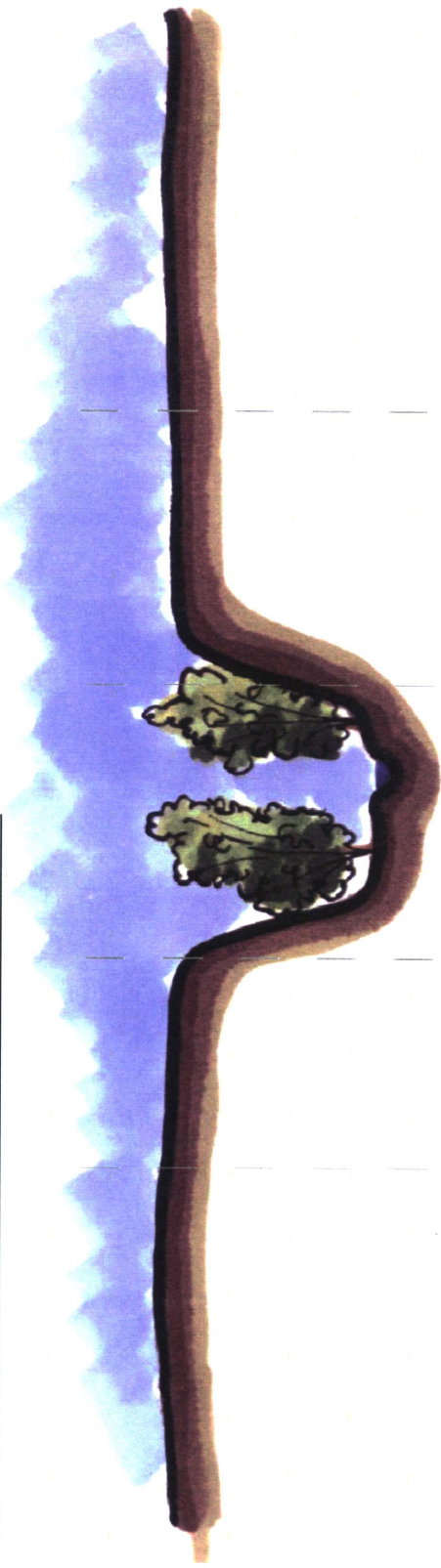
The restoration concept illustrated in Figure 28 applies to an existing channel with some incision in a low flow channel, but with an adjacent high floodplain terrace. The concept here is to lower and broaden the floodplain terrace to accommodate the lower velocity flood waters that will result as the main channel continues to revegetate and experience increases in hydraulic 'roughness.'

In both types of channel modifications, the restoration effort will take advantage of opportunities to create variety in landform -- overflow channels, for example, will provide slow and still water environments supporting freshwater marsh and mixed riparian forest (Figure 29). The excavated material will be placed on disturbed upland outside of the flood zone and will be formed and planted to appear as a gently rolling landscape.

Existing Downtcut, Incised, and Grazed Condition



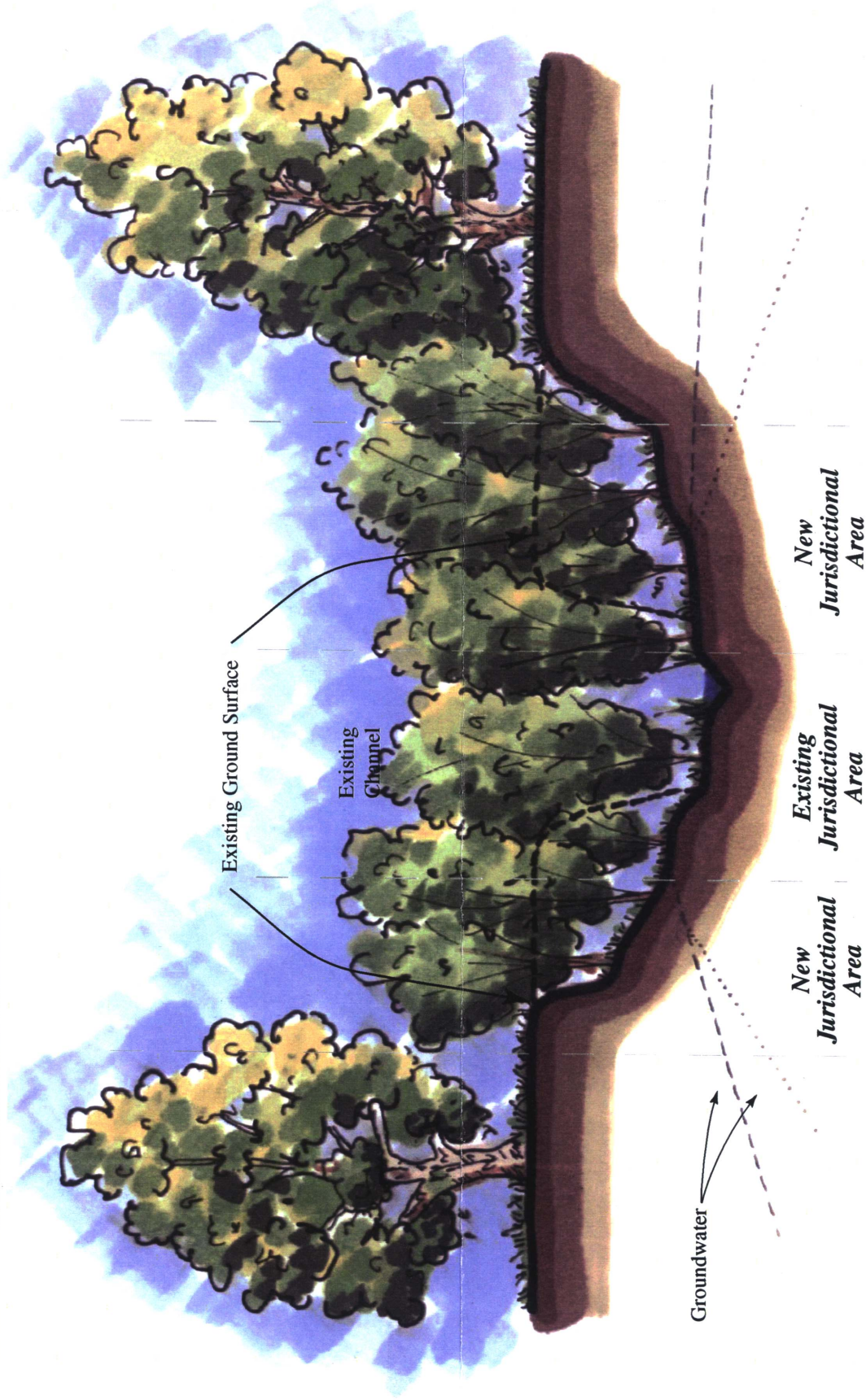
Existing Channel with Grazing Removed and Riparian Vegetation Beginning to Develop



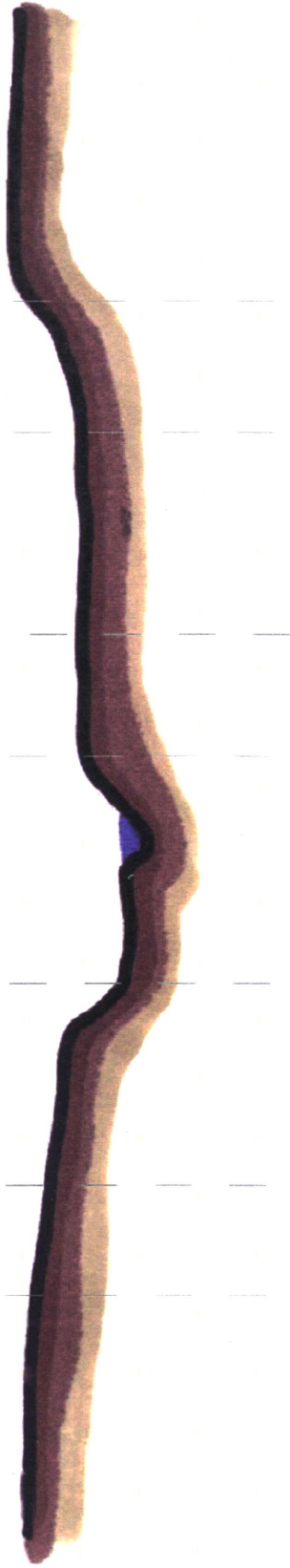
Channel Immediately After Recreation of Active Floodplains



Ultimate Restored and Revegetated Corridor



Existing Downt, Incised, and Grazed Condition



Existing Channel with Grazing Removed and Riparian Vegetation Beginning to Develop



Channel Immediately After Recreation of Active Floodplain



Ultimate Restored and Revegetated Corridor

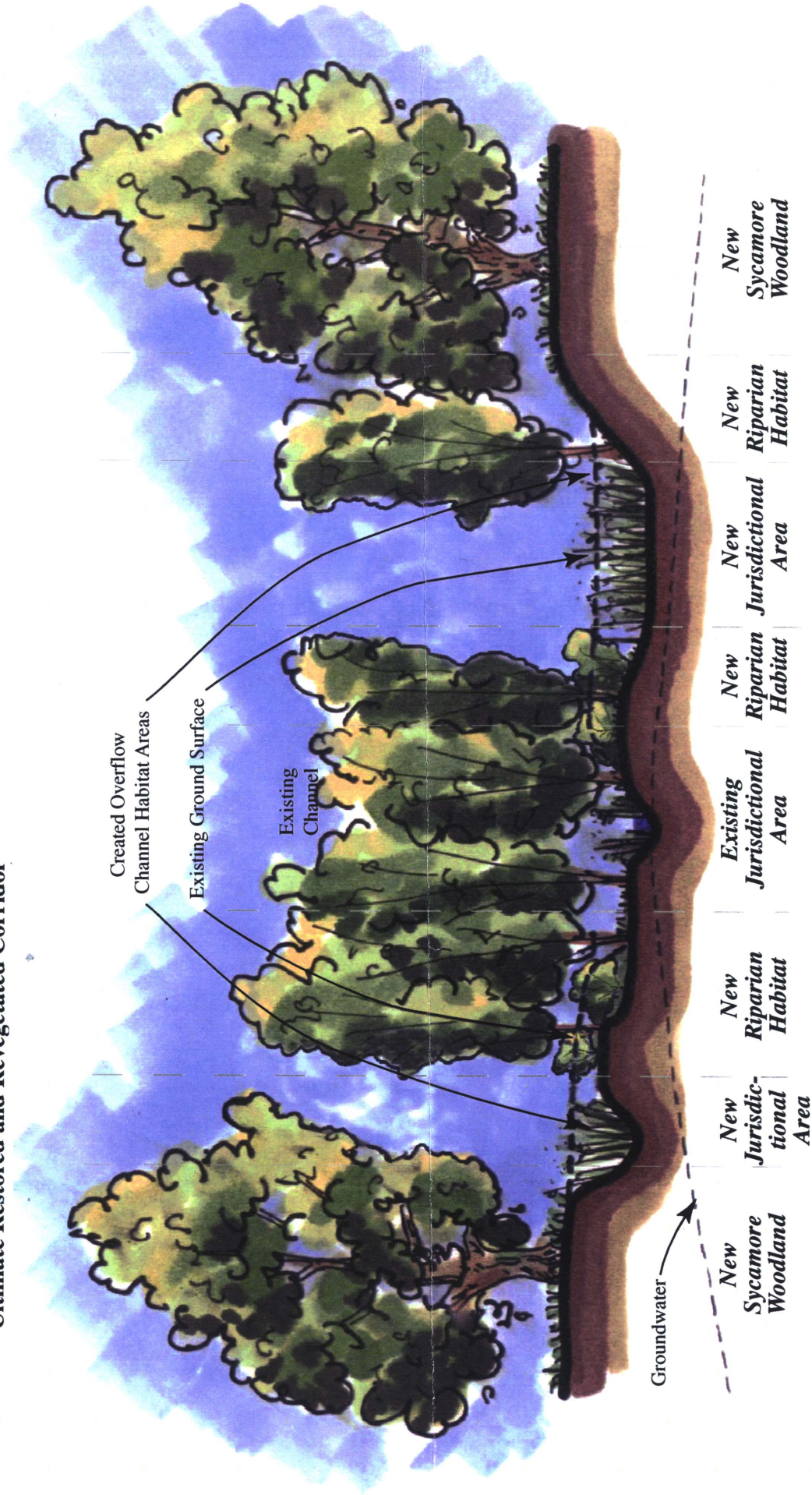
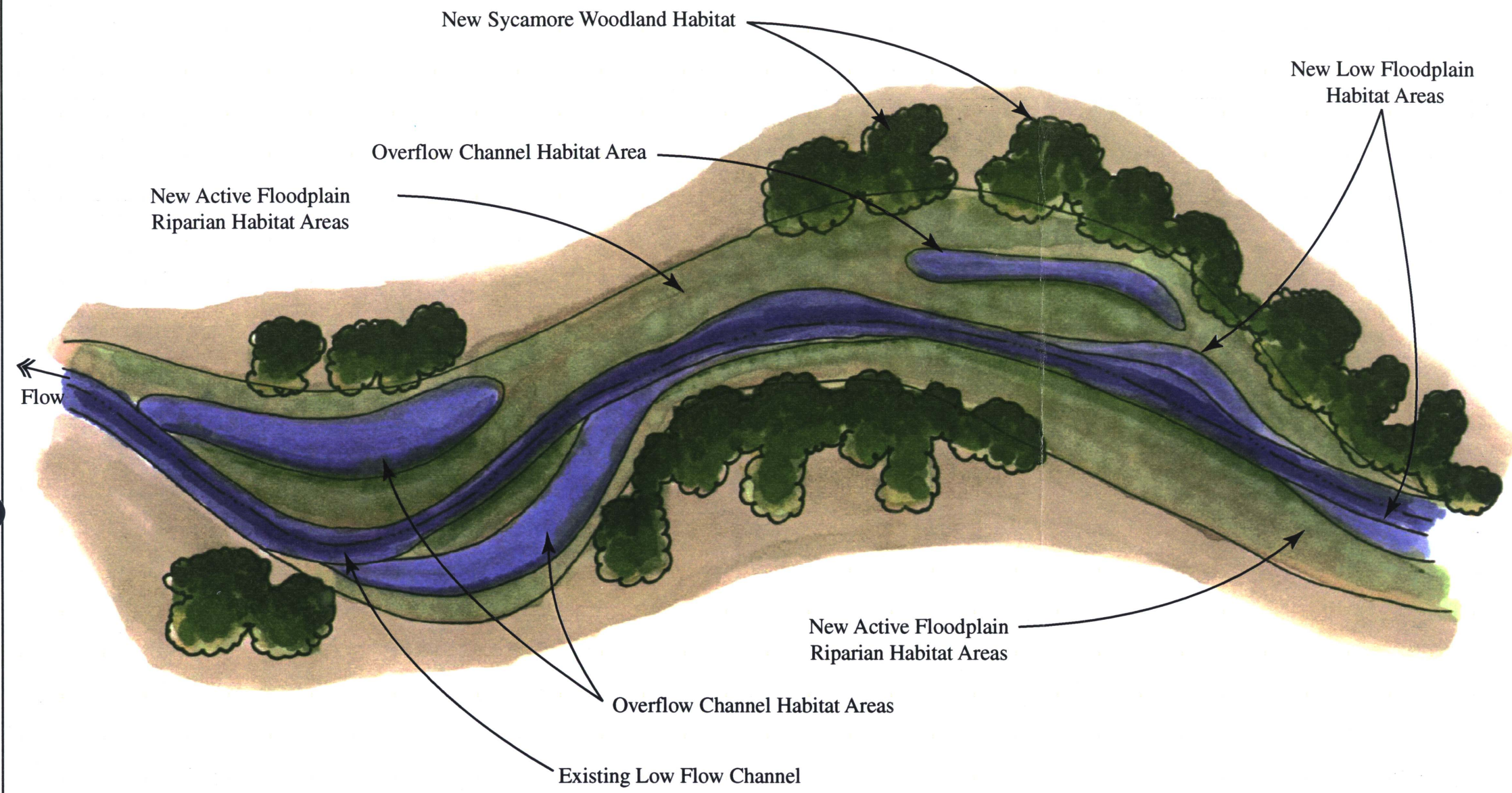


Figure 29
Restoration Concept Plan View



Note: Topographic variation to be created throughout, including pits, ponds, hummocks, and ephemeral channels.



Habitat Restoration Design Diagram

The Habitat Restoration Design Diagram shows the proposed array of the concepts discussed above at the site (Figures 30a-d). The proposed habitat creation and restoration locations, acreage, and habitat types of the design are listed in Table 8. This design is still a concept that will be refined based on the results of further analysis and conditions encountered in the field. Final acreage will be established based on mapping of as-built conditions. The project is proposed to be phased based on construction requirements and further study of the hydrologic conditions of particular stream reaches.

As shown in the Restoration Diagram, floodplains are proposed to be expanded in several locations along both creeks. The location of the expanded floodplains is based on the presence of high groundwater and alluvial soils, and the condition and profile of the adjacent channel. The majority of the Phase I floodplain expansion along Jamul Creek is planned in the southern half of the stream within the project area. Four nodes of Phase I floodplain habitat are shown, two that are wide plains, and two that are overflow channels. Much smaller nodes of Phase I jurisdictional habitat are depicted on more northerly reaches of the creek.

The planned approach to restoration is to re-establish streamside conditions characteristic of natural creeks and floodplains. One consequence of this approach is an inability to predict the precise acreage of freshwater marsh versus jurisdictional riparian habitat. The marsh will occupy the pits, ponds, and deeper overflow channels, but the exact response to these features will vary. However, it is anticipated that the freshwater marsh component of the total jurisdictional habitat will fall between 10 - 25 percent.

Phase II of restoration will address the change in the profile of the creekbed that has been created by the most severe head cut on the creek. The profile of the creekbed below the head cut no longer reflects the slope of the ground surface, contributing to discontinuities in sediment and energy patterns.

There are four principal options for correcting the creekbed profile, ranging from least to most intervention in the existing creek environment. These are described in the attached analysis from Northwest Hydrology Consultants (Appendix E). The lowest level of intervention would entail selective placement of logs and rocks within the stream to encourage gradual trapping of sediments, leading to aggradation in a series of small steps and ultimate recovery of the native creekbed profile. Since this sediment accumulation would take place over time, the existing vegetation could adapt to the gradually changing condition. A second level of intervention would involve placement of low dam structures in a series downstream of the main head cut to encourage more rapid aggradation. The highest level of intervention would entail the placement of low dam structures and fill material behind these structures to immediately correct the creekbed profile. The disadvantage of this approach is the immediate loss of the existing in-channel vegetation. In any of the scenarios, a goal would be to raise groundwater levels adjacent to the creek, facilitating the establishment of floodplain as part of Phase II.

Wildlands will collect more information on the creek system before selecting or implementing long-term repair of creek profile. We will collect the data as Phase I of the project proceeds and work with the Mitigation Bank Review Team to select the best approach.

Several expanded floodplains are planned along most of Dulzura Creek. Individual Phase I features include a wide plain along the center reach of Dulzura Creek, a large block of new floodplain wetlands within an area of existing wetlands in the southwest corner of the project area, and several other pockets of streamside wetlands. Potential phase II wetlands are located in the upper reaches of the creek.

Non-jurisdictional oak and riparian habitats will be established adjacent to the expanded floodplain or, in some cases, next to the existing channel. The location, breadth, and density of these riparian zones vary based on available soil moisture, soil type, and aspect.

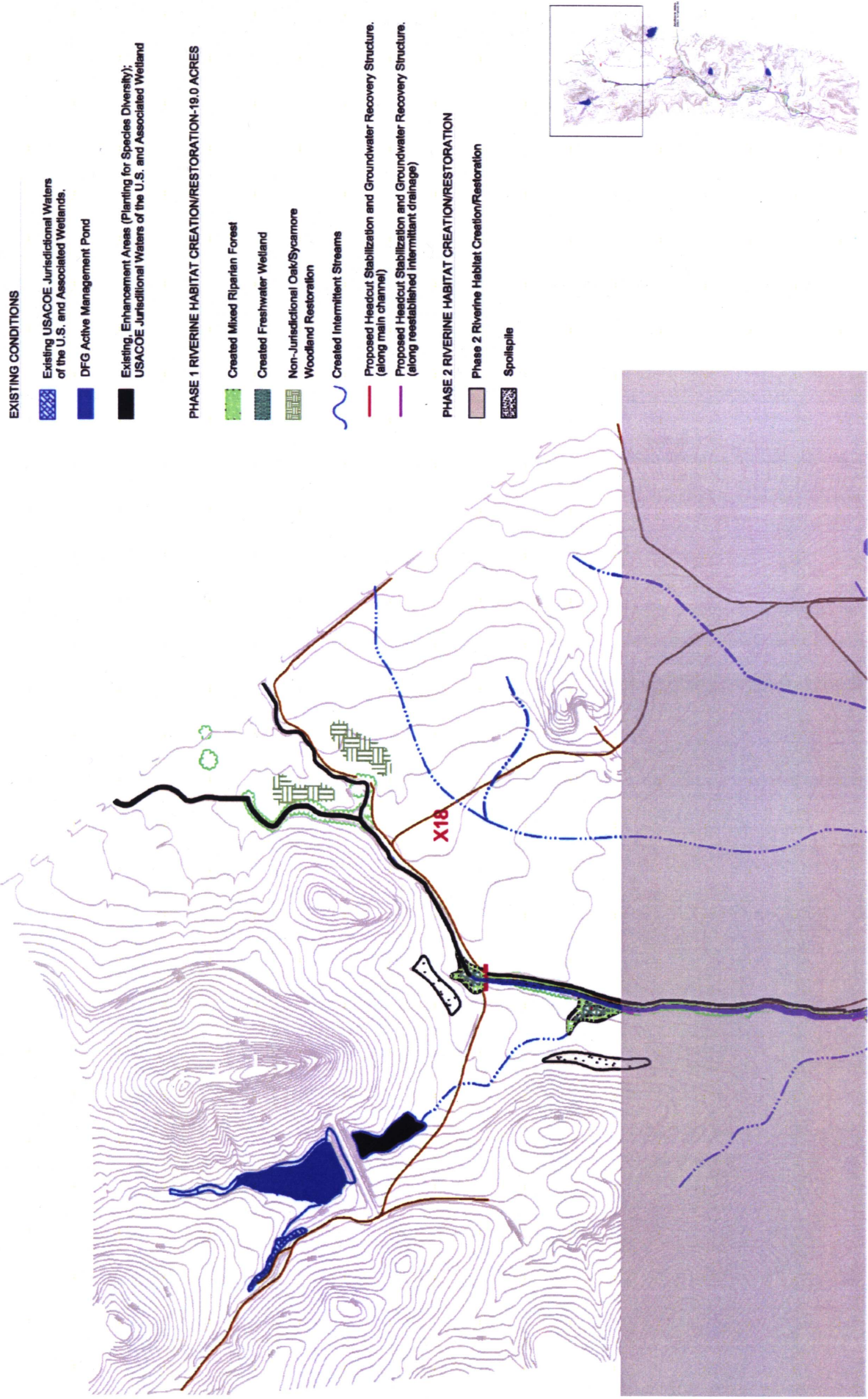
The restoration plan for Jamul Creek also envisions restoring intermittent tributary creeks, where they have been diverted, to their original alignment. In some cases, the diversion has been a result of road construction; examples include a Jamul Creek tributary diverted by Highway 94 and two tributaries that were diverted by Otay Lakes Road. Evidence of the historic alignment of these creeks is available from inspection of topography and offsite creek alignment, and from early maps of the Jamul Rancho (Figures 9, 11, and 31). In other cases, the diversion has resulted from impoundment of drainages and the creation of side-slope feeder ditches.

Table 8: Summary Description of Proposed Habitat Creation and Restoration Locations

CREATED HABITAT-DULZURA CREEK			
Created Riverine habitat			
Site #	Area (sq.ft)	Acres	
CRH1	72,591	1.7	
CRH2	84,006	1.9	
CRH3	76,374	1.8	
CRH4	63,799	1.5	
CRH5	120,776	2.8	
CRH6	106,216	2.4	
CRH7	71,989	1.7	
CRH8	11,095	0.3	
CRH9	3,371	0.08	
CRH10	88,757	2.0	
CRH11	65,420	1.5	
CRH12	118,510	2.7	
CRH13	49,743	1.1	
CRH14	154,078	3.5	
Subtotal		24.9	
Created Intermittent Stream			
Site #	Length (ft)	Ave. Width (ft)	Area (sq.ft)
CIS1	1,018	2	2,036
CIS2	1,709	2	3,418
CIS3	513	2	1,026
CIS4	688	2	1,376
CIS5	578	2	1,156
CIS6	447	2	894
CIS7	2,734	3	8,202
CIS8	1,019	2	2,038
CIS9	792	4	3,168
Subtotal	9,498		.53 Acres
Total			25.43 Acres

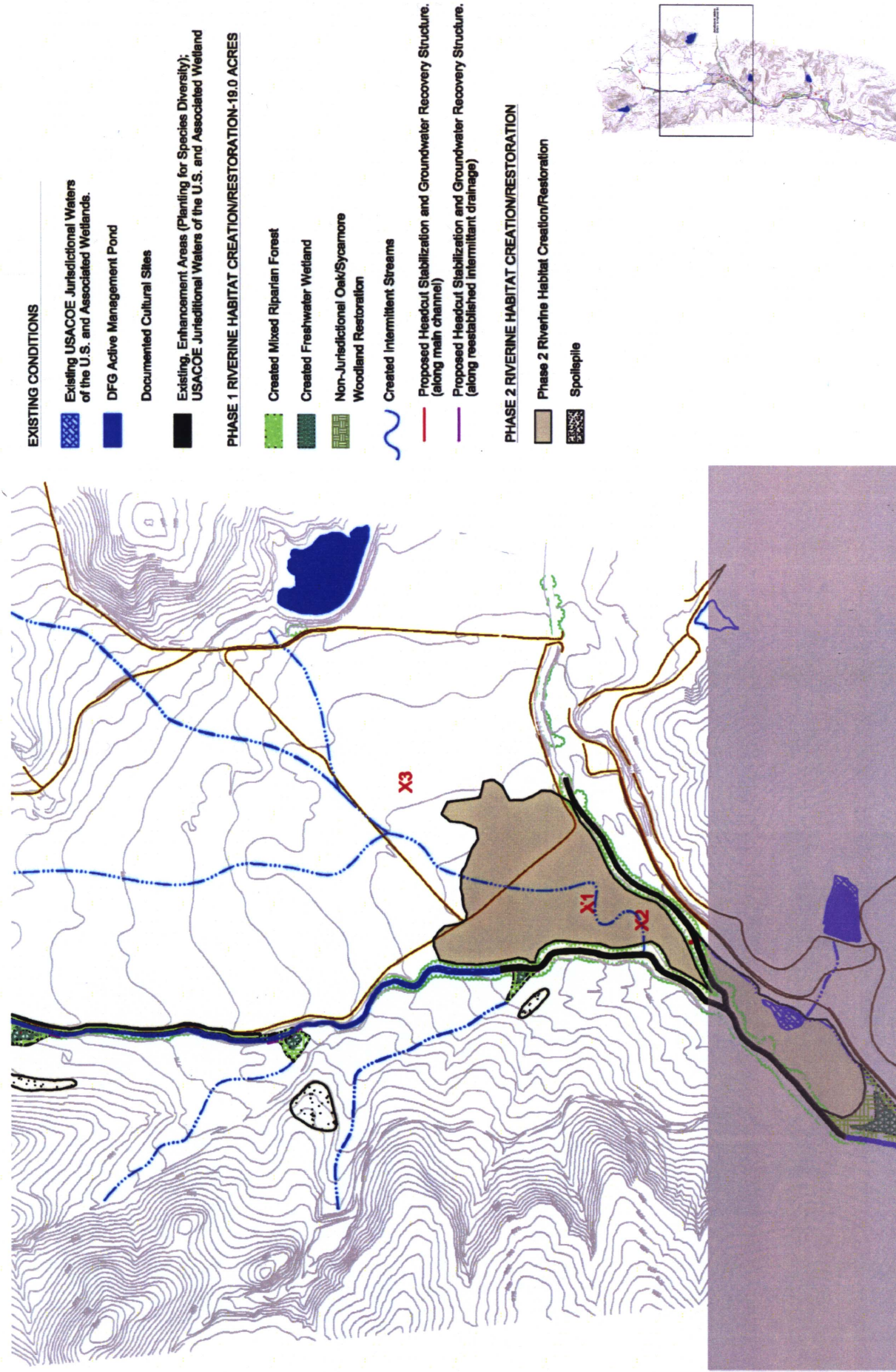
CREATED HABITAT-JAMUL CREEK			
Created Riverine habitat			
Site #	Area (sq. ft)	Acres	
CRH15	21,933	0.5	
CRH16	63,964	1.5	
CRH17	27,381	0.6	
CRH18	27,452	0.6	
CRH19	12,333	0.3	
CRH20	131,894	3.0	
CRH21	130,710	3.0	
CRH22	112,173	2.6	
CRH23	21,150	0.5	
CRH24	25,486	0.6	
CRH25	127,110	2.9	
CRH26	124,539	2.9	
Subtotal		19.0	
Created Intermittent Stream			
Site #	Length (ft)	Ave. Width (ft)	Area (sq.ft)
CIS10	1,088	2	2,176
CIS11	1,587	2	3,174
CIS12	943	2	1,886
CIS13	3,006	3	9,018
CIS14	2,434	2	4,868
CIS15	1,104	2	2,208
CIS16	395	3	1,185
CIS17	1,539	2	3,078
CIS18	1,882	2	3,764
CIS19	2,143	5	10,715
CIS20	2,134	2	4,268
CIS21	532	2	1,064
CIS22	395	2	790
CIS23	166	2	332
CIS24	580	2	1,160
Subtotal	19,928		1.14 Acres
Total			20.14

Habitat Enhancement (Credited) - 8.02 acres



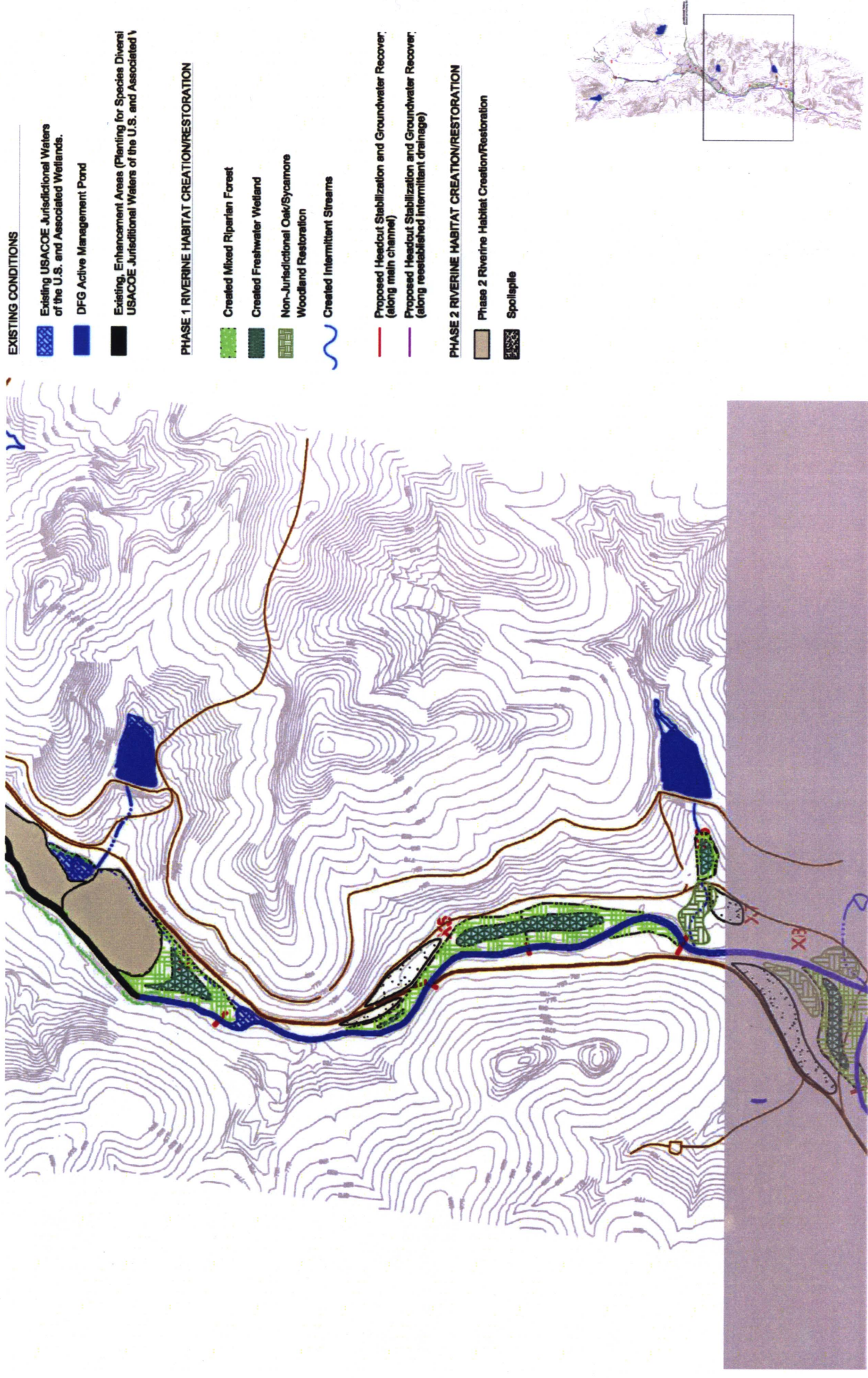
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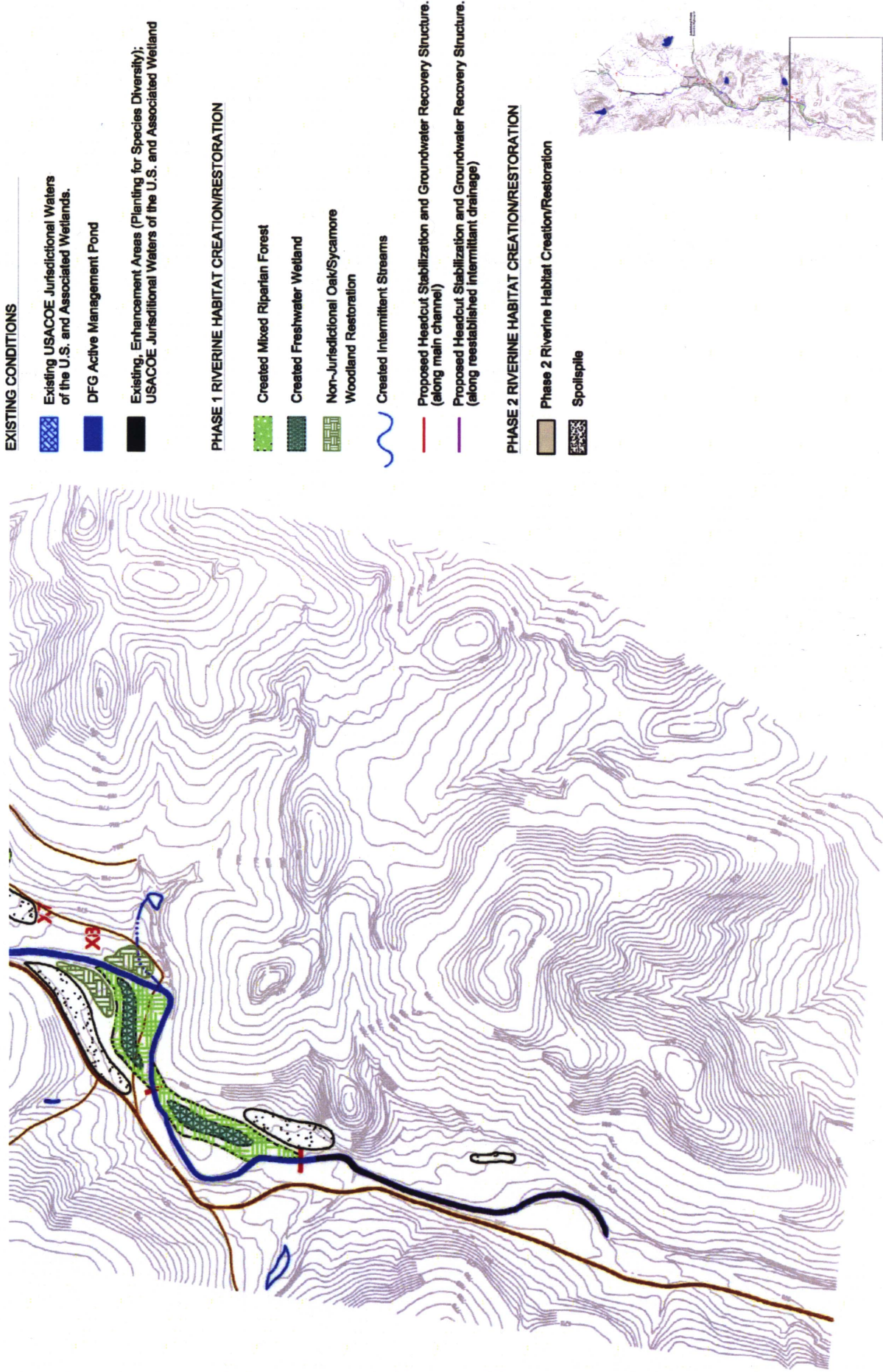


Figure 30d
Jamul Creek Habitat Restoration Design Diagram

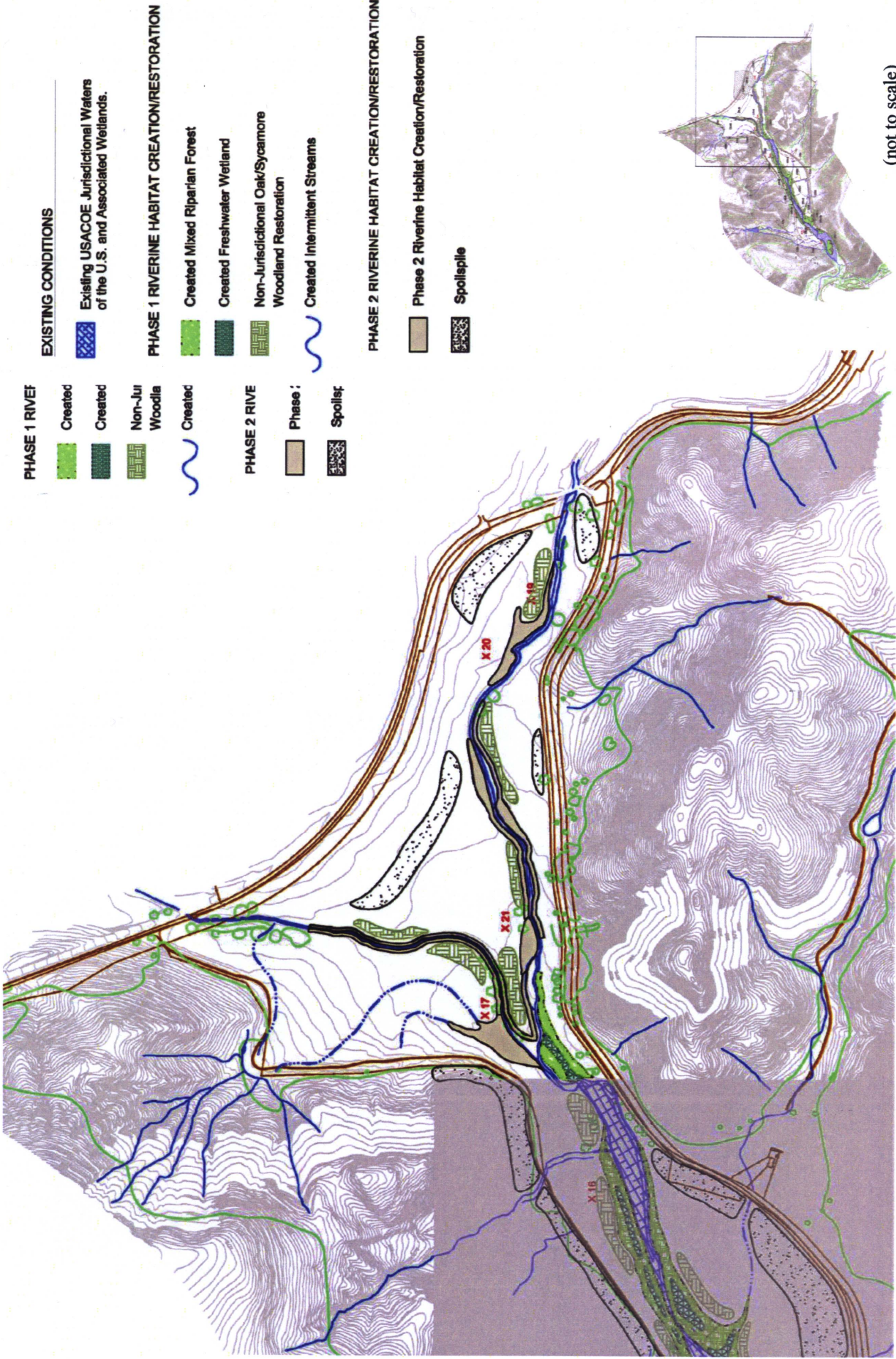


Figure 30e
Dulzura Creek Habitat Restoration Design Diagram



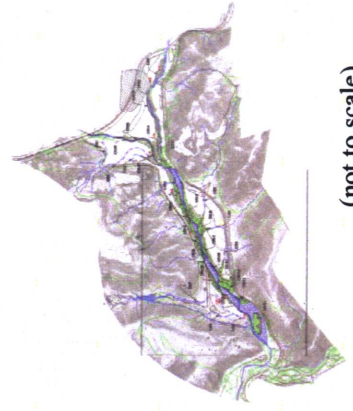
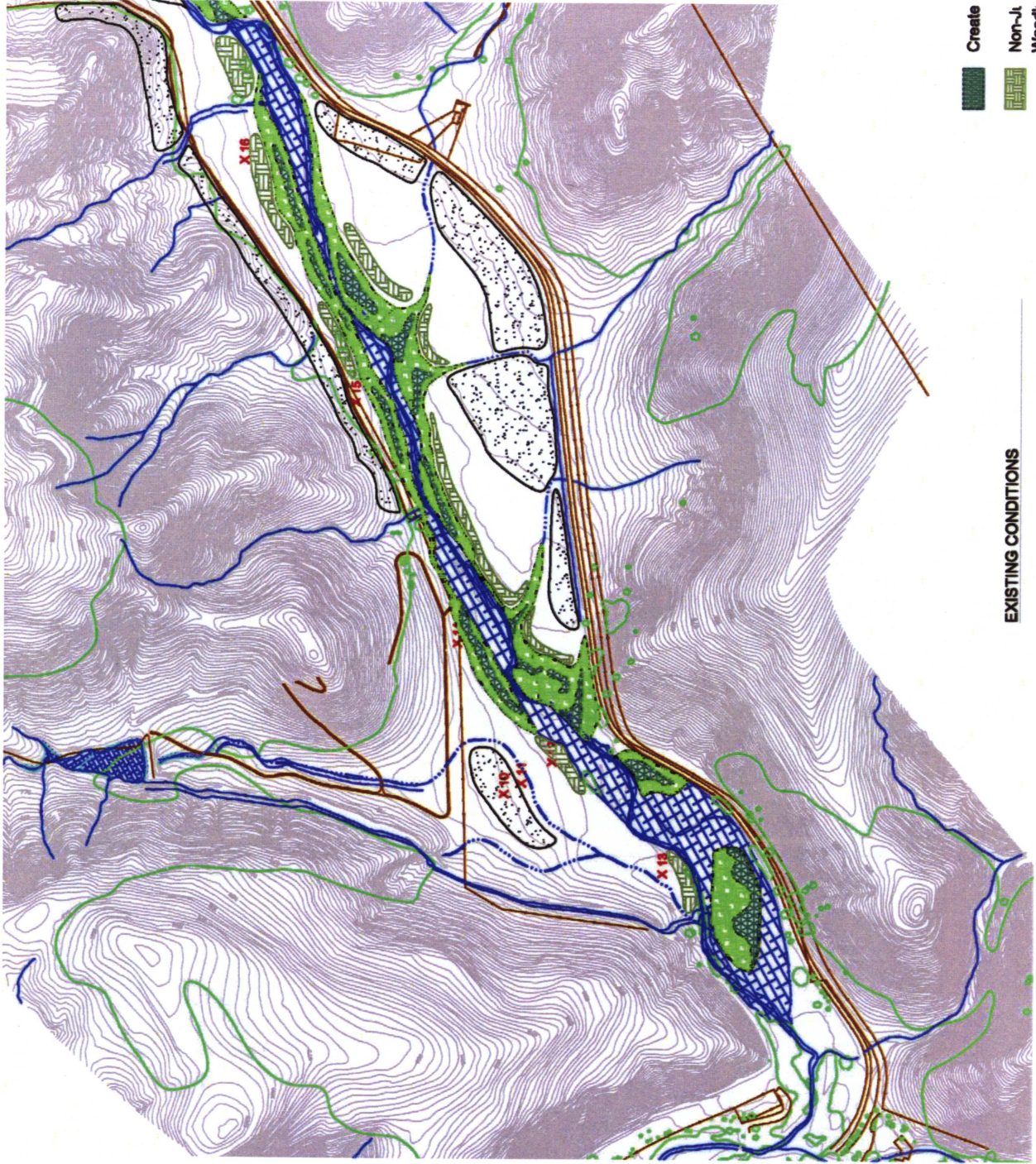
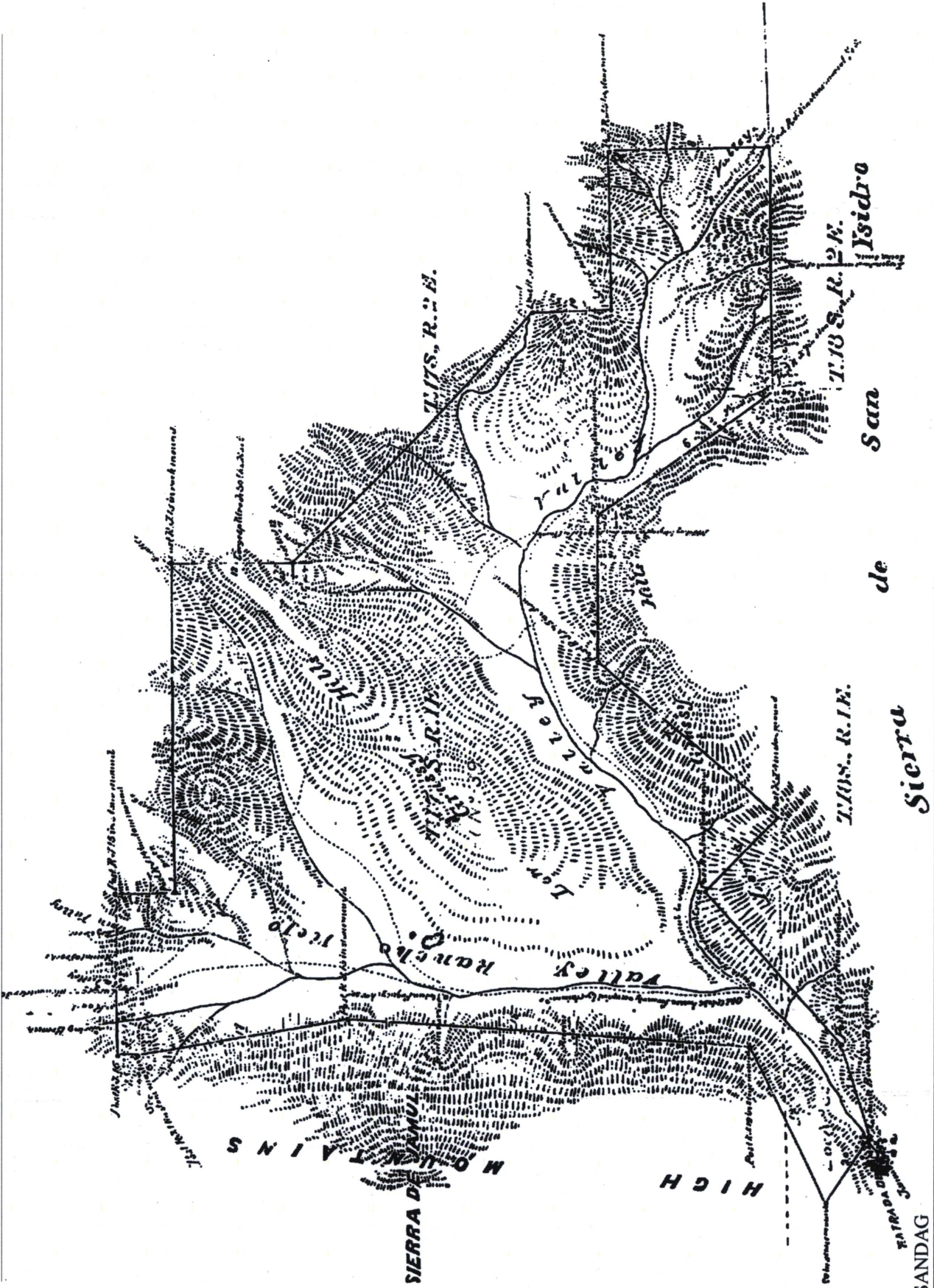


Figure 30f
Dulzura Creek Habitat Restoration Design Diagram





Source: SANDAG



Figure 31
Historic Alignment of Creeks on Rancho Jamul

Habitat Restoration Implementation

Grading. Grading will be conducted by equipment operators that have experience in habitat restoration. Grading plans will be prepared prior to project implementation. Before grading commences, any sensitive areas will be identified and protected with temporary fencing. These areas include known occurrences of sensitive species, special habitat types, and cultural resources sites.

Hydrology. This restoration plan focuses on restoring natural stream gradients, channel configurations, and active floodplains. These actions will increase the area and frequency of flooding and raise adjacent groundwater levels. This change in hydrology will provide the soil moisture necessary for riparian and marsh regeneration in the planned jurisdictional wetland zones.

Reliance on natural hydrology is also a goal for the non-jurisdictional riparian zones and can be accomplished through properly timed installation of cuttings and other propagules. Also, plants in some of the non-jurisdictional areas will be seeded successively over the first three years in order to maximize the potential for establishment during a wet year.

However, in some situations, there may need to be temporary irrigation until the plants are established. This will be accomplished either by hand watering from the adjacent stream or by drip systems tied into the irrigation system of the former agricultural operation. Woody riparian plants seeded on native slopes adjacent to the stream embankments will rely on naturally occurring soil moisture.

Plant Palette. The general approach to revegetation of the jurisdictional areas will be to allow natural colonization to take place. The approach to revegetation of non-jurisdictional oak and riparian zones will be to plant the species currently found in the area that are most likely to flourish in each given site (see Table 7); at the same time we will select plants with an eye to the ultimate stage of plant succession envisioned and the goal of maximizing structural and species diversity. Some the species to be planted will include: California sycamore, coast live oak, Engelmann oak, Fremont cottonwood, mulefat, black willow, red willow, and arroyo willow.

Propagule Collection and Installation. Wildlands will collect plugs, cuttings, and seeds from the existing riparian corridors at or near the site in order to take advantage of the locally adapted genetic material. The cuttings will be installed during the late fall to early winter into the moist soils adjacent to the jurisdictional wetlands and into bare stream embankments.

A proportion of the seeds and acorns will be propagated in a nursery setting and grown in suitable containers for planting out in the fall; these container plants will be planted into the non-jurisdictional riparian zones with the cuttings. The remainder of the seeds will be sown directly into soil on native grades adjacent to the stream embankments.

Plant Protection and Weed Control. Woody plants installed as part of the restoration effort

will be provided with cages, tubes, or screens as appropriate to protect plants from herbivory. Weeds immediately adjacent to the plants will be controlled to reduce competition for light and soil moisture. Weed control will be accomplished through a combination of hand pulling, string trimming, and herbicide applied according to legal standards.

Restoration Performance Standards and Monitoring

Performance standards for the project are summarized in Table 9. Those standards relating to restoration of riparian habitat are currently being refined with assistance from U.S. Geological Service Research Ecologist, Barbara Kus. Specific monitoring procedures are also being developed.

The fundamental components of the monitoring program are:

Measurement of vegetative structural diversity at points along permanent transects using the "stacked cube" method as described in Kus, 1998;

Measurement of vegetative cover and spatial diversity using orthogonally rectified aerial photographs and/or Global Positioning Systems (GPS), combined with ground truthing to characterize species composition (this measurement will also address the establishment of a natural biochemical regime);

Estimation of percent exotic vegetation either through line intercept method or through use of aerial photography with field surveys if feasible;

Estimation of active floodplain by identification of debris lines in the field following flood events to determine if the creek has overbanked;

Characterization of topographic complexity by field description and photography of features at transects; and

Surveys for least Bell's vireo presence and activity (annual); and

Photodocumentation of the site (annual).

Brief annual reports will be submitted that will contain the results of the least Bells vireo surveys, the photodocumentation, and a qualitative summary of revegetation. Full monitoring reports will be submitted in November of years 2, 3, and 5 of the establishment period. These reports will present data, analysis, and findings for all of the monitoring topics listed above.

Table 9: Restoration Performance Standards

Habitat Characteristic	Year 1 Following Construction	Year 2 Following Construction	Year 3 Following Construction	Year 5 Following Construction
Structural Diversity - Riparian Habitat	Colonization/growth by native species representative of at least two height classes (e.g., two representatives from typical tree, shrub, and forb/grass taxa).	Riparian vegetation in at least two patches of restored area occupies two height classes (0-1 meters and 2-3 meters) (1)	Riparian vegetation in at least four patches of restored area occupies two height classes (0-1 meters and 2-3 meters) (1)	Riparian vegetation in at least four patches of restored area occupies at least three height classes (0-1 meters, 2-3 meters, and 3-5 meters) (1)
Coverage & Spatial Diversity - Riparian Habitat	Colonization/growth by native species on at least 30% of the site (15% absolute cover of the riparian portion of the restoration site).	Colonization/growth by native species on at least 40% of the site (20% absolute cover of the riparian portion of the restoration site).	Diverse (2) riparian vegetation covers at least 30% of the restored area, or monotypic riparian vegetation covers at least 50% of the restored area.	Diverse (2) riparian vegetation of between 30% and 75% of the restored area. Evidence of natural recruitment of riparian species
Coverage & Spatial Diversity - Freshwater Wetland Habitat Only	Evidence of colonization/growth by native species on at least 30% of the site (15% absolute cover of the wetland portion of the restoration site).	Evidence of colonization/growth by native species on at least 45% of the site (30% absolute cover of the wetland portion of the restoration site).	50% absolute cover with facultative, facultative-wetland, or obligate species, with vegetative cover by facultative species not exceeding 33% of the wetland jurisdictional area.	70% absolute cover with facultative, facultative-wetland, or obligate species, with vegetative cover by facultative species not exceeding 33% of the wetland jurisdictional area.
Percent of Exotic Vegetation (3)	Cover by exotic species does not exceed 10% relative cover.	Cover by exotic species does not exceed 10% relative cover.	Cover by exotic species does not exceed 7% relative cover.	Cover by exotic species does not exceed 5% relative cover. Control efforts prioritized to eliminate seed source plants for the key targeted species. ²
Use of habitat by least Bell's vireo (4)	No standard	No standard	Least Bell's vireo foraging on the site.	Least Bell's vireo nesting on the site.
Characteristics of the Floodplain	In areas of earthwork, floodplain is unconfined and is at least twice the width of the channel.	In areas of earthwork, floodplain is unconfined and is at least twice the width of the channel.	In areas of earthwork, floodplain is unconfined and is at least twice the width of the channel.	In areas of earthwork, floodplain is unconfined and is at least twice the width of the channel.
Topographic Complexity (5)	No standard	In areas of earthwork, floodplain exhibits microtopographic complexity, such as bars, riffles, pits, and hummocks.	In areas of earthwork, floodplain has micro and macro topographic complexity with such features as pits, ponds, secondary channels, oxbows, hummocks, bars, and riffles.	In areas of earthwork, floodplain has micro and macro topographic complexity with such features as pits, ponds, secondary channels, oxbows, hummocks, bars, and riffles.
Hydrologic Regime	Continuing evidence of riparian processes, including overbank flow, scour, and deposition. Absence of active head cutting.	Continuing evidence of riparian processes, including overbank flow, scour, and deposition. Absence of active head cutting.	Continuing evidence of riparian processes, including overbank flow, scour, and deposition. Absence of active head cutting.	Continuing evidence of riparian processes, including overbank flow, scour, and deposition. Absence of active head cutting.
Non-jurisdictional Riparian Habitat Establishment (6)	Overall density of living woody plants of at least 240 per acre.	Overall density of living woody plants of at least 180 per acre.	Overall density of living woody plants of at least 120 per acre.	Overall density of living woody plants of at least 80 per acre.

1. The patches referred to in this standard are the nodes shown on the restoration diagram; the analog for these nodes is the stand of riparian habitat that exists offsite at the Thousand Trails Campground.

2. Diverse in this context signifies at least three genera of riparian vegetation.

3. The percent exotic vegetation standard only applies to key targeted trees and shrubs, including giant reed, salt cedar, custer team, tree of heaven, and pampas grass (i.e., the stem and tree strata).

Non-native annual grasses and forbs are not included in the evaluation of percent of exotic vegetation.

4. Use of habitat by least Bell's vireo only applies to credits used to offset impacts to that species. Failure to meet this standard will not constrain the use of credits for other wetland or riparian impacts.

5. The topographic complexity criteria shall be evaluated relative to years after the first 5-year flood event or greater following project construction. NOT relative to absolute years following construction.

6. The intent of initial higher density of planting within these standards is to mimic the natural process of high initial seedling establishment transitioning to lower densities at maturity. This standard may be adjusted based on densities measured from habitat analogues on the site or in the immediate area.

Long-Term Management and Monitoring

Grazing Restrictions

The uplands of the site are typical of California grasslands dominated by exotic annuals. Weed control on rangeland sites is often accomplished through grazing, but this practice is not currently planned for use on the Rancho Jamul property by the California Department of Fish and Game (CDFG). If some grazing is utilized in the future for the uplands of the site, any costs and revenues from this activity would accrue to the Department of Fish and Game.

At the current time, grazing still takes place on lands in the vicinity of the study area, including a parcel adjacent to and west of the California Department of Fish and Game property. Effective exclusion of the cattle will require perpetual maintenance of the fencing surrounding the site or some form of fencing along the riparian corridors.

The long-term management vision for protecting the site also requires fencing to dissuade trespassing, off road vehicle use, and other detrimental activities. This too will require ongoing fence inspection and maintenance.

Road and Trail Maintenance

The existing system of unpaved roads will be used to provide access for habitat enhancement and restoration activities and will be maintained to facilitate monitoring and management activities.

Fire Management

Prescribed burning is a technique that can be effective in controlling weedy vegetation in upland areas. The land manager for the mitigation bank will be available to coordinate with the California Department of Fish and Game and the California Department of Forestry and Fire Protection to conduct controlled burns. Factors to be considered in such a program include the appropriate timing of the burning from vegetation management, air quality, and public safety perspectives, as well as potential damage to habitat from fire control vehicles.

Public Access

The California Department of Fish and Game allows public access to the property on a controlled basis. Damage to restoration sites is not anticipated from these groups. The U.S. Border Patrol actively regulates unauthorized access by undocumented individuals. The riparian corridors on the site are likely to serve as trails and hiding places. This will be a factor in damage to newly planted areas. The maintenance at the site will determine the level of damage occurring and determine if some form temporary fencing may be needed in selected areas. Once the riparian vegetation matures, the sensitivity of the site to foot traffic will decline.

Non-Native Species Control

Exotic plant species removal is proposed as part of the habitat restoration work, as described in the Restoration and Management Plan. Additionally, five subsequent years of monitoring and removal will be performed as maintenance without using funds from the endowment fund. Long-term control of tamarisk and other exotic plant species will also be a perpetual requirement. This ongoing control is envisioned to consist of chemical applications, conducted during the spring and fall using Garlon and Rodeo herbicides, as appropriate, applied from backpack sprayers. Non-chemical means of control are acceptable alternatives provided that they are effective.

Brown-headed cowbird monitoring and potential control activities will be continued as necessary based on levels of nest parasitism observed, and the effect on parasitism on productivity of key nesting native bird species. The brown-headed cowbird, which has been documented to have adverse effects on the productivity of least Bell's vireo, has been observed at the Rancho Jamul site. At this time, the extent of the potential parasitism at the site is unknown. Additionally, the degree of benefit stemming from perpetual trapping at sites where the least Bell's vireo populations have increased is not known. Therefore, Wildlands, Inc. proposes to monitor the nests of selected open cup nesting species, such as song sparrow and common yellowthroat that may nest on the site, during the maintenance phase to establish a baseline condition of nest parasitism and nesting pair productivity before a trapping program is initiated.

Long-term cowbird removal, if needed, will be accomplished by trapping birds in modified Australian crow traps. The details of trap placement, baiting, and monitoring will be formulated with input from the wildlife agencies. However, at this time we envision the placement of up to eight traps along the 5.6 miles of creek corridor (Dulzura and Jamul creeks) within the project area; this equates to a spacing of approximately one trap per three quarters mile. The traps would be checked and maintained daily during the core three month breeding period. Trapping would occur every other year. Monitoring nesting productivity of select open cup nesting species would occur every year so that the potential benefits to these species, such as lowered levels of nest parasitism and improved nesting productivity, can be determined; this monitoring may also provide information indicating that brown-headed cowbird trapping could be reduced or discontinued at some point in the future.

Education and Research

The site will offer study and research opportunities to universities and interested groups. Wildlands, Inc. intends to offer annual stipends during the maintenance phase to graduate students at various California universities in order to establish on-site research projects. These projects will be designed to contribute to current understanding of habitat restoration, preservation and management techniques. Other interested organizations, such as the California Native Plant Society, and local land trusts will be welcome to conduct research at the site. The Department of Fish and Game may elect to continue these activities.

The Mitigation Bank could also make local schools aware of the potential for group visits to the site for educational and research purposes. It is envisioned that elementary school visits would be a good way to introduce children to the idea of conservation in general and to riparian habitat specifically. Visits of higher grade levels could also be encouraged. Organizations and educational institutions will coordinate with the land manager and the Department of Fish and Game prior to any site visit or research effort.

Hunting Management

The following management measures will be undertaken to assure compatibility between hunting programs at the site and wildlife use of the mitigation bank restored habitats.

1. No hunting will be allowed within the riparian/wetland habitats of the Rancho Jamul Mitigation Bank.
2. No hunting will be allowed during the breeding season (March 15 to August 30).
3. CDFG will control numbers of hunters and times of hunts to minimize the effects on nongame species.
4. CDFG will implement an education program for hunters at the Rancho Jamul Ecological Reserve emphasizing areas excluded from hunting because of environmental sensitivity.
5. Upland game hunting is the primary type of hunting anticipated. In addition, "put and take" hunts involving pheasants will also occur, but in old agricultural areas removed from the Jamul Creek and Dulzura Creek areas.
6. All special hunts will have general on-site supervision by CDFG personnel to assure compliance with limits/constraints on hunting.
7. No hunting will take place within a 200-foot buffer zone from the wetland bank areas, with this non-hunting zone being marked with signs. The first 100-foot zone from the wetland areas will be a total exclusion zone for hunting. The second 100-foot zone will exclude hunters from entering to hunt, but will permit retrieval of downed game that falls within this zone. The buffer areas will only be applied to areas of the bank where wetland habitat is created or enhanced, excluding the intermittent drainages that are shown on the restoration plans as narrow tributaries to the main creeks.
8. No hunting will occur between Dulzura Creek and Otay Lakes Road (for public safety reasons), which in most areas would create a buffer zone well in excess of 200 feet.
9. The Rancho Jamul Ecological Reserve property was purchased by CDFG primarily for conservation of sensitive habitat and species. Hunting, as well

as other recreational activities on the property, are and will continue to be strictly controlled so that the overall ecological values of the property are protected.

10. The above management measures will be incorporated into the Rancho Jamul Ecological Reserve Management Plan, which is currently under development by CDFG.

Chapter 4: Mitigation Bank Credits and Service Area

Summary of Credits

The restoration and conservation of habitat on the site provides the basis for assigning mitigation credits to the Mitigation Bank. There are five categories of credits based on the type of mitigation they provide, as summarized in Table 10 and described in the paragraphs that follow.

Table 10: Summary of Proposed Habitat Credits at the Rancho Jamul Mitigation Bank

Habitat Type	Acres		
	Phase I	Phase II*	Total
Corps Jurisdictional Freshwater Wetlands/Waters of the U.S.	11.20	5.33	16.53
Corps Jurisdictional Riparian Habitat	32.70	21.31	54.01
Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters	1.68	0	1.68
Corps Jurisdictional Enhancement Credits (for temporary impacts)	8.02	0	8.02
Non-Corps Jurisdictional Oak/Riparian Habitat	16.60	12.16	28.76
Total	70.20	38.80	109.00

* Phase II acreage is based on conceptual planning and will be revised as detailed plans are developed.

Corps Jurisdictional Freshwater Wetlands/Waters of the U.S. Mitigation Credits

Corps jurisdictional freshwater wetlands/waters mitigation credits provide compensatory mitigation for impacts to freshwater wetlands and waters of the U.S. regulated under Section 404 of the Clean Water Act. Freshwater wetlands are characterized by herbaceous marsh vegetation. There are 11.2 freshwater wetland credits within Phase I and 5.33 credits planned for Phase II.

Corps Jurisdictional Riparian Habitat Mitigation Credits

As in the case of the freshwater wetland credits described above, this category of riparian credits provides compensatory mitigation for impacts regulated under Section 404 of the Clean Water Act. The distinction is that this wetland type is dominated by woody vegetation. There are 32.7 jurisdictional riparian credits within Phase I and 21.31 credits planned for Phase II.

Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters

Ephemeral/intermittent wetlands/waters of the U.S. mitigation credits provide compensation for impacts under Section 404 of the Clean Water Act. These credits are intended to mitigate for impacts to ephemeral swales and intermittent creeks that are tributary to perennial streams. There are 1.68 ephemeral/intermittent wetlands/waters credits, all within Phase I.

Corps Jurisdictional Enhancement Credits

Enhancement of existing wetland habitat will generate a total of 8.02 credits, all currently planned to occur within Phase I of the project. These credits can only be used to mitigate for temporary impacts regulated under Section 404 of the Clean Water Act.

Enhancement credits have been assigned based on exotic species removal and control proposed outside of the creek reaches where habitat creation/restoration will take place. Enhancement immediately adjacent to areas of planned creation/restoration is not assigned credits, because this work is considered to be a part of the restoration, for which credit is already being assigned.

Phase II of the banking project may result in the allocation of additional credits of different types. Some of these credits may be for additional restoration/creation and some may be for enhancement based on streambed stabilization and creekbed profile restoration. However, following the logic described in the above paragraph, enhancement credits will not be provided for a reach for which enhancement credits have already been allocated or where adjacent habitat restoration/creation will take place. The principal location where this potential for overlapping credits exists is at and around the confluence of Jamul Creek with its primary onsite tributary. Credits will have been already allocated to this confluence area for exotic species removal prior to Phase II. In order to avoid overlapping credits, the number of credits assigned to the tributary area will be deducted, either from any remaining inventory of Phase I enhancement credits, or from the restoration/creation credits being assigned as part of Phase II. The following list summarizes this deduction process under three possible future scenarios.

1. No Phase II (Wildlands elects to not implement Phase II or the agencies do not approve it) - No deduction of enhancement credits is needed since no credit overlapping will occur.
2. Phase II is implemented prior to the full use of Phase I enhancement credits - The number of enhancement credits assigned to the confluence area as part of Phase I will be deducted from the total remaining balance of Phase I enhancement credits (the balance is the number not expended to compensate for impacts).
3. Phase II is implemented after the use of Phase I enhancement credits - The number of enhancement credits assigned to the confluence area as part of Phase I will be deducted from the total number of credits to be provided as part of the Phase II restoration/creation effort.

Non-Corps Jurisdictional Oak/Riparian Habitat

A total of 16.6 oak and riparian habitat credits is assigned to Phase I of the project, with an

additional 12.16 credits envisioned for Phase II. These credits cannot be used to compensate for impacts regulated under Section 404 of the Clean Water Act, but may be used for mitigation under the California Environmental Quality Act, Section 1600 of the Fish and Game Code, and local policies and ordinances.

Phasing of Credits

All of the Phase I creation/restoration credits will be allocated as follows: 15% upon approval of the Bank Enabling Instrument, 65% by completion of restoration grading and planting and posting of financial guarantees, and 20% upon attainment of year 3 performance standards (note: credits may be released by year 2 if the year 3 performance standards are met). All of the enhancement credits be allocated upon completion and acceptance of the enhancement work.



Service Area

The Service Area will be based on drainage into the Pacific Ocean at San Diego Bay and Mission Bay. Figure 32 and the following paragraphs describe the accepted service area:

- 1) The area draining into San Diego Bay, including the Otay River, Sweetwater River, and Chollas Creek watersheds, for all in-kind mitigation of impacts to wetlands/waters of the U.S., and
- 2) The area draining into Mission Bay, including the San Diego River, Rose Creek, San Clemente Creek, and Tecolote Creek watersheds, for all in-kind mitigation in excess of 1:1 replacement for freshwater wetland, intermittent waters, and temporary impacts, or 2:1 replacement for jurisdictional riparian habitat.

Figure 32
 Rancho Jamul Mitigation Bank Service Area



-  Mitigation for all In-Kind Impacts
-  All In-Kind Mitigation beyond In-Watershed Replacement*

*In-Watershed Replacement is:
 2:1 for Riparian Habitat
 1:1 for other In-Kind Habitats

- TYPES OF MITIGATION:
- Corps Jurisdictional Freshwater Wetlands/Waters of the U.S.
 - Corps Jurisdictional Riparian Habitat
 - Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters
 - Corps Jurisdictional Enhancement Credits (for temporary impacts)
 - Non-Corps Jurisdictional Oak/Riparian Habitat
 - Least Bell's Vireo Habitat



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Appendices

Appendix A: Hydrology and Cross-sections of Jamul and Dulzura Creeks

Appendix B: Biological Resources Report and Constraints Analysis for the Rancho Jamul
Mitigation Bank Project

Appendix C: Wetland Delineation Verification Letter

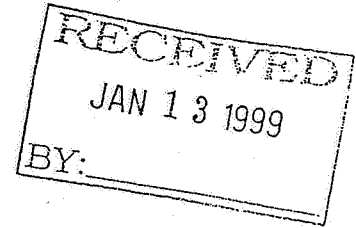
Appendix A:
Hydrology and Cross-Sections of
Jamul and Dulzura Creeks

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sacramento
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edmonton
seattle

Greg Sutter
Wildlands, Inc.
5731 Manzanita Avenue
Carmichael, CA 95608



January 11, 1999

Subject: Restoration Approach, Rancho Jamul

Dear Mr. Sutter:

In May 1998, a river geomorphologist and water resources engineer from Northwest Hydraulic Consultants (NHC) visited the Rancho Jamul project area with you to conduct a field reconnaissance of Jamul and Dulzura Creeks. The purpose of our visit was to consider various strategies to create and restore wetland and riparian habitat on the site from a hydrologic and geomorphic perspective. Both streams appear to offer excellent opportunities for creation of new habitat. Since our site visit, we have had several discussions with Wildlands regarding the best strategy for creation of new or expanded wetland and riparian areas on the site, and the hydrologic constraints that may influence this work.

The best opportunities for wetland creation appear to exist on Dulzura Creek and on the downstream part of Jamul Creek. In these areas the creek channel is not deeply incised, and there are existing wetland areas and active floodplain outside the main channel. Opportunities apparently exist to expand these existing wetlands and to create new wetlands by increasing the frequency and duration of inundation of the active floodplain. Upper Jamul Creek is more deeply entrenched, and significant wetland or riparian restoration will require more work to effect the change in hydrologic regime necessary to restore or create significant new areas of wetland and riparian habitat. It is our experience that creation of suitable physical and hydrologic conditions are the key in developing new wetland and riparian habitat. In spite of the challenges on upper Jamul Creek, we feel that opportunities exist for new habitat throughout the site.

Modifications of the project area's hydrologic characteristics for the purpose of supporting new habitat might be accomplished in several ways, many of which we have discussed in our meetings with Wildlands. Possibilities include modification and management of the existing reservoir and ditch facilities to provide a reliable water supply for constructed habitat areas; and construction of check dams on the streams to create ponds or flood riparian areas. The disadvantage to either of these concepts is that they rely on artificial manipulation of the hydrologic system, which necessarily involves a relatively high level of structural change and maintenance. In addition, the use of check

50153\apprlet.doc

dams or other structures in the creek presents potential problems with the transport of sediments through the system, which could lead to channel stability problems. NHC suggests that, wherever possible, wetland and riparian habitat creation for the site focus instead on restoration of natural hydrologic and geomorphic processes. The potential advantages of this approach include :

- 1) avoidance of problems that might develop due to interference with conveyance of water or sediment in the active creek channels;
- 2) development of habitat areas that are self-sustaining, requiring little or no maintenance;
- 3) flexibility in allowing the evolution of habitat over time; and
- 4) natural recovery from extreme hydrologic variations such as flood and drought.

While a greater total area of habitat might be constructed with a more structural approach, NHC feels that the recommended approach would be more successful in functionally restoring normal hydrologic and geomorphic processes on the site, which in turn would support greater biological value.

Adoption of this approach requires a better understanding of the site hydrology, stream hydraulics, and fluvial geomorphic processes. The site has a long history of disturbance, and complete restoration of 'natural' or pre-disturbance conditions is probably not achievable or desirable given present watershed and site conditions. However, there do appear to be significant opportunities for restoring functional floodplain and wetland areas on the site through a combination of stream management, channel stabilization, and floodplain grading techniques. A primary objective of this approach would be to reduce the degree of stream entrenchment over much of the site, thus allowing small to moderate flood flows to reach an active floodplain surface. This concept applies to both the main channels and smaller tributaries, which could be important sources of water for seasonal wetland and riparian areas.

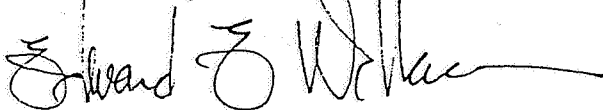
The hydrologic and engineering analysis required to confirm the feasibility of this approach include:

- field survey of selected channel and floodplain cross sections to document existing channel and floodplain geometry
- development of fundamental hydrologic relationships such as a flow-frequency relationship for each creek
- investigation of watershed influences on hydrologic and geomorphic processes, such as land use and water diversions

- development of preliminary channel hydraulic characteristics in each stream reach
- combination of hydrologic and hydraulic information to develop stage-frequency relationships for each channel reach under existing conditions
- preliminary sediment transport calculations to assess sediment routing through the site and its effect on stream morphology
- combination of field survey, hydrologic, hydraulic, and sediment transport information in a geomorphic assessment of the channels to identify guidelines and/or criteria for restoration of functional floodplain and wetland areas

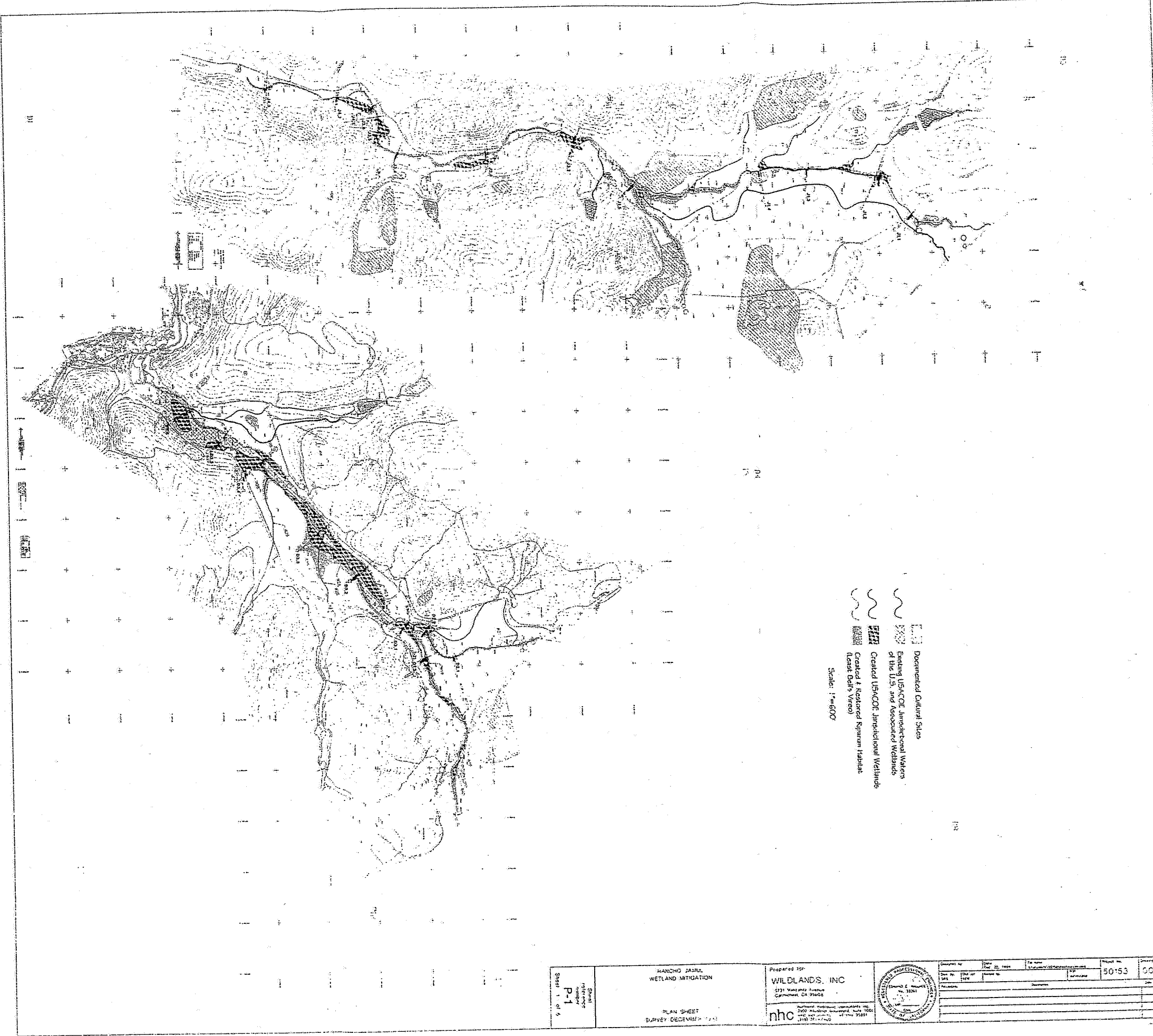
The initial field survey work has already been completed, and much of the remaining work is outlined in the draft scope of services we have recently provided to Wildlands. We look forward to working with Wildlands in developing this approach and applying it to successful wetland and riparian habitat restoration on the site.

Sincerely,
Northwest Hydraulic Consultants

A handwritten signature in black ink, appearing to read "Edward E. Wallace", with a long horizontal flourish extending to the right.

Edward E. Wallace, P.E.

Appendix B:
Biological Resources Report and Constraints
Analysis for the
Rancho Jamul Mitigation Bank Project



Documented Cultural Sites

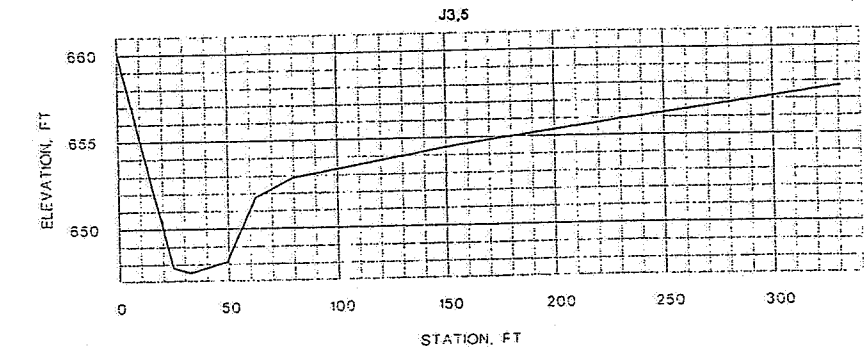
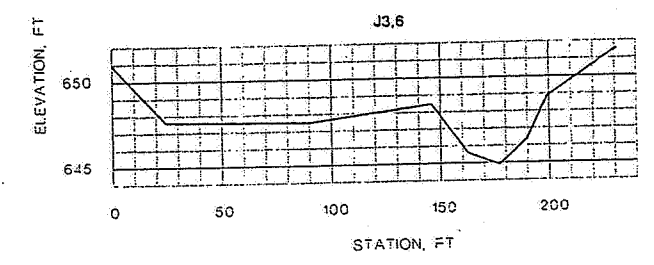
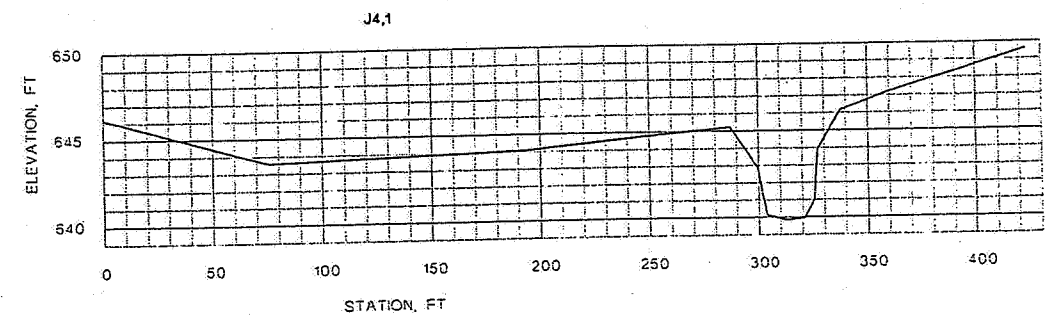
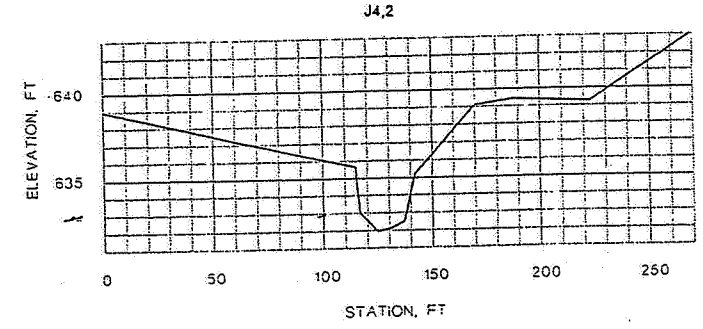
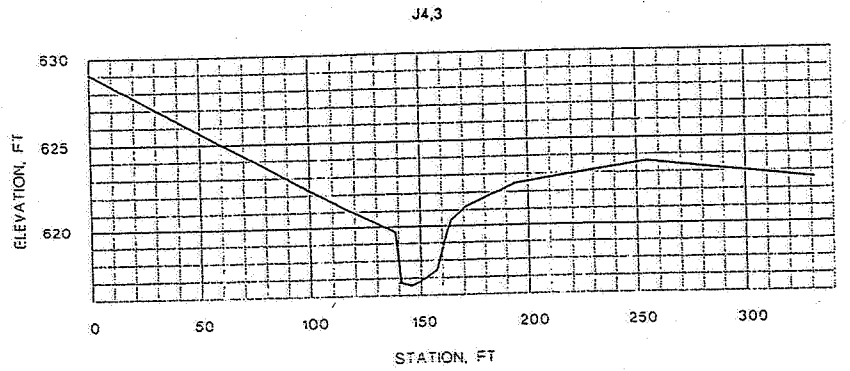
 Existing USACE/Joint/Regional Waters of the U.S. and Associated Wetlands

 Created USACE/Joint/Regional Wetlands

 Created & Restored Riparian Habitats (Lentic Oars Vines)

 Scale: 1"=600'

Sheet P-1 of 5	RANCHO JASAL WETLAND MITIGATION PLAN SHEET SURVEY DECEMBER 2015	Prepared for: WILDLANDS, INC 2721 Mariposa Avenue Carmichael, CA 95608 	Checked by: _____ Date: _____ Drawn by: _____ Date: _____ Project: _____	Project No.: 50153 Drawing No.: 0001
				Date: _____ Scale: _____



PRELIMINARY
NOT FOR CONSTRUCTION

V: 1" = 5'
H: 1" = 40'

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Checked by:		Reviewed by:		Description:	
SWS		EHW		J.M.	

Prepared for:
WILDLANDS, INC.
5731 Menzies Avenue
Carmichael, CA 95608

Professional Engineer
EDWARD S. WILSON
No. 1000
REGISTERED PROFESSIONAL ENGINEER - CIVIL
STATE OF CALIFORNIA

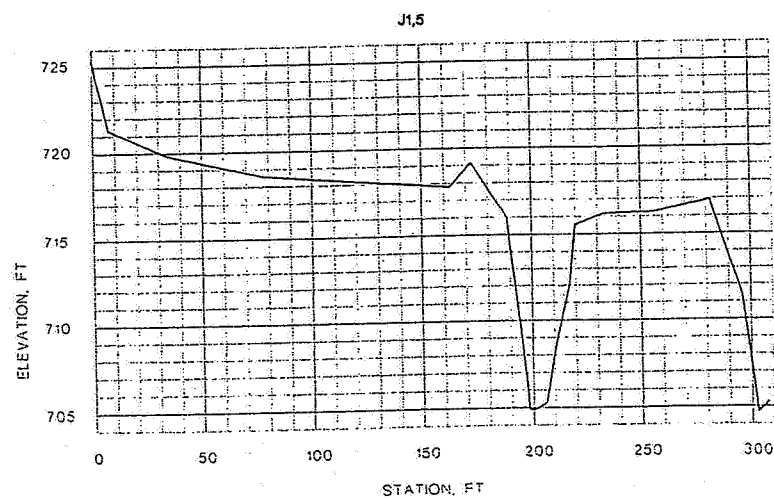
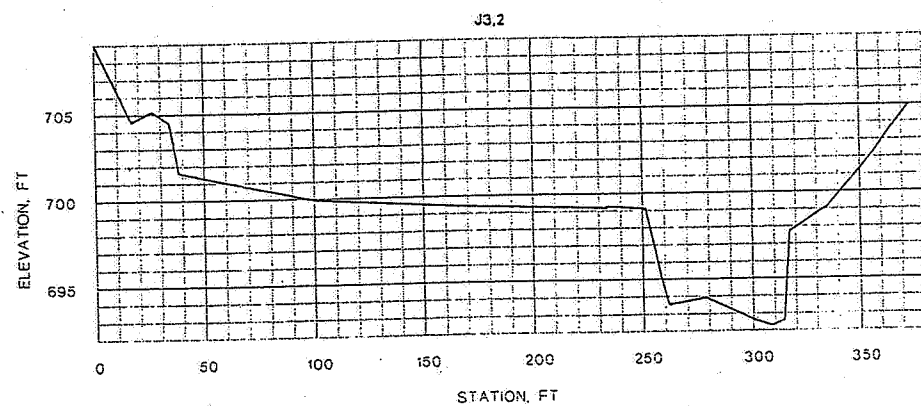
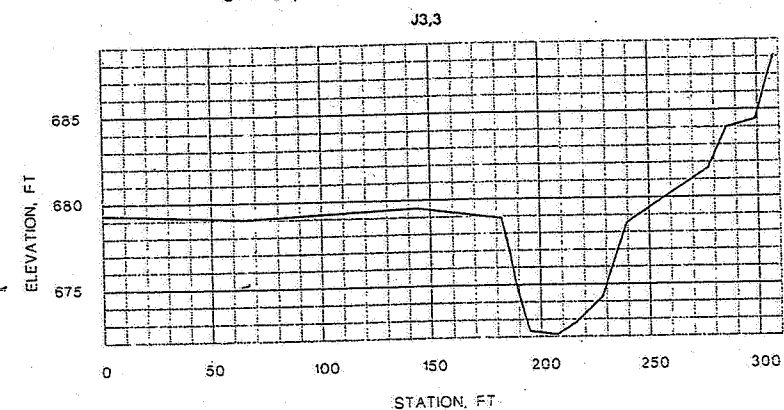
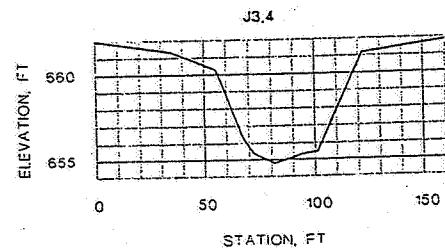
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nhc

RANCHO JAMUL
WETLAND MITIGATION

JAMUL CREEK CROSS SECTIONS
SURVEY DECEMBER 1988

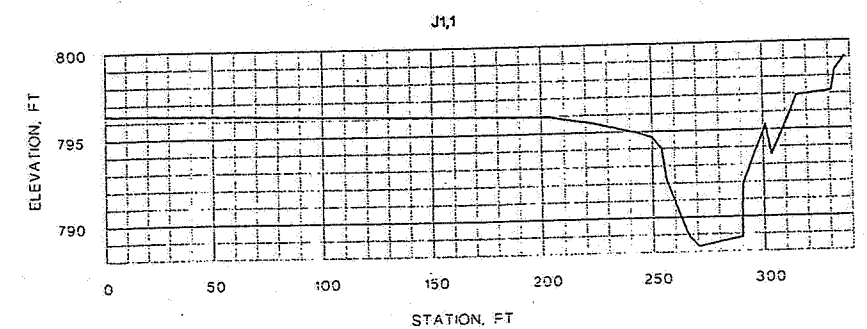
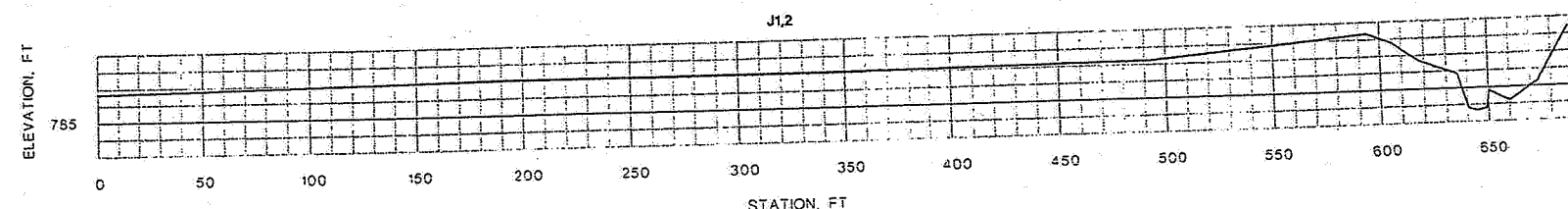
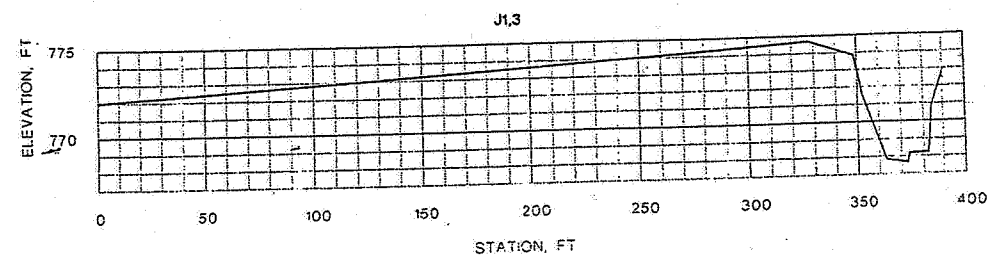
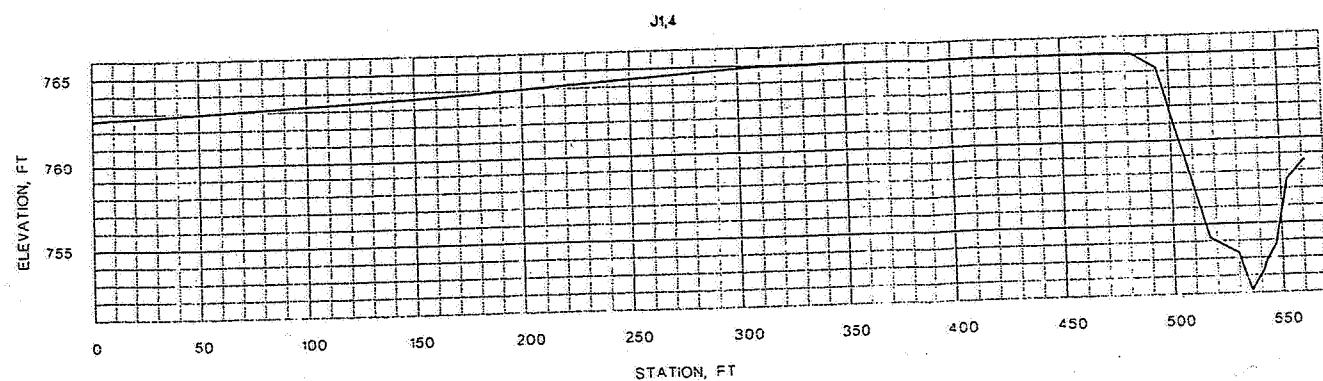
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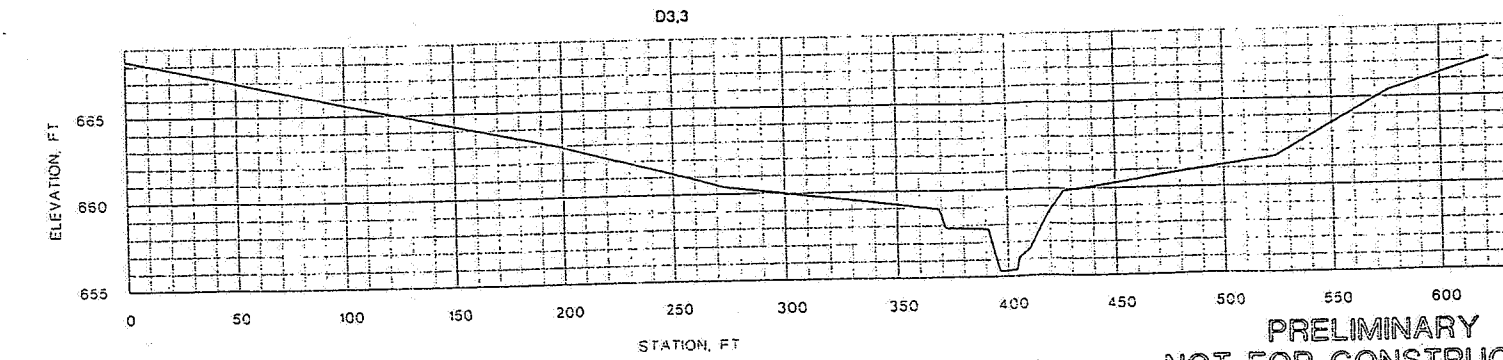
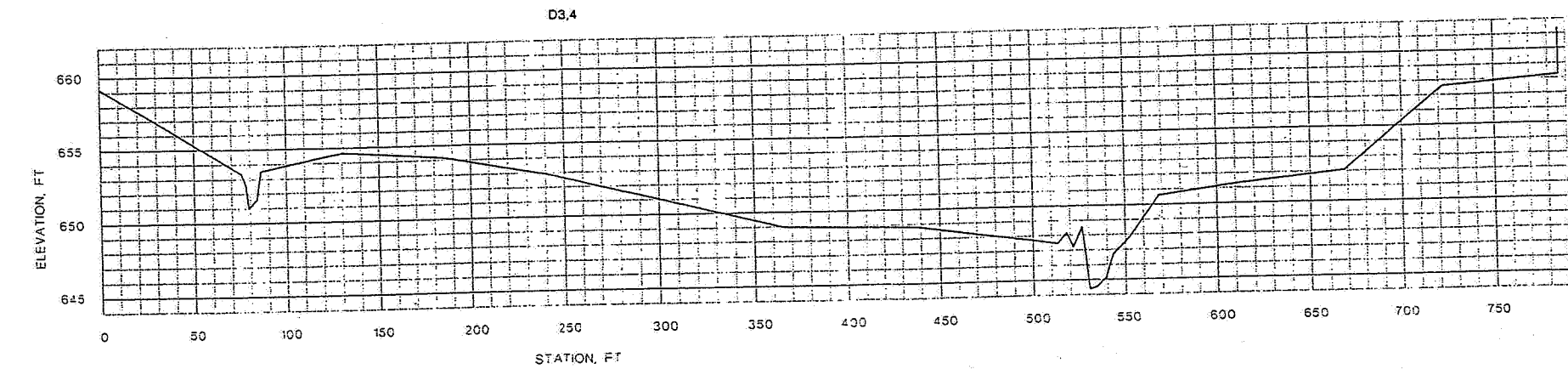
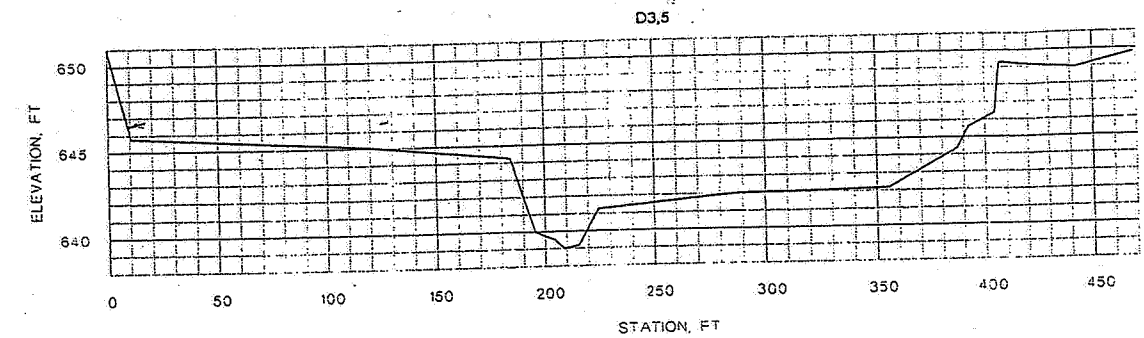
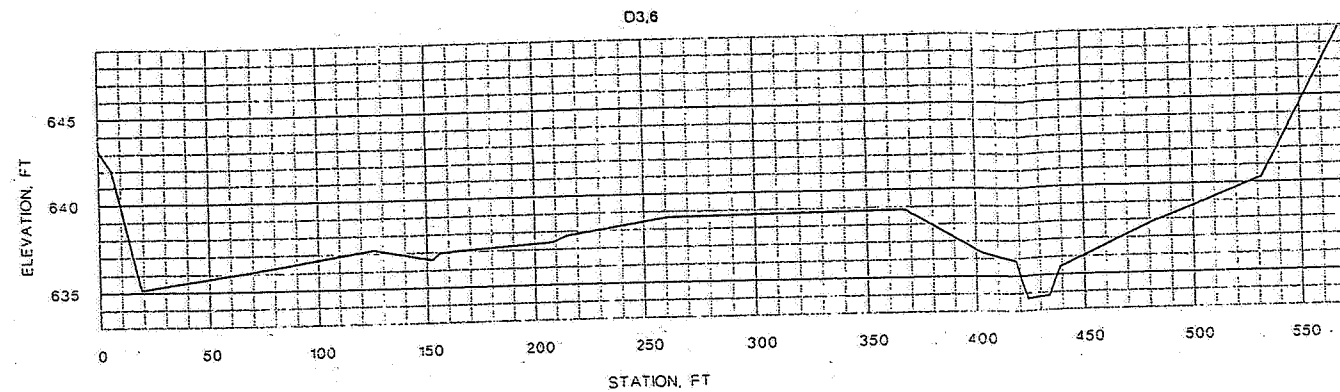
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	Prepared by: Edward W. Pace, License No. 14242, State of California nhc 1000 West Sacramento Blvd., Sacramento, CA 95834 (916) 371-7400		
RANCHO JAMUL WETLAND MITIGATION		JAMUL CREEK CROSS SECTIONS SURVEY DECEMBER 1998	
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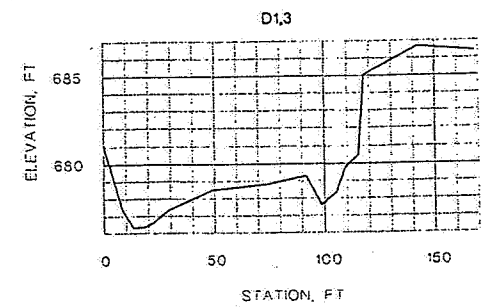
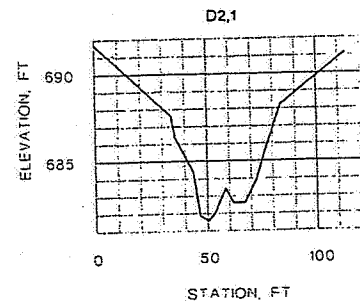
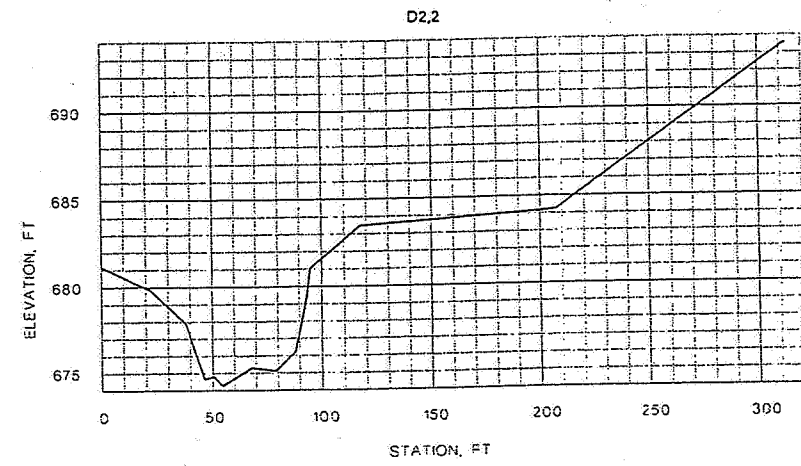
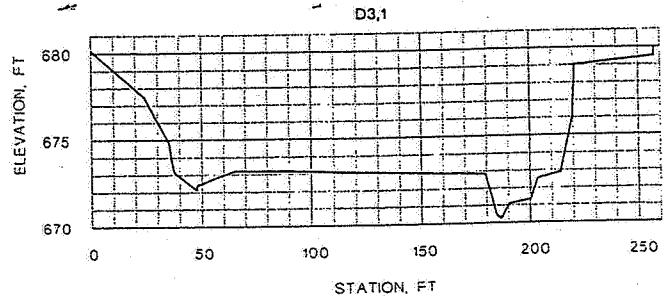
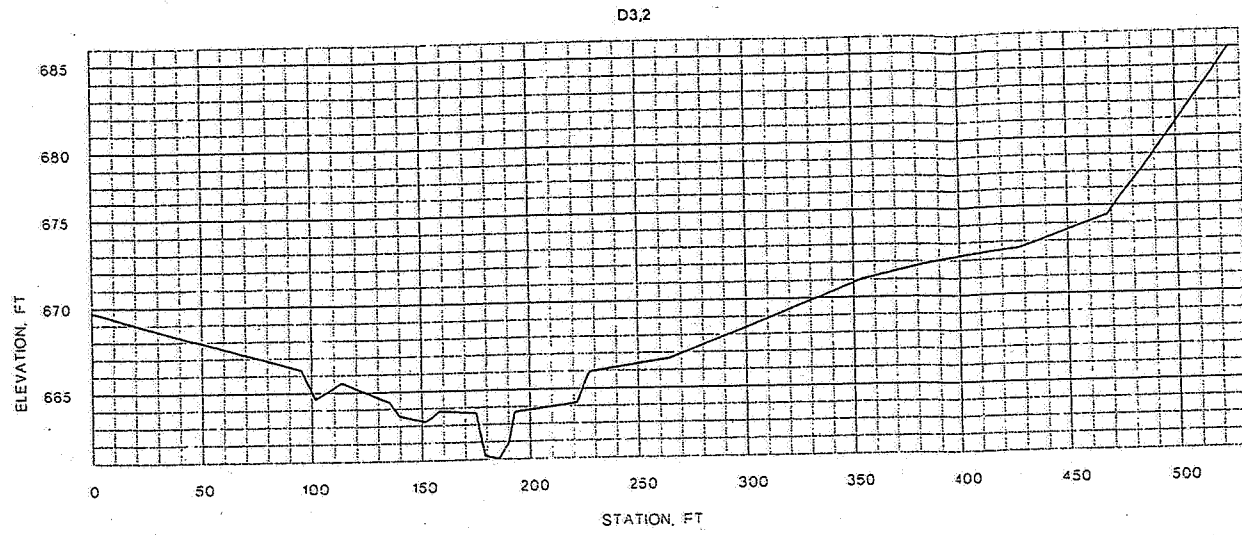
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Prepared by: 	
northwest hydraulic consultants inc. 3950 Industrial Boulevard, Suite 100 West Sacramento, California 95991 (916) 371-7400	
RANCHO JAMUL WETLAND MITIGATION JAMUL CREEK CROSS SECTIONS SURVEY DECEMBER 1998	
Sheet reference number S-3 Sheet 4 of 6	



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Prepared for: WILDLANDS, INC. 5731 Mariposa Avenue Carmichael, CA 95608 northwest hydraulic consultants inc. 3950 Industrial Boulevard, Suite 100 West Sacramento, California 95691 (916) 371-7400 nhc			
RANCHO JAMUL WETLAND MITIGATION		DULZURA CREEK CROSS SECTIONS SURVEY DECEMBER 1998	
Sheet reference number S-4			
Sheet 5 of 6			



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Contract Description		Professional Engineer	EDWARD S. JAMUL No. 1000 California State Board of Engineers
Contract Date	Dec. 22, 1998	Professional Seal	
Contract Location		Prepared by	nhc
Contract No.		Checked by	
Contract No.		Reviewed by	
Contract No.		Approved by	
Contract No.		Date	
Contract No.			

RANCHO JAMUL
WETLAND MITIGATION
DUZURA CREEK CROSS SECTIONS
SURVEY DECEMBER 1998

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Sheet 6 of 6

DRAFT
BIOLOGICAL RESOURCES REPORT
AND
CONSTRAINTS ANALYSIS
for the
RANCHO JAMUL MITIGATION BANK PROJECT
Jamul, County of San Diego, California

Prepared for:

WILDLANDS, INC.
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October 1998

Biological Resources Report & Constraints Analysis
Rancho Jamul Mitigation Bank Project

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Biological Resources Report & Constraints Analysis
Rancho Jamul Mitigation Bank Project

SUMMARY OF FINDINGS

The proposed Rancho Jamul Mitigation Bank project study area occupies approximately 2,187 acres of open land along Jamul Creek and Dulzura Creek, extending south and southwest, respectively, from Highway 94 in San Diego County, California. Otay Lakes Road parallels the Dulzura Creek corridor. The survey emphasis was on the wetland delineation and threatened and endangered species of animals and plants in and very near the riparian areas, with increasingly less emphasis farther from the streams. Based on species composition and general physiognomy, eleven native plant communities or habitat types including disturbed forms were identified onsite: coastal sage scrub (1,104.7 acres), disturbed coastal sage scrub (117.3 acres), live oak woodland (8.5 acres), valley needlegrass grassland (0.3 acre), cismontane alkali marsh (1.5 acres), disturbed cismontane alkali marsh (0.3 acre), freshwater marsh (10.1 acres), mule fat scrub (11.6 acres), disturbed mule fat scrub (0.3 acre), southern willow scrub (16.0 acres) and disturbed southern willow scrub (5.0 acres). Four altered or non-native habitat types are present: disturbed habitat (8.2 acres), ruderal habitat (875.4 acres), annual (non-native) grassland (7.9 acres) and developed land (13.4 acres). In addition, jurisdictional waters of the United States (0.7 acre) and open waters (6.7 acres) were mapped.

Several plant species listed as sensitive by the California Native Plant Society (CNPS) were observed within the Jamul Creek corridor: southwestern spiny rush (*Juncus acutus* var. *leopoldii*), San Diego County viguiera (*Viguiera laciniata*), San Diego marsh-elder (*Iva hayesiana*), Coulter's matilija poppy (*Romneya coulteri*) and ashy spike-moss (*Selaginella cinerascens*). No plants listed by the California Department of Fish and Game or the U.S. Fish and Wildlife Service as rare, threatened or endangered were observed within either project corridor.

One animal species listed as threatened by the United States Fish and Wildlife Service (USFWS) has been observed within the Jamul Creek project corridor: coastal California gnatcatcher (*Poliophtila californica californica*). One animal species listed as endangered by the USFWS and the California Department of Fish and Game (CDFG) was observed within both project creek corridors: least Bell's vireo (*Vireo bellii pusillus*). Several other bird species observed onsite are considered sensitive by various resource agencies: northern harrier (*Circus cyaneus*), rufous-crowned sparrow (*Aimophila ruficeps*), yellow-breasted chat (*Icteria virens*) and yellow warbler (*Dendroica petechia*).

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

1.0 INTRODUCTION

The proposed Rancho Jamul Mitigation Bank project consists of two study areas located along Jamul Creek and Dulzura Creek, extending south and southwest, respectively, from Highway 94 in San Diego County, California. The Jamul Creek corridor occupies 1,099 acres and the Dulzura Creek corridor occupies 1,087 acres. Biological surveys were conducted in May, June, July and August of 1998. This report includes the results of these surveys.

The purposes of this report are to describe the biological character of the project corridors in terms of vegetation, flora, wildlife, and wildlife habitats; to analyze the biological significance of the site in view of federal, state, and local laws and policies; and to assess the biological constraints of the uplands adjacent to the riparian corridors.

2.0 METHODS AND SURVEY LIMITATIONS

Data regarding biological resources present on the project site were obtained through a review of pertinent literature and through field reconnaissance. Both are described in detail below.

2.1 Literature Review

Sensitive biological resources present or potentially present onsite were identified through a literature search using the following sources: U.S. Fish and Wildlife Service (1989, 1990, 1991, 1993), California Department of Fish and Game (1980, 1986, 1987), California Native Plant Society's Inventory of Rare and Endangered Vascular Plants (Skinner and Pavlik 1994), California Natural Diversity Data Base (Rarefind 1997), Murphy (1990) and the vegetation and sensitive species mapping performed for the City of San Diego's Multiple Species Conservation Program. General information regarding wildlife species present in the region was obtained from Unitt (1984) for birds, Bond (1977) for mammals, Stebbins (1985) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies.

2.2 Field Reconnaissance

Recent biological surveys of the property were conducted by biologists Sherri Miller (SLM), Brock A. Ortega (BAO) and Harold A. Wier (HAW) of DUDEK and Renee Owens (RYO), a subconsultant to DUDEK. These surveys were conducted according to the schedule illustrated in *Table 1*. Surveys were conducted predominantly by foot, with a small amount of vegetation polygon checking done by vehicle.

**Biological Resources Report & Constraints Analysis
Rancho Jamul Mitigation Bank Project**

**TABLE 1
BIOLOGICAL SURVEY SCHEDULE**

Date	Personnel	Hours	Weather Conditions			
Toad Surveys						
			Moon Phase	Air/Water Temp (F)	Wind Speed (MPH)	Cloud Cover (%)
5/26/98	BAO	1930-2400	New Moon+1	50-47/62	0	0
5/27/98	BAO	1930-2400	New Moon+2	53-48/62	0-3	60
5/28/98	BAO	1900-2400	New Moon+3	50-48/63	0	80
5/30/98	BAO	1930-2400	New Moon+5	52/63	0	80
5/31/98	BAO	1930-2400	New Moon+6	55-51/63	0-2	30
6/4/98	BAO	1900-2400	Full Moon - 5	53-50/62	0-2	0
Bird Surveys and Vegetation Mapping						
5/28/98	RYO	0630-1130	Overcast to clear, 68-78F			
5/30/98	RYO	0630-1130	Moderately overcast to clear, 70-78F			
6/6/98	RYO	0630-1530	Overcast, 72-84F			
6/13/98	RYO	0600-1400	Overcast, 65-75F			
6/14/98	HAW	0700-1100	Overcast, +70F			
6/25/98	RYO	0700-1500	Overcast to clear, 75-85F			
7/4/98	RYO	0730-1430	Moderately overcast to clear, 75-88F			
7/17/98	RYO	0800-1500	Moderately overcast to clear, 78-91F			
7/24/98	RYO	0730-1530	Moderately overcast to clear, 78-90F			
7/24/98	HAW	0700-1400	see above			
Wetland Delineation						
7/24/98	SLM	0700-1400	see above			
7/27/98	SLM	0800-1500	Overcast to clear, 75-94F			
8/5/98	SLM	0730-1500	Overcast to moderately overcast, 75-96F			

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

2.2.1 Resource Mapping

Existing wetland plant communities were mapped in the field directly onto 200-scale (1"=200') topographic maps; upland plant communities were mapped in the field onto clear acetates on 1,275-scale (1"=1,275') aerial photographs of the area obtained from Aerial Fotobank, dated June 23, 1998. Vegetation boundaries were then transferred onto a 200-scale topographic map of the site. The vegetation boundaries and locations of sensitive species were digitized by DUDEK GIS technician Martie Clemons using the ArcCAD system.

Plant community classifications used in this report follow Holland (1986), with modifications to accommodate the lack of conformity of the observed communities to those of Holland. Locations of rare or sensitive plant and wildlife species also were mapped.

A delineation of "waters of the United States" and wetlands under the jurisdiction of the U. S. Army Corps of Engineers (ACOE) and California Department of Fish and Game (CDFG) was conducted in April 1998, of all areas of the property. The ACOE jurisdictional wetland delineation was conducted in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (TR Y-87-1); hydrology, vegetation, and soils were examined at potential wetland sites. The dimensions of non-wetland jurisdictional areas (i.e., incised channels with no wetland vegetation) were transferred to the topographic base as linear features. The extent of wetland features was determined in the field by pacing, direct measurement or aerial photo interpretation; these shapes were transferred to the topographic base, and digitized into an ArcCAD file. See the Wetland Delineation Drawings in the attached map pockets. The onsite wetlands are primarily associated with Jamul Creek and Dulzura Creek; however, a number of ephemeral stream channels and stock ponds were mapped as jurisdictional as well.

2.2.2 Flora

All plant species encountered during the field surveys were identified and recorded. Those species that could not be identified immediately were brought into the laboratory for further investigation. Latin and common names of plants follow the Jepson Manual (Hickman 1993). Where not listed in Hickman (1993), common names are taken from Beauchamp (1986) or Abrams (1923). A cumulative list of plant species observed on the property during the survey is presented in *APPENDIX A*.

2.2.3 Fauna

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded. In addition to species actually observed, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area.

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

Latin and common names of animals follow Stebbins (1985) for reptiles and amphibians, American Ornithologists' Union (1983, 1989) for birds, Jones et al. (1992) for mammals.

2.2.4 Sensitive Biological Resources

Sensitive biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (4) wildlife corridors and habitat linkages.

The primary purpose of the recent field survey was to assemble a biological resources inventory, to determine the extent of those resources and to assess impacts resulting from previous, current and proposed land uses.

2.3 Survey Limitations

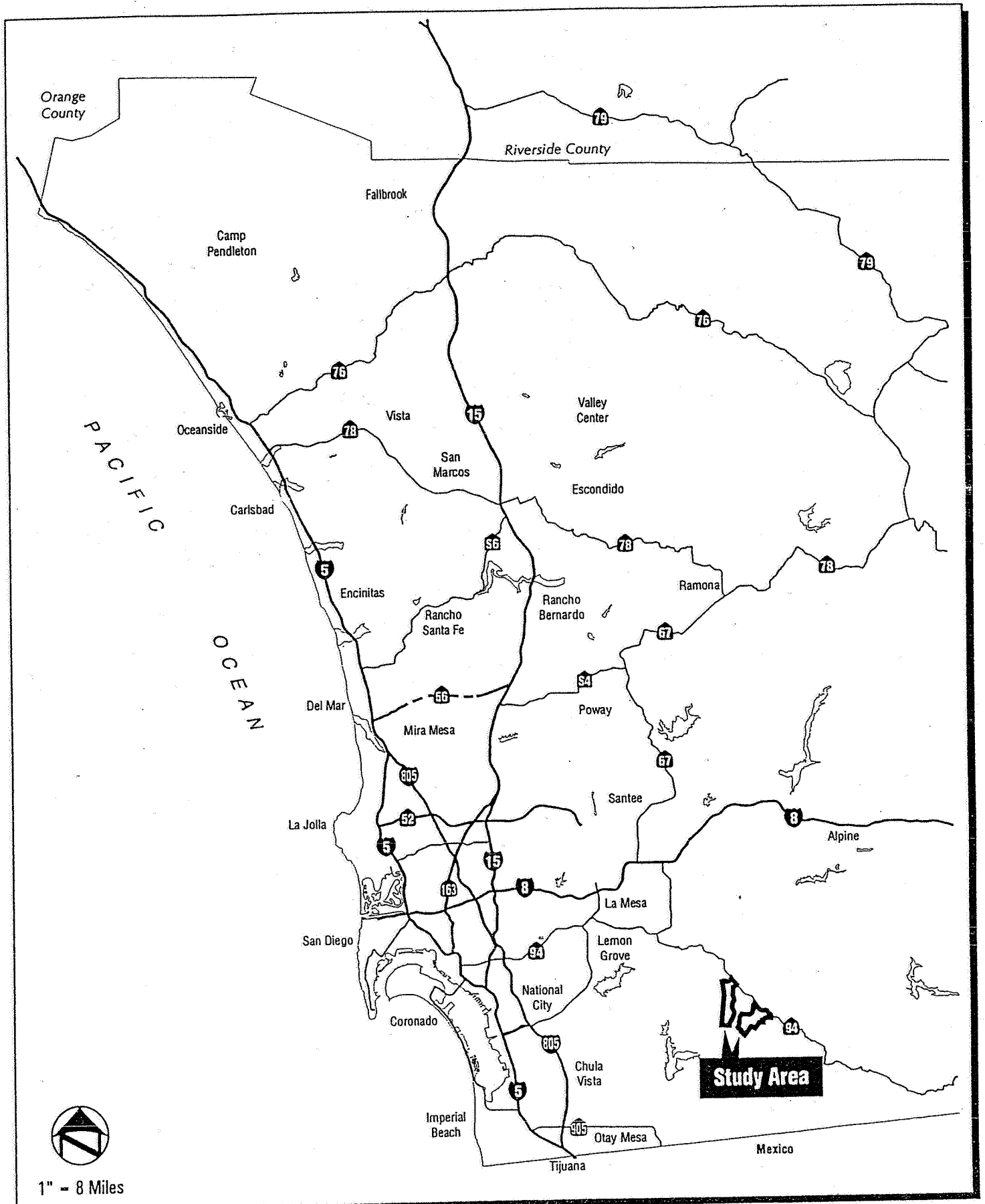
The survey results are limited by the absence of focused trapping for mammals and reptiles. In addition, many species of reptiles and amphibians are secretive in their habits and are difficult to observe using standard meandering transects.

The surveys were conducted during late spring and early to mid summer, thus seasonal constraints pose a minor limitation on the variety of plants and animals observed. However, we do not believe that any potentially occurring sensitive plant or animal species were missed due to seasonal constraints.

3.0 PHYSICAL CHARACTERISTICS

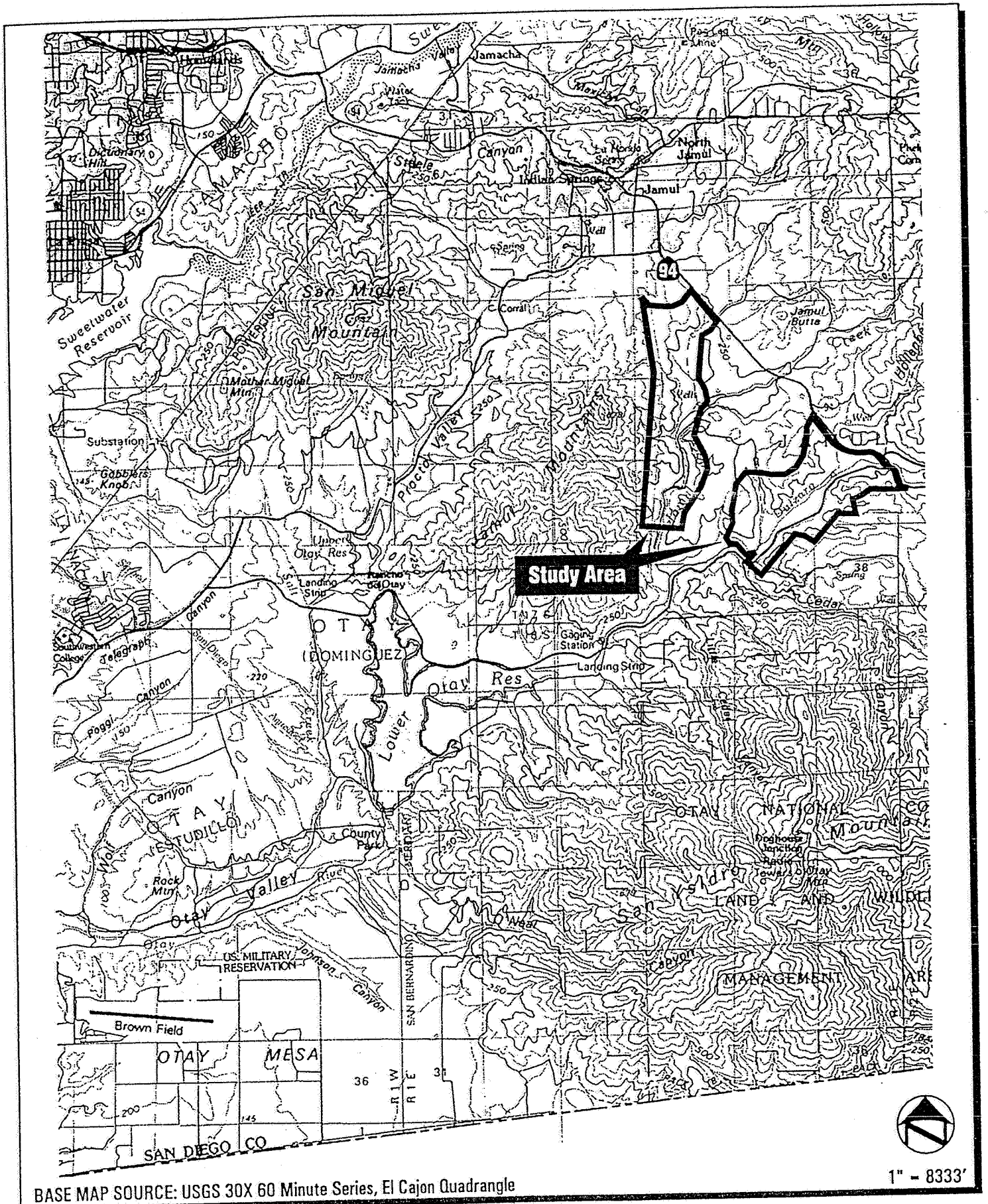
3.1 Site Description

The proposed Rancho Jamul Mitigation Bank project consists of two study areas located along Jamul Creek and Dulzura Creek, extending south and southwest, respectively, from Highway 94 in San Diego County, California. The Jamul Creek corridor occupies 1,099 acres and the Dulzura Creek corridor occupies 1,087 acres. Biological surveys were conducted in May, June, July and August of 1998 (*Figure 1*). The property lies in the northeastern portion of the U.S. Geological Survey 60 minute El Cajon quadrangle (*Figure 2*).



Rancho Jamul Mitigation Bank Constraints Analysis
 Regional Map

FIGURE
 1



BASE MAP SOURCE: USGS 30X 60 Minute Series, El Cajon Quadrangle

1" - 8333'

Rancho Jamul Mitigation Bank Constraints Analysis
Vicinity Map

FIGURE
2

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

The soils, topography, and vegetation of the site are fairly diverse. Elevations range from about 620 to 1,048 feet above mean sea level. Current land uses have resulted in approximately 10.5 acres of disturbed habitat, ruderal habitat, ornamental plantings or developed land.

According to Bowman (1973), soils onsite are comprised of Placentia series (PeC, PeC2, PFC), a sandy loam; Ramona series (RaD2, RaB), a sandy loam; Escondido series (EsC, EsE2, EsD2), a very fine sandy loam; Grangeville series (GoA), a fine sandy loam; Friant series (FxG, FxE), a rocky fine sandy loam; Visalia series (VaA, VaB, VaC), a sandy loam; Greenfield series (GrA), a sandy loam; Las Posas series (LrE2, LpD2, LrE), a fine sandy loam; Olivenhain series (OhE), a cobbly loam; Chino series (CkA), a silt loam; and rough, broken land (RuG).

4.0 RESULTS OF SURVEY

4.1 Botany - Plant Communities and Floral Diversity

Owing to many years of farming and ranching, a significant portion of the property is in a disturbed or successional state. Disturbed areas represented a challenge to map accurately, and it was necessary to develop a few criteria for categorizing habitats. The following criteria were used.

Where native shrub density represented more than 50 percent of the vegetative cover (based on a visual assessment) and the individual shrubs were typical of coastal sage shrub (e.g., *Eriogonum fasciculatum*, *Artemisia californica*, *Salvia apiana*, *Salvia mellifera*), the habitat was mapped as coastal sage scrub. Where the native shrub density represented between 20 and 50 percent of the vegetative cover, the habitat was mapped as disturbed coastal sage scrub. Those areas that had a vegetative cover of less than 20% were mapped as annual (non-native) grassland or ruderal habitat. Areas dominated by willow trees (e.g., *Salix gooddingii*, *Salix lasiolepis*) were mapped as southern willow scrub. Areas dominated by mule fat (*Baccharis salicifolia*) were mapped as mule fat scrub. Where the canopy was dominated by coast live oak (*Quercus agrifolia*), the habitat was mapped as southern coast live oak woodland. Those areas dominated by herbaceous species typical of coastal freshwater marsh (e.g., *Typha* spp. and *Scirpus* spp.) were mapped as coastal freshwater marsh, and those areas dominated by herbaceous species typical of cismontane alkali marsh (e.g., *Anemopsis californica*, *Juncus* spp., *Typha* spp. and *Distichlis spicata*) were mapped as such.

Based on species composition and general physiognomy, eleven native plant communities or habitat types were identified onsite. In addition, four altered or non-native habitat types are present. Finally, a category for developed land is included. These habitat types or land covers are described below, their acreages are presented in *Table 2*, and their spatial distributions are presented in the Biological Resources Drawings in the attached map pockets.

Biological Resources Report & Constraints Analysis
Rancho Jamul Mitigation Bank Project

TABLE 2
ACREAGES BY HABITAT TYPE AND LAND COVERS¹

Habitat Type	Acreage
Native Habitat Types	
Coastal Sage Scrub	1,104.7
Disturbed Coastal Sage Scrub	117.3
Coast Live Oak Woodland	8.5
Valley Needlegrass Grassland	0.3
Cismontane Alkali Marsh	1.5
Disturbed Cismontane Alkali Marsh	0.3
Freshwater Marsh	10.1
Mule Fat Scrub	11.6
Disturbed Mule Fat Scrub	0.3
Southern Willow Scrub	16.0
Disturbed Southern Willow Scrub	5.0
Unvegetated Waters	
Unvegetated Waters of the United States	0.7
Open Water Ponds	6.7
Non-native Land Covers	
Ruderal Habitat	875.4
Disturbed Habitat	8.2
Annual (Non-native) Grassland	7.9
Developed Land	13.4
TOTAL	2,187.0

¹Gross acreage is correct; column will not total precisely due to rounding.

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

4.1.1 Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs, characteristically dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*) and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*) and toyon (*Heteromeles arbutifolia*). It typically develops on south-facing slopes and other xeric situations.

Within the coastal sage scrub onsite, characteristic shrubs include black sage (*Salvia mellifera*), flat-top buckwheat, laurel sumac, California encelia (*Encelia californica*) and coyote brush (*Baccharis pilularis*). Understory species include narrow-leaf filago (*Filago gallica*), doveweed (*Eremocarpus setigerus*), deerweed (*Lotus scoparius*), coastal goldenbush (*Isocoma menziesii*), canchalagua (*Centaurium venustum*), mesa bushmallow (*Malocothamnus fasciculatus*) western jimsonweed (*Datura wrightii*) and bush monkeyflower (*Mimulus aurantiacus*).

Portions of the site that probably historically supported coastal sage scrub have been disturbed severely or repeatedly by human activities or livestock grazing. These areas include a much higher percent cover of non-native grasses and a lower density of native shrubs. Where native shrub density was greater than 50 percent, the habitat was mapped as coastal sage scrub; where native shrub density was 20 to 50 percent, the habitat was mapped as disturbed coastal sage scrub.

Coastal sage scrub is recognized as a sensitive plant community by local, state and federal resource agencies. It supports a rich diversity of sensitive plants and animals, and it is estimated that it has been reduced by 75 to 80% of its historical coverage throughout southern California.

4.1.2 Southern Coast Live Oak Woodland

According to Holland (1986), coast live oak woodland is a broad-leaved, sclerophyllous woodland dominated by a single evergreen species: coast live oak (*Quercus agrifolia*). Canopy height ranges from 10-25 m. The shrub layer is poorly developed, and the herb component is dominated by a variety of introduced taxa.

Onsite, this community is represented within the Dulzura Creek corridor by several broad bands of dense coast live oak that include several mature western sycamore trees (*Platanus racemosa*). The coast live oak woodlands onsite typically contain a disturbed understory that includes rippgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus madritensis*) and slender wild oat (*Avena barbata*).

Biological Resources Report & Constraints Analysis Rancho Jamul Mitigation Bank Project

4.1.3 Valley Needlegrass Grassland

Valley needlegrass grassland is a native grassland dominated by perennial bunchgrasses, such as needlegrass (*Nassella* spp.). This plant community typically alternates with coastal sage scrub on some clay soils, often on more mesic exposures and at the bases of slopes, but also may occur in large patches.

Onsite, Valley needlegrass grassland is dominated by Valley needlegrass (*Nassella pulchra*). Other native species within this habitat type include slender wild oat and a variety of bromes.

4.1.4 Cismontane Alkali Marsh

Holland (1986) describes cismontane alkali marsh as a wetland habitat type where standing water or saturated soils are present during most of the year. Typical species include yerba mansa (*Anemopsis californica*), saltgrass (*Distichlis spicata*), rushes (*Juncus* spp.), sedges (*Carex* spp.), pickleweed (*Salicornia virginica*), alkali heath (*Frankenia grandifolia*) and cattails (*Typha* spp.).

Onsite, this habitat type includes the following species: spiny rush (*Juncus acutus*), saltgrass, yerba mansa, annual rabbit-foot grass (*Polypogon monspeliensis*), curly dock (*Rumex crispus*), pale spikerush (*Eleocharis macrostachya*) and hyssop loosestrife (*Lythrum hyssopifolium*).

Cismontane alkali marsh is considered a wetland community and as such typically is under the jurisdiction of the California Department of Fish and Game, pursuant to Sections 1601-1603 of the California Fish and Game Code, and the U.S. Army Corps of Engineers, pursuant to Section 404 of the Clean Water Act.

4.1.5 Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh (freshwater marsh) is a wetland habitat type that develops where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches and seepages. It typically is dominated by tall, emergent monocots, such as cattail (*Typha* sp.) and bulrush (*Scirpus* sp.).

Within the project site, freshwater marsh occurs within the Jamul Creek and Dulzura Creek channels and is dominated by broad-leaved cattail (*Typha latifolia*), African umbrella sedge (*Cyperus involucratus*), hyssop loosestrife, bulrush (*Scirpus californica*), giant creek nettle (*Urtica dioica*), Hooker's evening primrose (*Oenothera elata* spp. *hookeri*), yellow waterweed (*Ludwigia peploides*) and watercress (*Rorippa nasturtium-aquaticum*).

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Freshwater marsh is considered a wetland community and as such typically is under the jurisdiction of the California Department of Fish and Game, pursuant to Sections 1601-1603 of the California Fish and Game Code, and the U.S. Army Corps of Engineers, pursuant to Section 404 of the Clean Water Act.

4.1.6 Mule Fat Scrub

This tall, depauperate, herbaceous riparian community is typically dominated by mule fat (*Baccharis salicifolia*) and develops along intermittent stream channels. This vegetation type can withstand frequent flooding and frequently occurs as an understory between patches of sycamore stands. Common species include *Salix lasiolepis*, *Salix hindsiana*, *Urtica holosericea* and *Carex barbarae* (Holland 1986).

Onsite, this vegetation type is dominated by mule fat and occurs within Jamul Creek and Dulzura Creek and along the margins of stock ponds. Herbaceous species include African umbrella sedge, willow weed (*Polygonum lapathifolium*), water cress, wild heliotrope (*Heliotropium curassavicum*) and curly dock.

Mule fat scrub is considered a wetland community and as such typically is under the jurisdiction of the California Department of Fish and Game, pursuant to Sections 1601-1603 of the California Fish and Game Code, and the U.S. Army Corps of Engineers, pursuant to Section 404 of the federal Clean Water Act.

4.1.7 Southern Willow Scrub

Holland (1986) describes southern willow scrub as a dense, broad-leaved, winter-deciduous riparian thicket dominated by several species of willow (*Salix* spp.), with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). The closed canopy of this riparian community typically inhibits the development of a diverse understory.

Onsite, southern willow scrub occurs within the Jamul Creek and Dulzura Creek channels. This vegetation type is dominated by arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), but also includes Fremont cottonwood, seep monkeyflower (*Mimulus guttatus*), Hooker's evening primrose, lowland cudweed (*Gnaphalium palustre*), rough cocklebur (*Xanthium strumarium*), western ragweed (*Ambrosia priloostachya*), saltgrass and annual rabbit-foot grass (*Polypogon monspeliensis*).

Southern willow scrub is considered a wetland community and as such typically is under the jurisdiction of the California Department of Fish and Game, pursuant to Sections 1601-1603 of the

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California Fish and Game Code, and the U.S. Army Corps of Engineers, pursuant to Section 404 of the federal Clean Water Act.

4.1.8 Annual (Non-native) Grassland

Where the native habitat has been disturbed frequently or intensively by grazing, fire, agriculture, or other activities, the native community usually is incapable of recovering. These areas onsite are characterized by weedy, introduced annuals, primarily grasses, including especially slender wild oat, foxtail chess (*Bromus madritensis*), ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), black mustard, telegraph weed (*Heterotheca grandiflora*), star-thistle (*Centaurea melitensis*), deerweed (*Lotus scoparius*), pigweed (*Amaranthus* sp.), golden top (*Lamarckia aurea*), Spanish-clover (*Lotus purshianus*), and doveweed (*Eremocarpus setigerus*).

4.1.9 Ruderal Habitat

Ruderal habitat is similar to annual (non-native) grassland in that these areas are typically the result of frequent mechanical disturbance, but differ in that non-native species predominate over natives and native habitat recovery is unlikely due to the predominance of non-native species. Generally, ruderal habitat is characterized by forbs such as black mustard, star-thistle, filaree (*Erodium* sp.), sweet-fennel (*Foeniculum vulgare*), etc., rather than grasses.

Ruderal habitats onsite are characterized by weedy, introduced annuals, including black mustard, star thistle, slender wild oat and bromes (*Bromus diandrus*, *Bromus madritensis* and *Bromus hordeaceus*). Within the project site, the present-day ruderal habitat evidently is the result of past land uses, especially discing and livestock grazing.

4.1.10 Disturbed Habitat

Disturbed habitat refers to areas that have been frequently or intensively disturbed to the extent that the native community usually is incapable or recovering. These areas onsite are either lacking vegetation entirely or are characterized by weedy, introduced annuals, including slender wild oat, bromes, black mustard, rattlesnake spurge (*Chamaesyce albomarginata*), castor-bean (*Ricinus communis*), star-thistle and garland chrysanthemum (*Chrysanthemum coronarium*). Within the project corridors, this habitat type occurs primarily along dirt roadways.

4.1.11 Developed

This cover type includes the asphalt Otay Lakes Road and Highway 94.

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4.1.12 Floral Diversity

A total of 76 species of vascular plants, 53 native (70 percent) and 23 non-native (30 percent), was recorded from the site (APPENDIX A). The moderate diversity of the flora onsite is reflective of the limited variations in topography, soil type, vegetation associations and the disturbance to native plant communities in the areas surveyed.

4.2 Zoology - Wildlife Diversity

4.2.1 Birds

Seventy (70) bird species were observed during the surveys (see APPENDIX B). The observed avifauna is comprised of a moderately diverse assemblage of species associated with riparian and scrub habitats.

The vegetation types onsite provide habitat for a large variety of birds, including least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Polioptila californica californica*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), Nuttall's woodpecker (*Picoides nuttallii*) and several raptors, including white-tailed kite (*Elanus caeruleus*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*). Raptors are considered sensitive as a group. Yellow-breasted chat and yellow warbler are considered sensitive and least Bell's vireo and coastal California gnatcatcher are state- and federally-listed endangered and threatened species, respectively.

4.2.2 Reptiles and Amphibians

Eight species of reptiles were observed onsite: coast horned lizard (*Phrynosoma coronatum*) and western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western skink (*Eumeces skiltonianus*), southern alligator lizard (*Gerrhonotus multicarinatus*), western whiptail (*Cnemidophorus tigris*), red-diamond rattlesnake (*Crotalus ruber*) and California whipsnake (*Masticophis lateralis*) as recorded in APPENDIX B. Other species common in the area and likely to occur onsite include gopher snake (*Pituophis melanoleucus*), western rattlesnake (*Crotalus viridis*) and common kingsnake (*Lampropeltis getulus*).

Four amphibian species were observed during the survey: western toad (*Bufo boreas*), Pacific slender salamander (*Batrachoseps pacificus*), Pacific treefrog (*Hyla regilla*) and bullfrog (*Rana catesbeiana*), as recorded in Appendix B. Other amphibian species likely to occur onsite are few but possibly include the arboreal salamander (*Aneides lugubris*) and African clawed frog (*Xenopus laevis*).

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4.2.3 Mammals

Sixteen mammal species, or their sign, were observed onsite during the survey, including brush rabbit (*Sylvilagus bachmani*), Virginia possum (*Didelphis virginiana*) and coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*) and bobcat (*Lynx rufus*). APPENDIX B contains a complete list of mammals observed onsite.

4.2.4 Invertebrates

No invertebrates were recorded during the survey. The moderate plant species richness onsite is undoubtedly accompanied by a fairly high number of phytophagous (plant-feeding) insect species. In particular, there are probably over 200 species of Lepidoptera (butterflies and moths) and a comparable number of Coleoptera (beetles), Hymenoptera (bees, ants and wasps), and Diptera (flies) present within the local area. The riparian areas may provide habitat for a number of aquatic and/or semi-aquatic insects; dragonflies and damselflies (*Odonata*), aquatic true bugs (*Hemiptera*) and aquatic beetles (*Coleoptera*) are expected to occur onsite.

4.3 Sensitive Biological Resources

The following resources are discussed in this section: (1) plant and animal species present in the project vicinity that are given special recognition by federal, state, or local conservation agencies and organizations owing to declining, limited, or threatened populations, that are the results, in most cases, of habitat reduction; and (2) habitat areas that are unique, are of relatively limited distribution, or are of particular value to wildlife. Sources used for determination of sensitive biological resources are as follows: **wildlife**, U.S. Fish and Wildlife Service (USFWS 1989, 1991), California Department of Fish and Game (CDFG 1980, 1986), Remsen (1978), Everett (1979), McGurty (1980), and Murphy (1990); **plants**, USFWS (1990, 1993), CDFG (1987), and Skinner and Pavlik (1994); and **habitats**, Holland (1986).

4.3.1 Sensitive Plant Species

Four sensitive plant species considered sensitive by various resource agencies were observed onsite: San Diego County viguiera (*Viguiera laciniata*), San Diego marsh-elder (*Iva hayesiana*), spiny rush (*Juncus acutus* var. *leopoldii*), San Diego marsh-elder (*Iva hayesiana*) and Coulter's matilija poppy (*Romneya coulteri*). The listing authorities and explanation of listing categories are presented in APPENDIX C.

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Viguiera laciniata - San Diego County viguiera

USFWS: None

CDFG: None

CNPS: List 2, 1-2-1

San Diego County viguiera is a moderate-sized (0.8-1.2 m), yellow-flowered, perennial shrub, that blooms from about January to July. It is restricted to coastal sage scrub habitat below about 400 m from southern San Diego County to northwestern Baja California, Mexico (Wiggins 1980). In San Diego County, it is locally common south of Mission Valley; it ranges from the international border north to about Scripps Ranch, and extends east from the Pacific coast to Dulzura, Potrero, and Crest. Although many of the former sites of this plant have been lost to development, it is found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.

Onsite, this species is found scattered in coastal sage scrub within the Jamul Creek corridor.

Juncus acutus var. *leopoldii* - southwestern spiny rush

USFWS: None

CDFG: None

CNPS: List 4, 1-1-3

This large (0.5-1.5 m), tufted, perennial rush, with stout, rigid stems, is encountered frequently in alkaline seeps and marshes or in areas adjacent to these. Southwestern spiny rush has a wide distribution from San Luis Obispo County south to Baja California and east to Imperial County and Arizona, although some doubt exists regarding the taxonomy of eastern populations. Although urbanization represents a serious threat to spiny rush (Smith and Berg 1988), the abundance of this plant in many widely separated wetlands, together with the current application of protection for these habitats, indicates a rather low threat to this species.

Onsite, spiny rush is found in several locations, primarily within intermittent or perennial stream channels.

Iva hayesiana - San Diego marsh-elder

USFWS: None

CDFG: None

CNPS: List 2, 2-2-1

This low perennial shrub occurs in southwestern San Diego County and northern Baja California (Munz 1974, Smith and Berg 1988). It grows in low-lying, moist or alkaline places along intermittent

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streams in coastal areas. Although it has a fairly restricted range in San Diego County, San Diego marsh-elder is apparently more widespread to the south, ranging into central Baja California (Wiggins 1980). In San Diego County, *Iva hayesiana* is confined to several disjunct populations between San Marcos and Otay Mesa. San Diego marsh-elder often grows in association with spiny rush (*Juncus acutus* var. *leopoldii*) and other indicators of wetland habitat (Reed 1988). It is a dominant understory plant in disturbed floodplain situations such as that in the Otay River Valley. Although its habitat in southwestern San Diego County is somewhat threatened by coastal development and channelization of local streams and rivers, this plant is relatively abundant, hardy and occurs in habitats that are protected by wetlands regulations.

Onsite, San Diego marsh-elder occurs within several cismontane alkali marsh habitats within the Jamul Creek corridor.

Romneya coulteri - Coulter's matilija poppy

USFWS: None

CDFG: None

CNPS: List 4, 1-1-3

Coulter's matilija poppy is a tall (1.0-2.5 m) perennial herb with extremely large, white, showy flowers. It frequently forms thickets of stems in dry washes, canyons, and mesic slopes. It has been observed from the Santa Ana Mountains of Orange County and Riverside County south to San Diego. Locally it is recorded from Sweetwater Valley and El Niño inland to Tecate Mountain.

This species was found in one patch of coastal sage scrub within the Jamul Creek corridor.

Selaginella cinerascens - ashy spike-moss

USFWS: None

CDFG: None

CNPS: List 4, 1-2-1

This tiny, prostrate, whitish gray, moss-like plant occurs in San Diego County and adjacent northwestern Baja California, Mexico. In San Diego County it ranges from about Camp Pendleton south to the international border. It is relatively abundant in coastal areas, occurring on flat mesas below 300 m. Development of these areas has caused significant reduction of the habitat of the ashy spike-moss. This plant is one of the most common understory plants in coastal sage scrub and coastal chaparral communities, but has a restricted geographical range in southern California.

Ashy spike-moss is common throughout much of the coastal sage scrub onsite.

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4.3.2 Sensitive Wildlife Species

One state and federally-listed endangered animal species, least Bell's vireo (*Vireo bellii pusillus*), and one federally-listed threatened animal species, coastal California gnatcatcher (*Poliophtila californica californica*) were observed onsite. In addition, yellow warbler (*Dendroica petechia*) and yellow-breasted chat (*Icteria virens*), considered sensitive by the California Department of Fish and Game, were observed on the northern parcel. Several other bird species observed onsite are considered sensitive by various resource agencies: American kestrel (*Falco sparverius*), rufous-crowned sparrow (*Aimophila ruficeps*), yellow-breasted chat (*Icteria virens*) and yellow warbler (*Dendroica petechia*). Five raptor species, considered sensitive as a group, were observed onsite: Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*) and white-tailed kite (*Elanus caeruleus*). A turkey vulture (*Cathartes aura*), also considered sensitive, was observed during the surveys.

Birds

One animal species listed as threatened by the United States Fish and Wildlife Service (USFWS) has been observed within the Jamul Creek project corridor: coastal California gnatcatcher (*Poliophtila californica californica*). One animal species listed as endangered by the USFWS and the California Department of Fish and Game (CDFG) was observed within both project creek corridors: least Bell's vireo (*Vireo bellii pusillus*). Several other bird species observed onsite are considered sensitive by various resource agencies: American kestrel (*Falco sparverius*), rufous-crowned sparrow (*Aimophila ruficeps*), yellow-breasted chat (*Icteria virens*) and yellow warbler (*Dendroica petechia*). Five raptor species, considered sensitive as a group, were observed onsite: Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), northern harrier (*Circus cyaneus*) and white-tailed kite (*Elanus caeruleus*). A turkey vulture (*Cathartes aura*), also considered sensitive, was observed during the surveys.

Poliophtila californica - California gnatcatcher

USFWS: Threatened

CDFG: Species of Special Concern

The California gnatcatcher is a small gray non-migratory bird with black tail markings. During the breeding season the male has a distinct black cap. Gnatcatchers eat insects and build a small, cup-shaped nest of plant material, animal hair, and spider webs. A pair of gnatcatchers typically forage over 5 to 20 acres during the breeding season and more widely at the end of spring. The present known range of the California gnatcatcher extends from the Palos Verdes Peninsula of Los Angeles County south through Orange, western Riverside, and San Diego counties, into northern Baja California, Mexico. The gnatcatcher is a near obligate resident of coastal sage scrub and inland sage

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scrub communities. Individuals of this species generally are found at elevations below 900 feet in San Diego, Orange, and Los Angeles counties, and below 1,600 feet in Riverside County (Atwood 1990). Based on recent resource mapping for subregional management plans (e.g., MSCP, MHCP, Orange County NCCPs), it is estimated that there are 3,000-3,500 pairs in California.

A focused survey was conducted in May, June and July 1998, for this species in accordance with the USFWS three site visits per 100-acre protocol, and employed tape play-back. Four pairs were observed within the Jamul Creek corridor.

Vireo bellii pusillus - least Bell's vireo

USFWS: Endangered

CDFG: Endangered

Least Bell's vireo is a small, gray and white, migratory songbird that inhabits willow-dominated riparian areas of southern California and adjacent northern Baja California, Mexico (San Diego Association of Governments 1988). It is one of four North American subspecies of Bell's vireo. Historically, this subspecies was abundant in riverine habitats from Baja California to Tehama County in central California (Grinnell and Miller 1944, Willett 1933), with the center of its breeding range in the Sacramento and San Joaquin Valleys. Widespread destruction of its obligate riparian habitat for agricultural use, livestock grazing, flood control, urban development, and various commercial uses in combination with increased brood parasitism by the exotic brown-headed cowbird (*Molothrus ater*) decimated vireo numbers, extirpating it from the central valleys, and restricting the species to small, fragmented populations in a fraction of its former range (United States Fish and Wildlife Service 1988). By 1985, only 285 pairs were known from 45 locations in 9 counties (United States Fish and Wildlife Service 1988). In response to the unparalleled decline of this passerine, the least Bell's vireo was listed as endangered by the California Department of Fish and Game in June 1980, and by the U.S. Fish and Wildlife Service in May 1986. As a result of stricter enforcement of wetland preservation policies and intensive brown-headed cowbird trapping, there have been significant gains in the numbers of least Bell's vireos over the last 2 to 3 years.

Two individual males were heard singing on several occasions along Dulzura Creek and three males were heard singing along Jamul Creek. Based on the behavior of these individual birds, the field biologists believed that all were paired.

Icteria virens - yellow-breasted chat

USFWS: None

CDFG: Species of Special Concern

The yellow-breasted chat is a migratory species that is an uncommon and localized summer resident in San Diego County (Unitt 1984). It breeds only in riparian woodlands from about mid-April

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through mid-September. It occurs primarily in the coastal lowland, but occasionally may be found in the foothill zone. It has been recorded from the Santa Margarita River, Las Pulgas Creek, San Luis Rey River, San Diego River, and the Tijuana River Valley. The yellow-breasted chat has declined as a result of the reduction of riparian habitat throughout much of its historical breeding areas and nest parasitism by the brown-headed cowbird (*Molothrus ater*).

Two yellow-breasted chats were heard along Dulzura Creek and six individuals were heard along Jamul Creek.

Dendroica petechia - yellow warbler
USFWS: None
CDFG: Species of Special Concern

The yellow warbler is a fairly common spring migrant and an uncommon and localized summer resident in San Diego County (Unitt 1984). This species is most numerous in early to mid-May. Migrating yellow warblers may stop in a wide variety of habitats, but breeding is restricted to riparian woodlands. This species undoubtedly has suffered from brown-headed cowbird parasitism.

One yellow warbler was heard along Dulzura Creek and five individuals were heard along Jamul Creek.

Aimophila ruficeps canescens - southern California rufous-crowned sparrow
USFWS: former Category 2 candidate
CDFG: Species of Special Concern

Until recently, the rufous-crowned sparrow was recognized by the USFWS as a federal category 2 candidate for listing as threatened or endangered. This species occurs primarily in coastal sage scrub and has declined as a result of habitat loss.

One rufous crowned sparrow was observed within the Jamul Creek corridor.

Elanus caeruleus - white-tailed kite
USFWS: None
CDFG: Species of Special Concern, Fully Protected

According to Unitt (1984), the white-tailed kite is a fairly common resident in San Diego County. This species prefers to nest in riparian woodlands that border grasslands or open fields. Kites may forage over any grassy area, and often are seen hovering over the weedy margins of freeways. Kites occasionally gather to roost communally, and such roostings may include as many as 50 individuals

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(Unitt 1984). The white-tailed kite exhibits rather dramatic population fluctuations, and may be common for several years followed by years of relative rarity.

This species was observed during the surveys and is believed to use the project site for foraging purposes.

Cathartes aura - turkey vulture

USFWS: None

CDFG: None

Although not recognized as sensitive by the USFWS or the CDFG, the turkey vulture is considered "declining" in San Diego County (Everett 1979). In southern California, turkey vultures are fairly widespread and may be observed foraging over open fields and grasslands. Unitt (1984) reports that vultures are common spring and fall migrants, uncommon to locally common winter visitors, and rare to uncommon summer residents in the County. They rely on carrion for food, and they are a valuable and necessary part of the food chain. Turkey vultures have declined in throughout southern California in part because of poisoning and loss of habitat.

Turkey vultures were observed foraging over the project site during many surveys. No roosts or nests were observed.

Accipiter cooperi - Cooper's hawk

USFWS: None

CDFG: Species of Special Concern

Cooper's hawk ranges through most of California and is a common winter migrant in San Diego County. In the County, Cooper's hawk breeds in oak woodland, riparian woodland and eucalyptus woodland habitats; in the winter they may be found in any woodland habitat (Unitt 1984). Although populations of this species were reported to have declined steadily throughout the state, probably as a result of habitat destruction, falconry, and pesticide abuse (Remsen 1978), it now is the opinion of some field ornithologists that the Cooper's hawk is relatively common in suburban and rural landscapes as well as natural woodlands.

This species was observed foraging over the project site. No roosts or nests were observed.

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Buteo lineatus - red-shouldered hawk

USFWS: None

CDFG: None

Audubon Blue List 1972-1986

The red-shouldered hawk is an uncommon to fairly common resident in San Diego County (Unitt 1984), inhabiting most of the county west of the desert. Red-shouldered hawks occupy a variety of woodland habitats, and stands of non-native trees (e.g., eucalyptus) also may serve as breeding habitat. Although concern has been expressed that the numbers of this species are declining, Wilbur (1973) concluded that no major declines in population had occurred in California except possibly in the Sacramento and San Joaquin Valleys. These hawks apparently can tolerate human presence if mature trees with a high canopy are maintained.

Red-shouldered hawks were observed foraging over the project site during several of the surveys. No roosts or nests were observed.

Circus cyaneus - northern harrier

USFWS: None

CDFG: Species of Special Concern

The northern harrier ranges throughout California and may be encountered in grasslands, open fields, and salt and freshwater marshes. Although breeding is restricted to marshes and grasslands, it forages over a variety of habitat types including coastal sage scrub. According to Unitt (1984), the northern harrier is an uncommon-to-fairly common migrant and winter visitor in San Diego County, and a rare and local summer resident. This species has declined in southern California as a result of loss of foraging and nesting habitat.

Northern harriers were observed flying over the study area. They certainly forage and may nest on the site.

Reptiles

No sensitive reptilian species were observed onsite; however, the site contains potential habitat for the following sensitive species: two-striped gartersnake (*Thamnophis hammondi*), San Diego horned lizard (*Phrynosoma coronatum*), western whiptail lizard (*Cnemidophorus tigris multiscutatus*) and orange-throated whiptail lizard (*Cnemidophorus hyperythrus beldingi*).

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Amphibians

No sensitive amphibian species were observed onsite. The project study area does contain potential habitat for western spadefoot toad (*Scaphiopus hammondi*).

Mammals

No sensitive mammal species were observed onsite. The project site does, however, contain potential habitat for the mountain lion (*Felis concolor*), which is considered "sensitive" for habitat conservation planning purposes.

Invertebrates

No sensitive invertebrate species were observed onsite. The project study area does not contain potential habitat for the Harbison's dun skipper (*Euphyes vestris*) because the host plant, San Diego sedge (*Carex spissa*), was not observed. The project study area may contain potential habitat for the quino checkerspot butterfly (*Euphydryas editha quino*) because the host plant, dot-seed plantain (*Plantago erecta*), was observed, and the property is near known current localities of this animal on Otay Mountain. The Property also may contain potential habitat of the Hermes copper (*Lycaena hermes*) because its host plant, spiny redberry (*Rhamnus crocea*) was observed.

4.3.3 Sensitive Habitats

Sensitive habitats are those that are considered rare within the region, support sensitive plant and/or wildlife species, or function as corridors for wildlife movement. Habitat types found onsite that are considered sensitive include coastal sage scrub, freshwater marsh, cismontane alkali marsh, mule fat scrub, southern willow scrub, southern coast live oak and native grassland. In addition, it is likely that both project corridors represent wildlife corridors.

4.3.4 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability in several ways: (1) they assure the continual exchange of genes between populations which helps maintain genetic diversity; (2) they provide access to adjacent habitat areas representing additional territory for foraging and mating; (3) they allow for a greater carrying capacity; and (4) they provide routes for colonization of habitat lands following local populations extinctions or habitat recovery from ecological catastrophes (e.g., fires).

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Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as "stepping stones" for dispersal.

Owing to the geographic position of the project study area in the context of surrounding undisturbed habitat, it is likely that most of the native habitat receives considerable use from larger mammals such as mule deer, coyote, and bobcat. No specific movement corridors have been identified onsite, but in general, many larger animals will follow the "path of least resistance." Hence, topographically well defined areas (e.g., drainages and canyon bottoms), roads, and trails are the most likely places to support animal movement.

4.4 Regional Resource Planning Context

In San Diego County, three major, coordinated conservation planning efforts currently are in progress with the long-term goal of identifying a system of preserves that will protect native habitat lands and their associated biota. The three efforts are (1) the City of San Diego's Multiple Species Conservation Program (MSCP), administered by the Metropolitan Wastewater Department, focused on biological resource planning for the southwestern one-fourth of the County; (2) the San Diego Association of Government's (SANDAG) Multiple Habitat Conservation Program (MHCP), funded by a consortium of jurisdictions in northern San Diego County known as the North County Wildlife Forum, focusing on the northwestern one-fourth of the County; and (3) the County of San Diego Open Space Plan, which focuses on the portion of the County east of the MSCP and MHCP study areas. The ultimate goal of these plans is the establishment of biological reserve areas in conformance with the State of California's Natural Community Conservation Program (NCCP).

In this context, the project site lies within the County of San Diego Open Space Plan area and contains native plant communities. Since an Implementing Agreement has not been completed to date for the County's Open Space Plan, the Biological Mitigation Ordinance does not apply.

5.0 SUMMARY OF CONSTRAINTS

No project construction plans have been developed, consequently, at this time it is not possible to assess impacts. Therefore, the following discussion is very general with respect to impacts and mitigation measures.

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5.1 General Recommendations

1. Development should be sited out of areas of natural vegetation if possible, particularly sensitive habitat areas such as coastal sage scrub, southern willow scrub, mule fat scrub, cismontane alkali marsh, freshwater marsh and streambed. Although the vast majority of the habitats contiguous with the streambeds is disturbed, there are some patches of native habitat that should be retained if possible. Conversely, removal of stands of alien plants (e.g., *Ailanthus altissima*) represent enhancement opportunity.
2. All habitat removals should occur during the non-breeding season of most wildlife, i.e., approximately August 1 to March 1.
3. Construction work areas should be delineated and marked clearly in the field prior to habitat removals, and the marking maintained throughout the construction period.
4. Impacts to large-stature vegetation, particularly native vegetation, such as oak trees, should be avoided by making field adjustments to the delineated construction areas.
5. Native soils in construction areas should be removed, stockpiled properly and replaced in those areas where onsite revegetation of native habitat is contemplated.
6. Typical erosion control measures in the vicinity of streams should be employed.
7. It will be necessary to obtain permits under Section 404 of the federal Clean Water Act and Section 1600 of the California Fish and Game Code should impacts to the existing wetlands and waters be proposed.
8. A biological monitor should be present during construction and mitigation programs to ensure that conservation measures associated with the resource agency permits and construction documents are performed in compliance with those documents and any concurrent or subsequent mitigation plans.

5.2 Mitigation Measures for Impacts to Waters of the United States and Jurisdictional Wetlands

Unavoidable permanent and temporary impacts to wetland habitats typically are mitigated in accordance with federal and state "no net loss" policies. For permanent impacts, in practical terms mitigation generally results in a combination of wetland habitat creation at a ratio of 1:1, and

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additional enhancement, restoration or acquisition, particularly if the affected habitat is a wooded wetland (i.e., southern coast oak riparian forest). For temporary impacts, in practical terms mitigation generally results in onsite restoration or enhancement of the affected area at a ratio of 1:1; additional mitigation may be required if the habitat is a wooded wetland, and/or supports highly sensitive species.

In addition to habitat replacement mitigation measures, it also is typical that habitat removals within wetland habitats are restricted to the non-breeding season and by methods that do not contribute to erosion and sedimentation.

6.0 ACKNOWLEDGMENTS

This report was prepared by DUDEK biologists Sherri L. Miller, Brock A. Ortega and Harold A. Wier, and subconsultant Renee Y. Owens. Graphics and GIS mapping and analyses were provided by Martie A. Clemons; Tonette S. Foster provided word processing.

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APPENDICES

DUDEK
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APPENDIX A

VASCULAR PLANT SPECIES OBSERVED ONSITE

LYCOPODIAE

SELAGINELLACEAE - SPIKE-MOSS FAMILY

Selaginella bigelovii - Bigelow's spike-moss

Selaginella cinerascens - ashy spike-moss

ANGIOSPERMAE (DICOTYLEDONES)

AMARANTHACEAE - AMARANTH FAMILY

Amaranthus sp. - pigweed

ANACARDIACEAE - SUMAC FAMILY

Malosma laurina - laurel sumac

Toxicodendron diversilobum - poison-oak

APIACEAE - CARROT FAMILY

Daucus pusillus - rattlesnake weed

ASTERACEAE - SUNFLOWER FAMILY

Acourtia microcephala - scapellote

Ambrosia confertiflora - ragweed

Ambrosia psilostachya var. *californica* - western ragweed

Artemisia californica - coastal sagebrush

Baccharis salicifolia - mulefat

Baccharis sarothroides - chaparral broom

* *Centaurea melitensis* - star thistle

* *Chrysanthemum coronarium* - garland chrysanthemum

* *Conzya canadensis* - horseweed

* *Filago gallica* - narrow-leaf filago

Gnaphalium palustre - lowland cudweed

Gutierrezia californica - California matchweed

Hemizonia fasciculata - fascicled tarweed

Heterotheca grandiflora - telegraph weed

Iva hayesiana - San Diego marsh-elder

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APPENDIX A (Continued)

- Isocoma menziesii* ssp. *veneta* - coastal goldenbush
* *Silybum marianum* - milk thistle
Viguiera laciniata - San Diego County viguiera
Xanthium strumarium - cocklebur

BORAGINACEAE - BORAGE FAMILY

Heliotropium curassavicum - wild heliotrope

BRASSICACEAE - MUSTARD FAMILY

- * *Brassica nigra* - black mustard
* *Raphanus sativus* - wild radish
Rorippa nasturtium-aquaticum - water cress

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Sambucus mexicana - Mexican elderberry

CHENOPODIACEAE - GOOSEFOOT FAMILY

- * *Atriplex semibaccata* - Australian saltbush
* *Salsola tragus* - Russian-thistle

CRASSULACEAE - STONECROP FAMILY

Crassula connata - dwarf stonecrop
Dudleya pulverulenta - chalk dudleya

EUPHORBIACEAE - SPURGE FAMILY

- Chamaesyce polycarpa* - small-seed sand mat
Eremocarpus setigerus - doveweed
* *Ricinus communis* - castor-bean

FABACEAE - PEA FAMILY

- Lotus purshianus* - Spanish-clover
Lotus scoparius - deerweed
Lotus strigosus - California deerweed
* *Melilotus sp.* - sweet-clover

FAGACEAE - BEECH FAMILY

Quercus agrifolia - coast live oak

APPENDIX A (Continued)

GENTIANACEAE - GENTIAN FAMILY

Centaurium venustum - canchalagua

GERANIACEAE - GERANIUM FAMILY

* *Erodium botrys* - broad-lobed filaree

LAMIACEAE - MINT FAMILY

* *Marrubium vulgare* - horehound

Salvia apiana - white sage

Trichostemma lanceolatum - vinegar weed

LYTHRACEAE - LOOSESTRIFE FAMILY

* *Lythrum hyssopifolium* - hyssop loosestrife

MALVACEAE - MALLOW FAMILY

Malocothamnus fasciculatus - mesa bushmallow

ONAGRACEAE - EVENING-PRIMROSE FAMILY

Epilobium canum - California fuchsia

Ludwigia peploides - yellow waterweed

Oenothera elata ssp. *hookeri* - Hooker's evening primrose

PAPAVERACEAE - POPPY FAMILY

Romneya coulteri - Coulter's matilija poppy

PLANTAGINACEAE - PLANTAIN FAMILY

Plantago erecta - dot-seed plantain

PLATANACEAE - SYCAMORE FAMILY

Platanus racemosa - western sycamore

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum - California buckwheat

Polygonum lapathifolium - willow weed

* *Rumex crispus* - curly dock

PRIMULACEAE - PRIMROSE FAMILY

* *Anagallis arvensis* - scarlet pimpernel

APPENDIX A (Continued)

RHAMNACEAE - BUCKTHORN FAMILY

Rhamnus crocea - redberry

ROSACEAE - ROSE FAMILY

Rosa californica - California rose

SALICACEAE - WILLOW FAMILY

Populus fremontii - Fremont cottonwood
Salix exigua - narrow-leaved willow
Salix gooddingii - Goodding's black willow
Salix lasiolepis var. *bracelinae* - arroyo willow

SAURURACEAE - LIZARD'S-TAIL FAMILY

Anemopsis californica - yerba mansa

SCROPHULARIACEAE - FIGWORT FAMILY

Antirrhinum nuttallianum - Nuttall's snapdragon
Castilleja exserta - common owl's-clover
Mimulus aurantiacus - bush monkeyflower
Mimulus guttatus - seep monkeyflower

SOLANACEAE - NIGHTSHADE FAMILY

- * *Datura wrightii* - western jimsonweed
- * *Nicotiana glauca* - tree tobacco

TAMARICACEAE - TAMARISK FAMILY

- * *Tamarix* sp. - tamarisk

URTICACEAE - NETTLE FAMILY

Urtica dioica - giant creek nettle

ANGIOSPERMAE (MONOCOTYLEDONES)

CYPERACEAE - SEDGE FAMILY

- * *Cyperus ligularis* - umbrella-plant
- * *Cyperus involucratus* - African umbrella sedge
- Cyperus odoratus* - coarse cyperus
- Eleocharis macrostachya* - pale spike-rush

APPENDIX A (Continued)

Scirpus californicus - bulrush

JUNCACEAE - RUSH FAMILY

Juncus acutus - spiny rush

Juncus bufonius - toad rush

Juncus dubius - mariposa rush

Juncus effusus - bog rush

Juncus sp. - rush

POACEAE - GRASS FAMILY

- * *Avena barbata* - slender oat
- * *Bromus diandrus* - ripgut grass
- * *Bromus hordeaceus* - soft chess
- * *Bromus madritensis ssp. rubens* - foxtail chess
- * *Cynodon dactylon* - Bermuda grass
- * *Digitaria sanguinalis* - hairy crabgrass
- Distichlis spicata* - salt grass
- * *Lamarckia aurea* - goldentop
- Leymus triticoides* - beardless wild rye
- * *Lolium perenne* - perennial ryegrass
- * *Poa sp.* - bluegrass
- * *Polypogon monspeliensis* - annual rabbit-foot grass
- * *Vulpia myuros* - rattail fescue

TYPHACEAE - CATTAIL FAMILY

Typha latifolia - broad-leaved cattail

- * signifies introduced (non-native) species

APPENDIX B

WILDLIFE SPECIES OBSERVED OR DETECTED ONSITE

AMPHIBIANS

PLETHODONTIDAE - LUNGLESS SALAMANDERS

Batrachoseps pacificus - Pacific slender salamander

BUFONIDAE - TRUE TOADS

Bufo boreas - western toad

HYLIDAE - TREEFROGS

Hyla regilla - Pacific treefrog

RANIDAE - TRUE FROGS

* *Rana catesbeiana* - bullfrog

REPTILES

IGUANIDAE - IGUANID LIZARDS

Phrynosoma coronatum - coast horned lizard

Sceloporus occidentalis - western fence lizard

Uta stansburiana - side-blotched lizard

SCINCIDAE - SKINKS

Eumeces skiltonianus - western skink

TEIIDAE - WHIPTAIL LIZARDS

Cnemidophorus tigris - western whiptail

ANGUIDAE - ALLIGATOR LIZARDS

Gerrhonotus multicarinatus - southern alligator lizard

COLUBRIDAE - COLUBRID SNAKES

Masticophis lateralis - California whipsnake

APPENDIX B (Continued)

VIPERIDAE - VIPERS

Crotalus ruber - red-diamond rattlesnake

BIRDS

ARDEIDAE - HERONS

Ardea herodias - great blue heron

Bubulcus ibis - cattle egret

Egretta thula - snowy egret

Nycticorax nycticorax - black-crowned night-heron

ANATIDAE - WATERFOWL

Anas platyrhynchos - mallard

CATHARTIDAE - NEW WORLD VULTURES

Cathartes aura - turkey vulture

ACCIPITRIDAE - HAWKS

Accipiter cooperii - Cooper's hawk

Buteo jamaicensis - red-tailed hawk

Buteo lineatus - red-shouldered hawk

Circus cyaneus - northern harrier

Elanus caeruleus - white-tailed kite

FALCONIDAE - FALCONS

Falco sparverius - American kestrel

PHASIANIDAE - PHEASANTS & QUAILS

Callipepla californica - California quail

RALLIDAE - RAILS & GALLINULES

Fulica americana - American coot

CHARADRIIDAE - PLOVERS

Charadrius vociferus - killdeer

APPENDIX B (Continued)

COLUMBIDAE - PIGEONS & DOVES

Columba livia - rock dove

Columbina passerina - common ground-dove

Zenaida macroura - mourning dove

CUCULIDAE - CUCKOOS & ROADRUNNERS

Geococcyx californianus - greater roadrunner

TYTONIDAE - BARN OWLS

Tyto alba - barn owl

STRIGIDAE - TRUE OWLS

Bubo virginianus - great horned owl

Otus kennicottii - western screech owl

CAPRIMULGIDAE - GOATSUCKERS

Chordeiles acutipennis - lesser nighthawk

TROCHILIDAE - HUMMINGBIRDS

Calypte anna - Anna's hummingbird

Calypte costae - Costa's hummingbird

PICIDAE - WOODPECKERS

Colaptes auratus - northern flicker

Melanerpes formicivorus - acorn woodpecker

Picoides nuttallii - Nuttall's woodpecker

TYRANNIDAE - TYRANT FLYCATCHERS

Empidonax difficilis - Pacific-slope flycatcher

Myiarchus cinerascens - ash-throated flycatcher

Sayornis nigricans - black phoebe

Tyrannus verticalis - western kingbird

HIRUNDINIDAE - SWALLOWS

Hirundo pyrrhonota - cliff swallow

CORVIDAE - JAYS & CROWS

Aphelocoma coerulescens - scrub jay

APPENDIX B (Continued)

Corvus brachyrhynchos - American crow
Corvus corax - common raven

PARIDAE - TITMICE

Parus inornatus - oak titmouse

AEGITHALIDAE - BUSHTITS

Psaltriparus minimus - bushtit

TROGLODYTIDAE - WRENS

Thryomanes bewickii - Bewick's wren
Troglodytes aedon - house wren

MUSCICAPIDAE - KINGLETS, GNATCATCHERS, THRUSHES & BABBLERS

Chamaea fasciata - wrentit
Poliophtila californica - California gnatcatcher

MIMIDAE - THRASHERS

Mimus polyglottos - northern mockingbird
Toxostoma redivivum - California thrasher

PTILOGONATIDAE - SILKY-FLYCATCHERS

Phainopepla nitens - phainopepla

LANIIDAE - SHRIKES

Lanius ludovicianus - loggerhead shrike

STURNIDAE - STARLINGS

* *Sturnus vulgaris* - European starling

VIREONIDAE - VIREOS

Vireo bellii - Bell's vireo
Vireo huttoni - Hutton's vireo

EMBERIZIDAE - WOOD WARBLERS, TANAGERS, BUNTINGS & BLACKBIRDS

Agelaius phoeniceus - red-winged blackbird
Aimophila ruficeps - rufous-crowned sparrow
Ammodramus savannarum - grasshopper sparrow

APPENDIX B (Continued)

Chondestes grammacus - lark sparrow
Dendroica petechia - yellow warbler
Geothlypis trichas - common yellowthroat
Guiraca caerulea - blue grosbeak
Icterus cucullatus - hooded oriole
Icteria virens - yellow-breasted chat
Icterus galbula - northern oriole
Melospiza melodia - song sparrow
Molothrus ater - brown-headed cowbird
Passerina amoena - lazuli bunting
Pheucticus melanocephalus - black-headed grosbeak
Pipilo crissalis - California towhee
Pipilo erythrophthalmus - spotted towhee
Pipilo fuscus - brown towhee
Sturnella neglecta - western meadowlark
Wilsonia pusilla - Wilson's warbler

FRINGILLIDAE - FINCHES

Carpodacus mexicanus - house finch
Carduelis tristis - American goldfinch

MAMMALS

DIDELPHIDAE - NEW WORLD OPOSSUMS

* *Didelphis virginiana* - Virginia opossum

MOLOSSIDAE - FREE-TAILED BATS

Eumops perotis - western mastiff bat

LEPORIDAE - HARES & RABBITS

Sylvilagus bachmani - brush rabbit

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi - California ground squirrel

GEOMYIDAE - POCKET GOPHERS

Thomomys bottae - Botta's pocket gopher

APPENDIX B (Continued)

HETEROMYIDAE - POCKET MICE & KANGAROO RATS

Dipodomys agilis - agile (Pacific) kangaroo rat

MURIDAE - RATS & MICE

Microtis californicus - California vole

* *Mus musculus* - house mouse

Neotoma sp. - woodrat

Peromyscus sp. - mouse

CANIDAE - WOLVES & FOXES

Canis latrans - coyote

Urocyon cinereoargenteus - gray fox

PROCYONIDAE - RACCOONS & RELATIVES

Procyon lotor - common raccoon

MUSTELIDAE - WEASELS, SKUNKS, & OTTERS

Mephitis mephitis - striped skunk

FELIDAE - CATS

Lynx rufus - bobcat

CERVIDAE - DEERS

Odocoileus hemionus - mule deer

APPENDIX C

SPECIES SENSITIVITY CATEGORIES

Federal (1996)

Endangered. Taxa threatened throughout all or a significant portion of their range.

Threatened. Taxa likely to become endangered in the foreseeable future.

Category 1. Taxa for which the USFWS has enough information on biological vulnerability and threat(s) to support listing them as endangered or threatened species.

Category 2. A category formerly used for taxa for which information in possession of the USFWS indicated that listing as endangered or threatened may be appropriate but for which sufficient data to support the preparation of rules were unavailable. This category has been eliminated owing to its frequent misinterpretation.

Category 3. Taxa that were once considered for listing as endangered or threatened, but are currently not receiving such consideration. These taxa are included in one of the following three subcategories.

Subcategory 3A: Taxa presumed to be extinct.

Subcategory 3B: Taxa whose names do not meet the Endangered Species Act's legal definition of species.

Subcategory 3C: Taxa now considered to be more widespread than originally thought.

Note: The taxa in Categories 1 and 2 are candidates for possible addition to the list of endangered and threatened species. The USFWS encourages their consideration in environmental planning.

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APPENDIX C (Continued)

State of California (1990)

Endangered. Taxa which are in serious danger of becoming extinct throughout all, or a significant portion, of their range due to one or more causes including loss of habitat, change in habitat, over exploitation, predation, competition, or disease (Section 2062 of the Fish and Game Code).

Threatened. Taxa which, although not presently threatened with extinction, are likely to become endangered species in the foreseeable future (Section 2067 of the Fish and Game Code).

Rare. Taxa which, although not presently threatened with extinction, are present in such small numbers throughout their range that they may become endangered if the present environment worsens (Section 1901 of the Fish and Game Code).

Candidate. Taxa which the Fish and Game Commission has formally noticed as being under review by the Department in addition to the list of threatened and endangered species.

California Native Plant Society (1994)

Lists

- 1A: Presumed Extinct in California
- 1B: Rare or Endangered in California and Elsewhere
- 2: Rare or Endangered in California, More Common Elsewhere
- 3: Need More Information
- 4: Plants of Limited Distribution

Note: Plants on CNPS list 1B meet California Department of Fish and Game Criteria for Rare or Endangered listing.

R-E-D code

- R (Rarity)
- 1- Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
- 2- Occurrence confined to several populations or to one extended population.
- 3- Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

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APPENDIX C (Continued)

E (Endangerment)

- 1- Not endangered
- 2- Endangered in a portion of its range
- 3- Endangered throughout its range








D (Distribution)

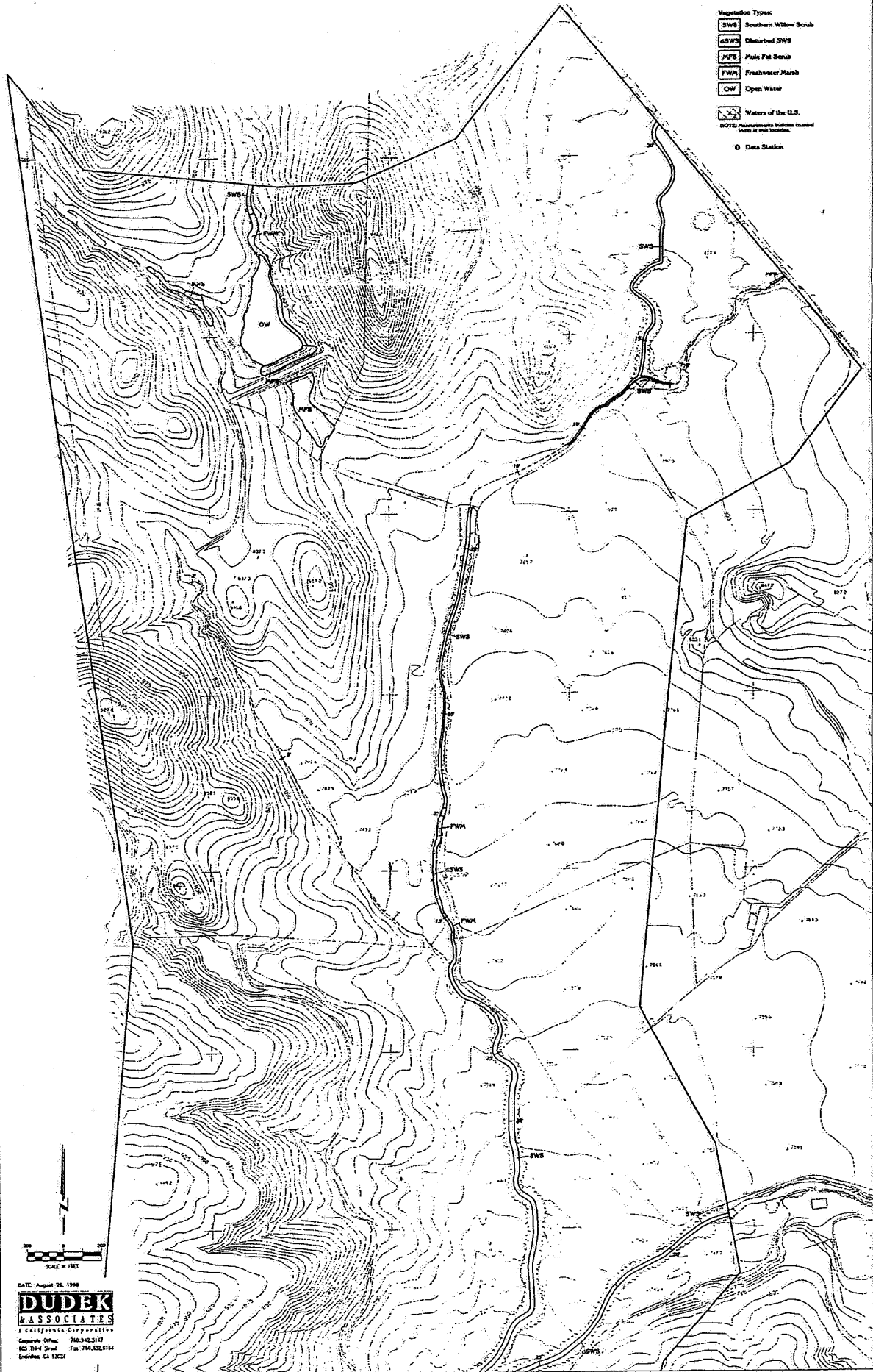
- 1- More or less widespread outside of California
- 2- Rare outside California
- 3- Endemic to California

Jamul Creek

Jamul Creek Wetland Delineation Map

SHEET 1

- Vegetation Types:
-  Southern Willow Scrub
 -  Disturbed SWS
 -  Mule Fat Scrub
 -  Freshwater Marsh
 -  Open Water
-  Waters of the U.S.
- NOTE: Measurements indicate channel width at most locations.
-  Data Station



DATE: August 26, 1998

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Jamul Creek Biological Resources Map

SHEET 1

Vegetation Types:

- CSS Coastal Sage Scrub
- SWS Southern Willow Scrub
- SWS* CDFG Jurisdictional SWS
- MFS Milk Fat Scrub
- FWM Freshwater Marsh
- RUD Ruderal
- DH Disturbed Habitat

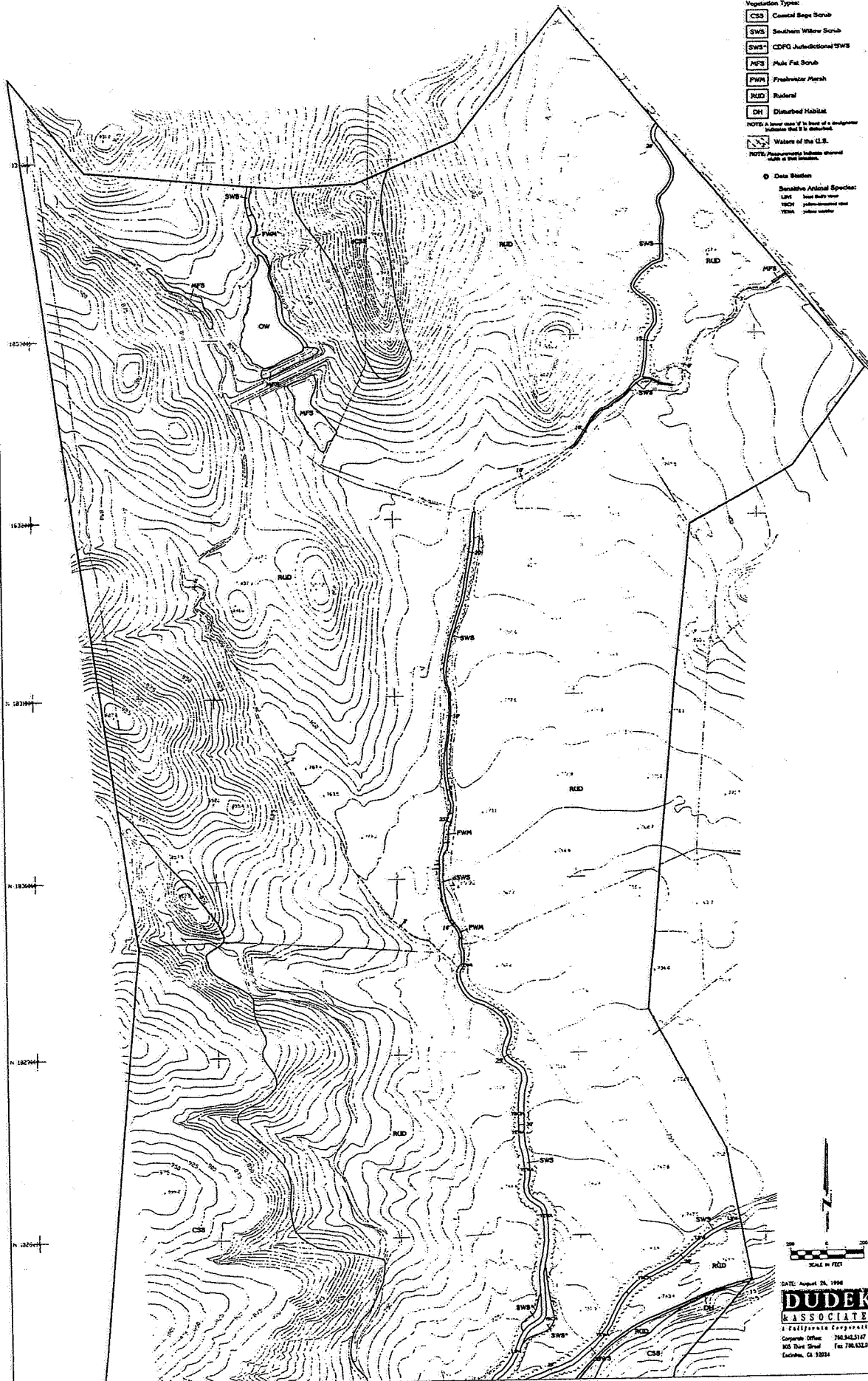
NOTE: A land use 'Y' is based on a mapmaker's estimate that is indicated.

W Waters of the U.S.

NOTE: Measurements indicate stream width at that location.

○ Data Station

- Sensible Annual Spectral:
- LIW1 Inset South tower
- WCH1 Intermediate tower
- WWS1 Upper tower



DATE: August 28, 1998

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DATE: August 26, 1998

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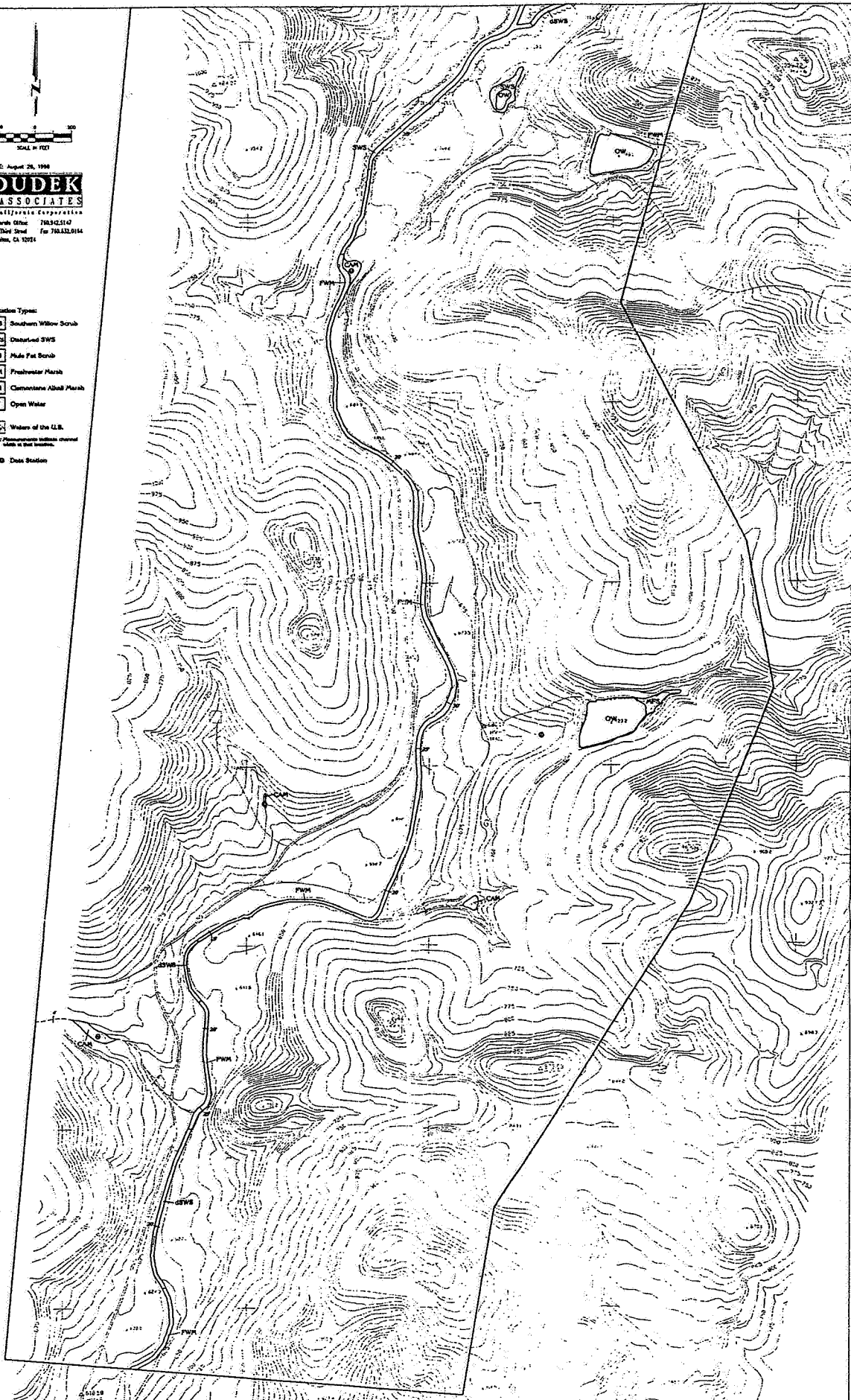
Coronado Office: 761.932.3147
485 Third Street, San Diego, CA 92101
San Diego Office: 761.432.0914

Vegetation Types:

-  SWR Southern Willow Scrub
-  SWS Disturbed SWS
-  MFS Mule Fat Scrub
-  PWH Freshwater Marsh
-  CAM Cismontane Alkali Marsh
-  OW Open Water

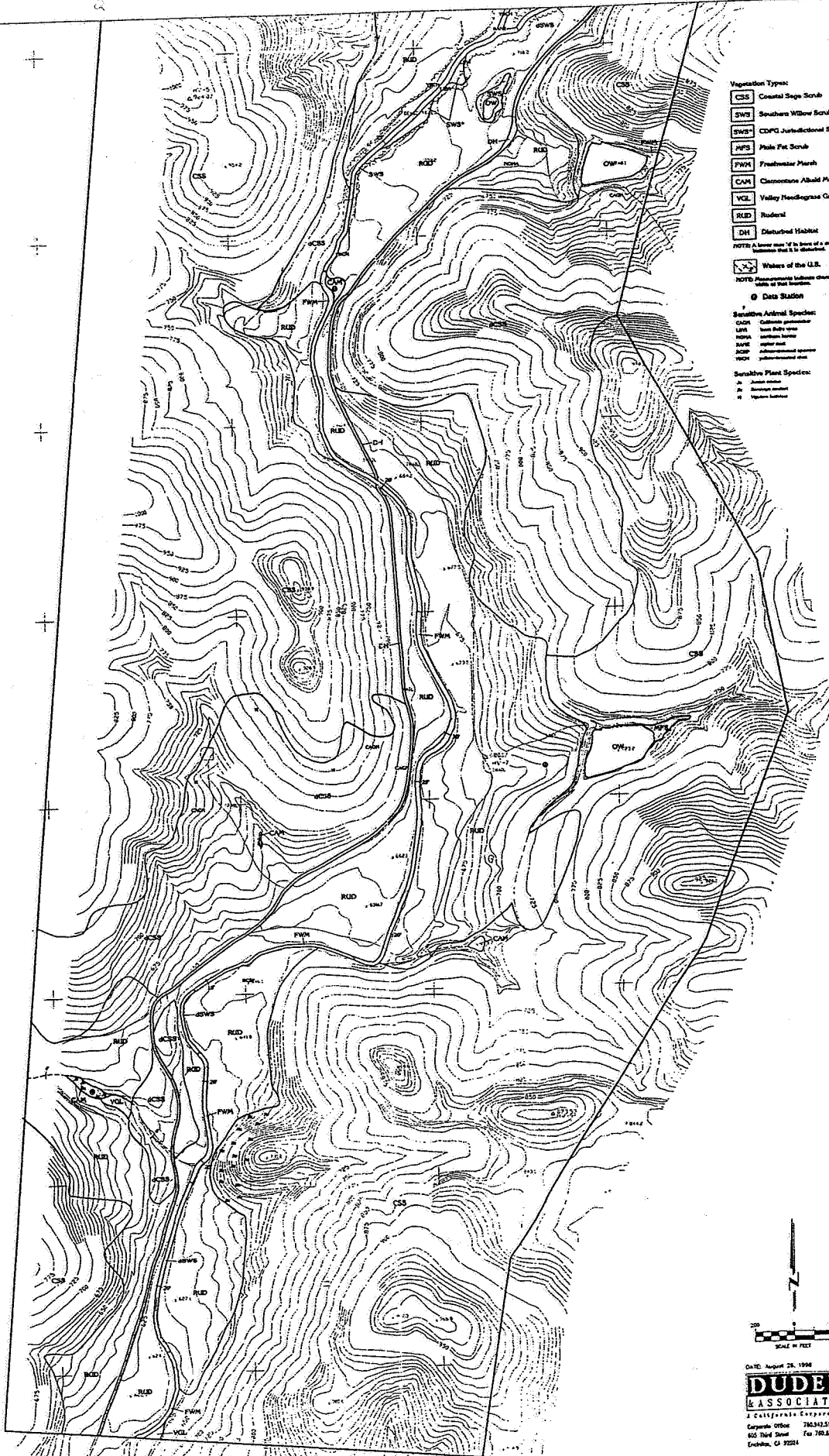
 Waters of the U.S.
NOTE: Measurements within channel
shown in feet.

 Data Station



SHEET 2

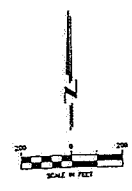
Jamul Creek Wetland Delineation Map



- Vegetation Types:**
- CSS** Coastal Sage Scrub
 - SWS** Southern Willow Scrub
 - SWSP** CDPG Jurisdictional SWS
 - NFS** Pile Fat Scrub
 - FWM** Freshwater Marsh
 - CAM** Ceanothus Albald Marsh
 - VCL** Valley Headgrass Grassland
 - RUD** Ruderal
 - DH** Disturbed Habitat
- Water of the U.S.**
- Data Station**
- Sensitive Animal Species:**
- GRN** Golden parakeet
 - LRN** Least flycatcher
 - MDN** Mountain tanager
 - WBN** Western bluebird
 - WCP** Western crow
 - WSP** Western sparrow
 - WCH** Western chipping sparrow
- Sensitive Plant Species:**
- AS** Anemone
 - ASB** Anemone bulb
 - ASL** Anemone leaf

NOTE: A line may be the base of a mountain range that is distributed.

NOTE: Measurements taken around state of that location.



DATE: August 28, 1998

DUDEK ASSOCIATES
A California Corporation

Corporate Office: 765.512.5167
635 Third Street, San Diego, CA 92101
Tel: 765.512.5164
Fax: 765.512.5164

SHEET 2

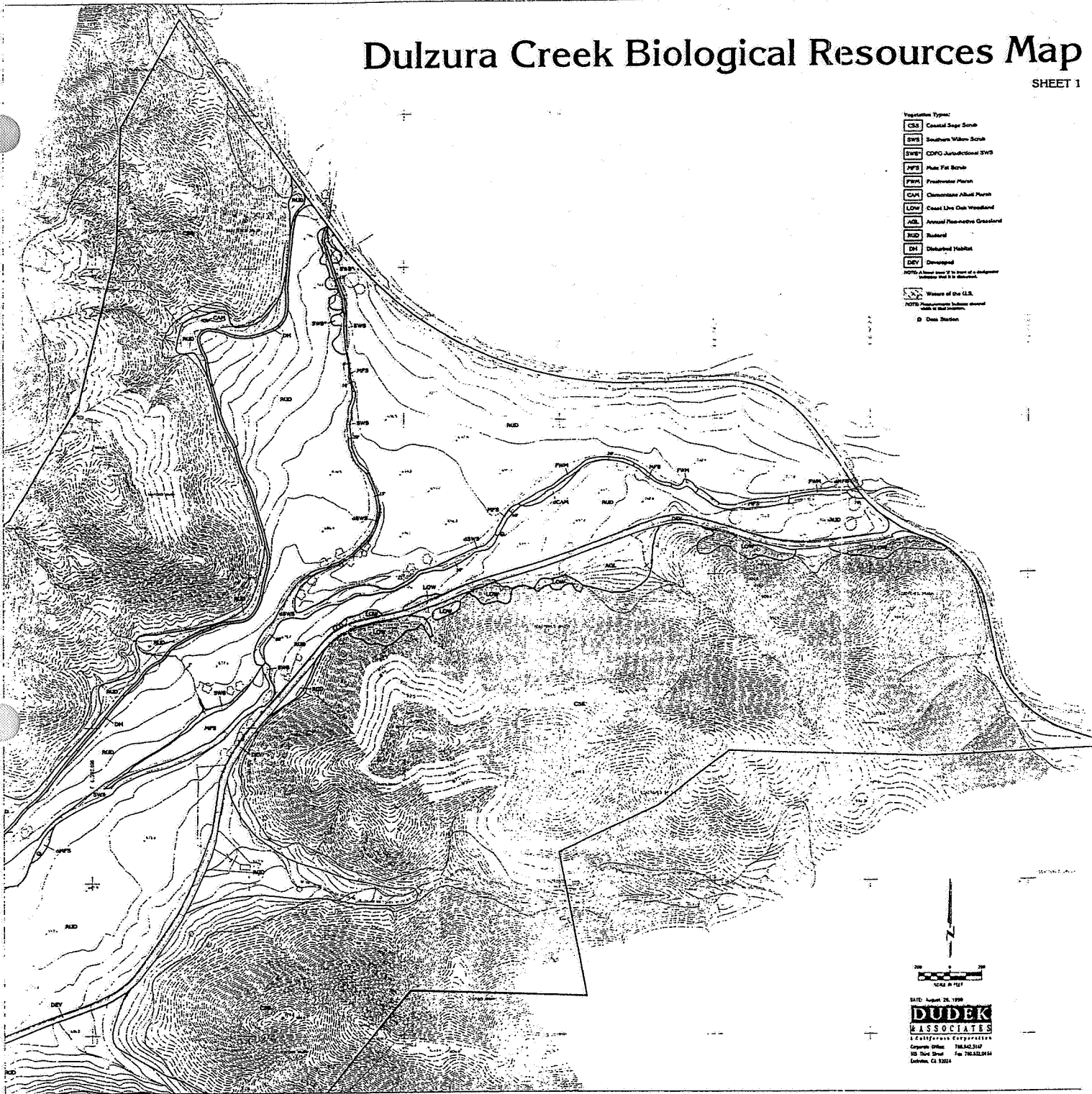
Jamul Creek Biological Resources Map

Dulzura Creek

Dulzura Creek Biological Resources Map

SHEET 1

- Vegetation Types:
- CSJ** Coastal Sage Scrub
 - SWJ** Southern Willow Scrub
 - SWR** CDFG Jurisdictional SWJ
 - PFJ** Plantain Field Scrub
 - FRJ** Freshwater Marsh
 - CAJ** Chamaecyparis Alluvial Marsh
 - LDJ** Coast Live Oak Woodland
 - ADJ** Annual Non-native Grassland
 - RND** Rangeland
 - DHJ** Disturbed Habitat
 - DEV** Developed
- NOTE: Areas not to be used as a reference unless noted to the contrary.
- © Where of the U.S.S.
- NOTE: Measurements shown are based on the datum.
- © Data Source



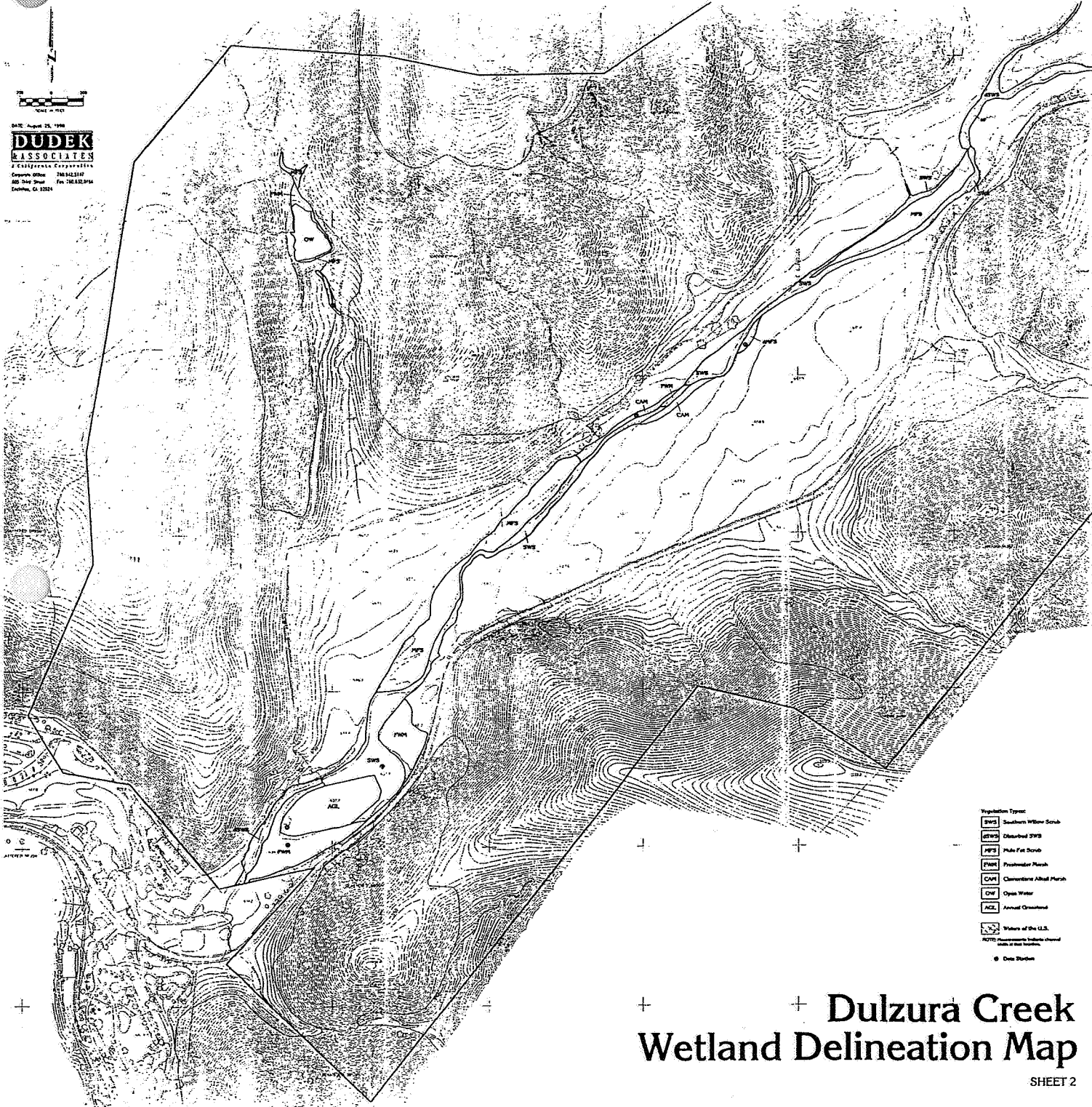
DATE: August 26, 1998

DUDEK ASSOCIATES
A California Corporation

Corporate Office: 790.342.2147
195 Third Street, San Diego, CA 92101
Fax: 790.432.8154



DATE: August 23, 1998
DUDEK ASSOCIATES
21115 WILSON AVENUE
COSTA MESA, CA 92626
949-261-1111
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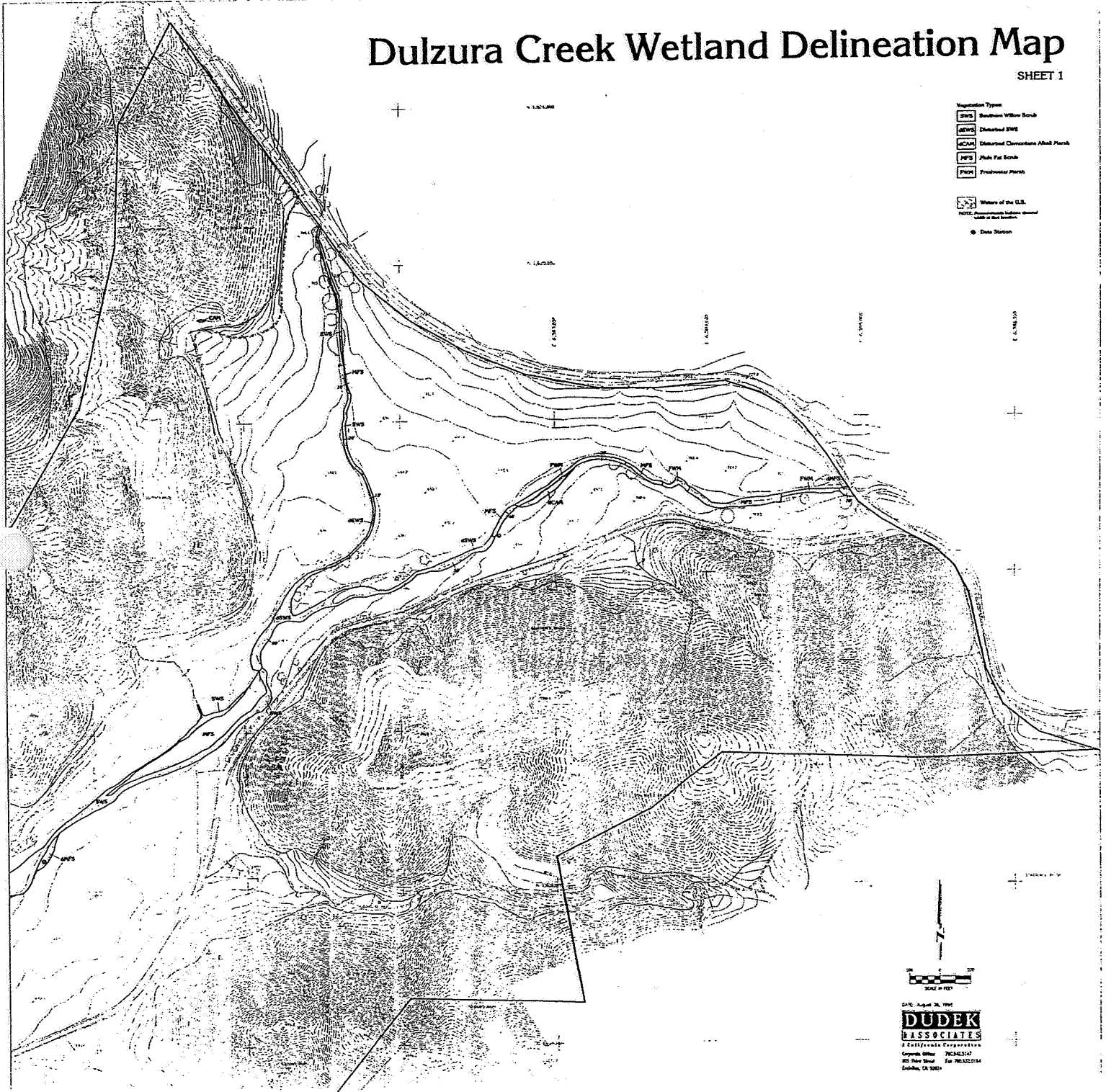
- Vegetation Types:
- SWR1 Southern Willow Scrub
 - SWR2 Disturbed SWR
 - PFS Puka Fat Scrub
 - PFR Presaturated Marsh
 - CAM Cismarine Alkal Marsh
 - OW Open Water
 - ACL Annual Cismarine
 - Wetlands of the U.S.
- NOTE: Measurements indicate channel width at low flow.
- Data Station

Dulzura Creek Wetland Delineation Map

SHEET 2

Dulzura Creek Wetland Delineation Map

SHEET 1

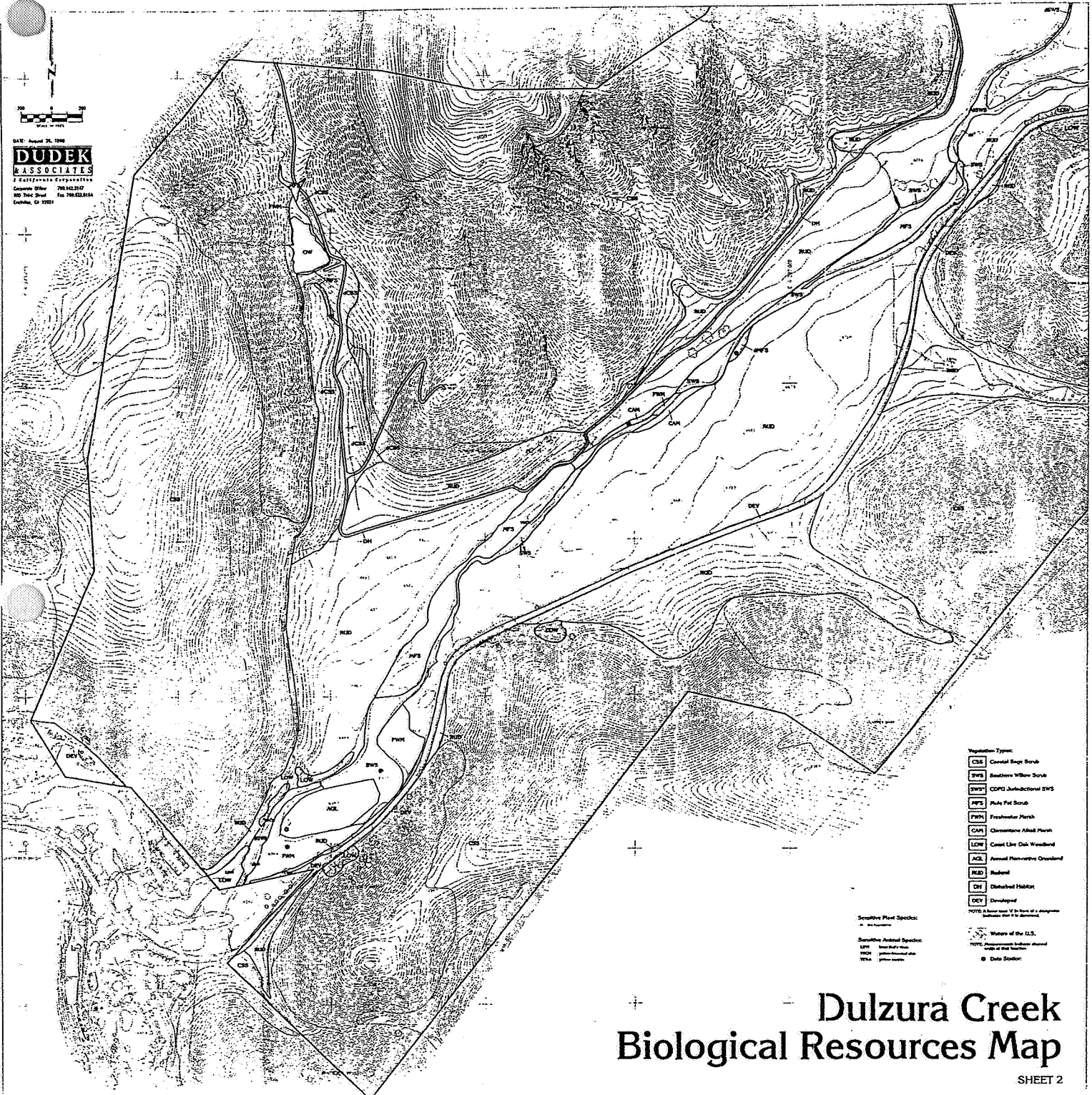


- Vegetation Types:
- SWSS Southern Willow Scrub
 - DWS Disturbed DWS
 - DCAP Disturbed Chlorophyllous Aired Plants
 - PFS Phak Fui Scrub
 - FWS Freshwater Marsh
- Waters of the U.S.
NOTE: Shaded areas shown
are not to be removed.
- Data Station



DATE: August 26, 1997
DUDEK ASSOCIATES
A California Corporation
Corporate Office: 7034 E. 15th St.
Suite 100, Torrance, CA 90503
Tel: 310.532.1111

DATE: August 26, 1998
DUDEK ASSOCIATES
 Environmental Consultants
 Corporate Office 708.942.2107
 800 Third Street Fax 708.922.8154
 Eastlake, IL 60127



- Vegetation Types:**
- CSM Coastal Sage Scrub
 - SWF Southern Willow Scrub
 - SWF CDFJ Jurisdictional SWF
 - WFS White Pine Scrub
 - FWH Freshwater Marsh
 - CAH Chorro Valley Alkali Marsh
 - LOH Coast Live Oak Woodland
 - ACR Annual Puccinellia Grassland
 - RDH Redbud
 - DH Disturbed Habitat
 - DEV Developed
- NOTE: A better map of the form of J. Jurisdictional SWF is to be determined.
- Sensitive Plant Species:**
in parentheses
- Sensitive Animal Species:**
 LHM Least Tern
 WSA Western Sandpiper
 WSA Western Gull
- Waters of the U.S.**
NOTE: Jurisdictional SWF areas are shaded in light blue.
- Data Source

Dulzura Creek Biological Resources Map

SHEET 2

Appendix C:
Wetland Delineation Verification Letter



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

332 S. Juniper Street, Suite 110
Escondido, CA 92025
(760) 745-2061 Fax: (760) 745-3210

December 18, 1998

Sherri L. Miller
Dudek & Associates, Inc.
605 Third Street
Encinitas, CA 92024

RE: Rancho Jamul Mitigation Bank Wetlands Delineation Certification

Dear Ms. Miller:

This is to notify you that as of the date of this letter, I am making a preliminary technical determination that fields shown in Section II of the attached NRCS-CPA-026E "Highly Erodible Land and Wetland Conservation Determination" Form contain wetland determinations with the labels as indicated. These areas met the criteria of hydric soils, wetland plants and soil or surface wetness. This determination is based on the wetland delineation completed by Dudek & Associates, Inc. on July 24 & 27, 1998. This determination is only for the areas identified on the attached map(s). Areas outside of the project area(s) may also include wetlands. This wetland certification does not include "other waters of the United States" as defined by the United States Corps of Engineers, which include but are not limited to tidal waters, lakes, rivers, streams, mud flats and intermittent and perennial streams which are regulated under the Clean Water Act. Contact the US Corps of Engineers regarding needs for permits.

Since this determination is potentially adverse to you or your client, the NRCS has an appeal process available to you. Under the appeals process, this preliminary technical determination will become final within 30 days unless you request either of the following options:

- (1) A field visit be made by our office to review with you the basis for our preliminary technical determination, answer any questions you have concerning the determination and to gather additional information from you concerning the preliminary determination.
- (2) Mediation be used in an attempt to settle your concerns with the preliminary technical determination. If you wish to request mediation, contact me for additional information. If you choose to use mediation, NRCS will pay up to one-half of the costs that are appropriate and reasonable which are associated with securing the services of a trained mediator, when the services are provided on other than a voluntary basis. The NRCS will have final discretion over what is considered appropriate and reasonable.

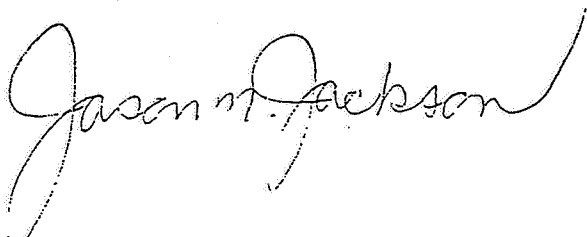
The Natural Resources Conservation Service,
formerly the Soil Conservation Service,
is an agency of the
United States Department of Agriculture

AN EQUAL OPPORTUNITY EMPLOYER

A final technical determination will be issued within 30 days after the field visit, if one is requested, and/or within 30 days following the completion of mediation. If neither is requested, this preliminary determination becomes final on January 17, 1998. The final technical determination, whether it is a result of the expiration of the 30 day period following receipt of this preliminary technical determination or receipt of a final determination may be appealed to the Farm Services Agency, Riverside/San Diego County Committee at the address below. If you take no action during the preliminary 30 day period, your appeal rights begin December 18, 1998 and ends on January 17, 1998. We will forward a copy of our administrative record to the County Committee for their use in deciding your appeal, should you decide to appeal to the County Committee.

Riverside/San Diego FSA County Committee
82-901 Bliss
Indio CA 92201

Sincerely,

A handwritten signature in cursive script that reads "Jason N. Jackson". The signature is written in dark ink and is positioned above the typed name.

JASON N. JACKSON
District Conservationist

Enclosures

U.S.D.A. Natural Resources Conservation Service	NRCS-CPA-026 (June 91)	1. Name and Address of Person Wildlands, Inc. c/o Dudek & Associates 605 Third St Encinitas-CA92024	2. Date of Request 12/18/98
HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION		3. County San Diego	
		4. Name of USDA Agency or Person Requesting Determination Dudek & Associates for Wildlands, Inc.	
		5. Farm No. and Tract No. 01862, 01862	

SECTION I - HIGHLY ERODIBLE LAND

	FIELD NO.(s)	TOTAL ACRES
6. Is soil survey now available for making a highly erodible land determination? Yes <input type="checkbox"/> No <input type="checkbox"/>		
7. Are there highly erodible soil map units on this farm? Yes <input type="checkbox"/> No <input type="checkbox"/>		
8. List highly erodible fields that, according to ASCS records, were used to produce an agricultural commodity in any crop year during 1981 - 1985.		
9. List highly erodible fields that have been or will be converted for the production of agricultural commodities and, according to ASCS records, were not used for this purpose in any crop year during 1981 - 1985; and were not enrolled in a USDA set-aside or diversion program.		
10. This Highly Erodible Land determination was completed in the: Office <input type="checkbox"/> Field <input type="checkbox"/>		

SECTION II - WETLAND

	FIELD NO.(s)	TOTAL ACRES
11. Are there hydric soils on this farm? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
12. Wetlands (W), including abandoned wetlands, or Farmed Wetlands (FW) or Farmed Wetlands Pasture (FWP). Wetlands may be farmed under natural conditions. Farmed Wetlands and Farmed Wetlands Pasture may be farmed and maintained in the same manner as they were prior to December 23, 1985, as long as they are not abandoned.	1	44.8
13. Prior Converted Cropland (PC). Wetlands that were converted prior to December 23, 1985. The use, management, drainage, and alteration of prior converted cropland (PC) are not subject to wetland conservation provisions unless that area reverts to wetland as a result of abandonment.		
14. Artificial Wetlands (AW). Artificial wetlands includes irrigation-induced wetlands. These wetlands are not subject to wetland conservation provisions.		
15. Minimal Effect Wetlands (MIW). These wetlands are to be farmed according to the minimal-effect agreement signed at the time the minimal-effect determination was made.		
16. Mitigation Wetlands (MIW). Wetlands on which a person is actively mitigating a frequently cropped area or a wetland converted between December 23, 1985 and November 28, 1990.		
17. Restoration with Violation (RVW+year). A restored wetland that was in violation as a result of conversion after November 28, 1990, or the planting of an agricultural commodity or forage crop.		
18. Restoration without Violation (RSW). A restored wetland converted between December 23, 1985 and November 28, 1990, on which an agricultural commodity has not been planted.		
19. Replacement Wetlands (RPW). Wetlands which are converted for purposes other than to increase production, where the wetland values are being replaced at a second site.		
20. Good Faith Wetlands (GFW+year). Wetlands on which ASCS has determined a violation to be in good faith and the wetland has been restored.		
21. Converted Wetlands (CW). Wetland converted after December 23, 1985 and prior to November 28, 1990. In any year that an agricultural commodity is planted on these Converted Wetlands, you will be ineligible for USDA benefits.		
22. Converted Wetland (CW+year). Wetlands converted after November 28, 1990. You will be ineligible for USDA program benefits until this wetland is restored.		
23. Converted Wetland Non-Agricultural use (CWNA). Wetlands that are converted for trees, fish production, shrubs, cranberries, vineyards or building and road construction.		
24. Converted Wetland -Technical Error (CWTE). Wetlands that were converted as a result of incorrect determination by NRCS.		
25. The planned alteration measures on wetlands in fields _____ are considered maintenance and are in compliance with FSA.		
26. The planned alteration measures on wetlands in fields _____ are not considered maintenance and if installed will cause the area to become a Converted Wetland (CW). See item 22 for information on CW+year.		
27. The wetland determination was completed in the office <input type="checkbox"/> field <input checked="" type="checkbox"/> and was delivered <input type="checkbox"/> mailed <input checked="" type="checkbox"/> to the person on <u>12/18/98</u>		
28. _____ marks The original wetlands delineation was done by Dudek & Associates, Inc. on July 24 & 27, 1998.		

29. I certify that the above determination is correct and adequate for use in determining eligibility for USDA program benefits, and that wetland hydrology, hydric soils, and biophysical vegetation under normal circumstances exists on all areas outlined as Wetlands, Farmed Wetlands, and Farmed Wetlands Pasture	30. Signature of NRCS District Conservationist <i>Garrett Jackson</i>	31. Date 12/18/98
---	--	----------------------

HIGHLY ERODIBLE LAND AND WETLAND
CONSERVATION DETERMINATION

Name: Wildlands, Inc.
County: San Diego

Tract: 01862 Farm: 01862
Request Date: 12/02/98 FSA Farm No.:

Wetlands Explanation

Wetland Label	Explanatory Comments
W	<p>Wetland; Description: An area that meets the wetland criteria including wetland farmed under natural conditions. Includes abandoned wetland resulting from abandonment of other wetland labels; Authorized Cropping: May be farmed under natural conditions without removal of woody vegetation; Authorized Maintenance: At level needed to maintain original system on related farmed wetland, farmed wetland pasture, and prior converted cropland. Must not convert additional wetlands or exceed "original scope and effect"; If you plan to clear, drain, fill, level or manipulate these areas contact NRCS* and COE**.</p>

* Natural Resources Conservation Service
** Corps of Engineers

Original wetland delineation was done by Dudek & Associates, Inc. on July 24 & 27, 1998.

I certify that the above determinations are correct and were conducted in accordance with policies and procedures contained in the National Food Security Act Manual.

Signature Designated Conservationist

Date

Jason N. Jackson
Jason N. Jackson

Dec 18, 1998

All USDA programs and services are available without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

HIGHLY ERODIBLE LAND AND WETLAND
 CONSERVATION DETERMINATION

Name: Wildlands, Inc. Tract: 01862 Farm: 01862
 County: San Diego Request Date: 12/02/98 FSA Farm No.:

Section I - Highly Erodible Land

Fields in this section have undergone a determination of whether they were highly erodible land (HEL) or not; fields for which an HEL Determination has not been completed are not listed. In order to be eligible for USDA benefits, a person must be using an approved conservation system on all HEL.

Field	HEL(Y/N)	Sodbusted(Y/N)	Acres	Determination Date
-------	----------	----------------	-------	--------------------

Section II - Wetlands

Fields in this section have had wetland determinations completed. See the Wetlands Explanation section for additional information regarding allowable activities under the wetland conservation provisions of the Farm Bill and Section 404 of the Clean Water Act.

ld	Wetland Label	Acres	Determination Date	Certification Date
1	W	44.8	12/18/98	12/18/98
1	NW	2142.2	12/18/98	12/18/98

Wetlands Explanation

Wetland Label	Explanatory Comments
NW	Non-wetland; Description: An area that does not meet wetland criteria under natural conditions or wetlands that were converted prior to 12/23/85, not cropped prior to 12/23/85, does not meet wetland criteria, and has not been abandoned; Authorized cropping: No Restrictions; Authorized Maintenance: No restrictions unless the manipulation would convert adjacent wetland labels.



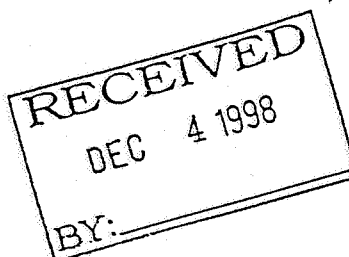
Engineering, Planning,
Environmental Sciences and
Management Services

Corporate Office:
605 Third Street
Encinitas, California 92024

760.942.5147
Fax 760.632.0164

December 1, 1998

Mr. Jason Jackson
Natural Resources Conservation Service
332 S. Juniper Street, Suite 110
Escondido, California 922025



1825-02

**Re: Rancho Jamul Mitigation Bank, San Diego County, California
Wetland Delineation Confirmation**

Dear Mr. Jackson,

On behalf of Wildlands, Inc., Dudek & Associates, Inc. (DUDEK), is submitting this request for a wetland delineation confirmation for the proposed Rancho Jamul mitigation bank project site. The proposed project occupies approximately 2,187 acres of open land along Jamul Creek and Dulzura Creek, extending south and southwest, respectively, from Highway 94 in San Diego County, California (Figures 1 and 2).

A delineation of "waters of the United States" and wetlands under the jurisdiction of the U.S. Army Corps of Engineers (Corps) was conducted on July 24 and 27 and August 5, 1998, (see attached drawings and data stations). Mr. David Zoutendyk of the Corps conducted a site visit on September 3, 1998. The wetlands were delineated in accordance with the *U.S. Army Corps of Engineers 1987 Manual for the Delineation of Wetlands (TR Y-87-1)*. Soils onsite include Placentia series (PeC, PeC2, PfC), a sandy loam; Ramona series (RaD2, RaB), a sandy loam; Escondido series (EsC, EsE2, EsD2), a very fine sandy loam; Grangeville series (GoA), a fine sandy loam; Friant series (FxG, FxE), a rocky fine sandy loam; Visalia series (VaA, VaB, VaC), a sandy loam; Greenfield series (GrA), a sandy loam; Las Posas series (LrE2, LpD2, LrE), a fine sandy loam; Olivenhain series (OhE), a cobbly loam; Chino series (CkA), a silt loam; and rough, broken land (RuG) (Bowman 1973).

The proposed project site contains approximately 52.2 acres of jurisdictional lands: 11.6 acres of mulefat scrub wetlands, 0.3 acre of disturbed mulefat scrub wetlands, 16.0 acres of southern willow scrub wetlands, 5.0 acre of disturbed southern willow scrub wetlands, 1.5 acres of cismontane alkali marsh, 0.3 acre of disturbed cismontane alkali marsh, 10.1 acres of freshwater marsh, 6.7 acres of open water ponds and 0.7 acre of unvegetated waters of the United States.

The mulefat scrub is dominated by mulefat (*Baccharis salicifolia*) and occurs within Jamul Creek and Dulzura Creek and along the margins of stock ponds. Herbaceous species include African umbrella sedge (*Cyperus involucratus*), willow weed (*Polygonum lapathifolium*), water cress (*Rorippa nasturtium-aquaticum*), wild heliotrope (*Heliotropium curassavicum*) and curly dock (*Rumex crispus*).

The southern willow scrub occurs within the Jamul Creek and Dulzura Creek channels. This vegetation type is dominated by arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), but also includes Fremont cottonwood (*Populus fremontii*), seep monkey flower (*Mimulus guttatus*), Hooker's evening primrose (*Oenothera elata* ssp. *hookeri*), lowland cudweed (*Gnaphalium palustre*), rough cocklebur (*Xanthium strumarium*), western ragweed (*Ambrosia psilostachya*), saltgrass (*Distichlis spicata*), and annual rabbit-foot grass (*Polypogon monspeliensis*).

The cismontane alkali marsh occurs as several small patches onsite and is vegetated by saltgrass, yerba mansa (*Anemopsis californica*), spiny rush (*Juncus acutus*), annual rabbit-foot grass, curly dock, pale spikerush (*Eleocharis macrostachya*) and hyssop loosestrife (*Lythrum hyssopifolium*).

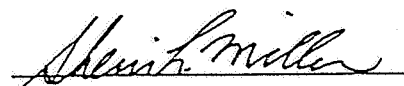
Freshwater marsh occurs within the Jamul Creek and Dulzura Creek channels and is dominated by broad-leaved cattail (*Typha latifolia*), African umbrella sedge, hyssop loosestrife, bulrush (*Scirpus californica*), giant creek nettle (*Urtica dioica*), Hooker's evening primrose, yellow waterweed (*Ludwigia peploides*) and water cress.

Hydrology in these wetland areas is indicated by the presence of surface water, sediment and drift lines and/or drainage patterns. Soils are typically of low chroma (one or two) with mottles.

Please contact me at your earliest convenience to arrange a site visit: (760) 942-5147.

Yours truly,

Dudek & Associates, Inc.



Sherri L. Miller
Senior Biologist

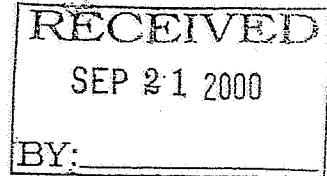
cc: David Zoutendyk, U.S. Army Corps of Engineers, w/out attachments
Greg Sutter/Greg DeYoung, Wildlands, Inc., w/out attachments

LITERATURE CITED

Bowman, R.H. 1973. *Soil Survey, San Diego Area, California, Part I*. United States Department of Agriculture. 104 pp. + appendices.



DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
SAN DIEGO FIELD OFFICE
16885 WEST BERNARDO DRIVE, SUITE 300A
SAN DIEGO, CALIFORNIA 92127



REPLY TO

September 18, 2000

Office of the Chief
Regulatory Branch

Wildlands, Inc.
Attention: Greg Sutter
5910 Auburn Blvd. Suite 17
Citrus Heights, California 95621

Dear Mr. Sutter:

Reference is made to your letter (No. 982015400-FT) dated July 12, 2000 in which you requested revision of the wetland delineation along Dulzura Creek at the Rancho Jamul Mitigation Bank, County of San Diego, California.

Based on the site visit conducted by Fari Tabatabai of my staff on May 25, 2000, we have determined that portions of the site originally designated as wetlands, does not meet the three-parameter wetland criteria. This area is approximately 2.7 acres, shown as the magneta-hatched area in your submittal (Figure 1 - Revised Delineation; See Attached). In consideration of the area eliminated as wetlands herein, and the area previously incorporated as wetlands, the total acreage of the restoration plan will remain approximately the same.

The receipt of your letter is appreciated. If you have any questions, please contact Fari Tabatabai of my staff at (213) 452-3291.

Sincerely,

Mark Durham
Chief, South Coast Section

July 12, 2000

Dr. Fari Tabatabai
U.S. ARMY CORPS OF ENGINEERS
P.O. Box 2711
Los Angeles, CA 90017



WILDLANDS, INC.

RE: Rancho Jamul Mitigation Bank Wetland Delineation Revision

Dear Fari:

Enclosed you will find two figures pertaining to our request for revision of the wetland delineation at the Rancho Jamul Mitigation Bank site. As we discussed previously, and reviewed with you in the field on May 25, an area included in the verified delineation along Dulzura Creek is actually upland and should not have been considered wetland. We are requesting revision of the delineation to clarify the extent of wetland (see Figure 1) and to adjust the wetland restoration plan accordingly (see Figure 2), as described below.

Figure 1: Revised Delineation. The magenta-hatched area in this figure represents the area that should be excluded from the originally delineated wetland. This area was determined from the field visit with you on May 25th and our subsequent measurements using a GPS instrument. The size of this area is 2.7 acres.

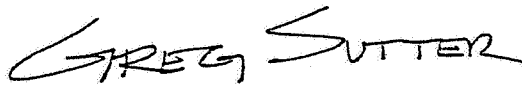
Figure 2: Revised Habitat Restoration Plan. This figure represents our proposed adjustment to the concept Habitat Restoration Plan (exhibit B of the Bank Enabling Instrument). The adjustment shows restoration in the area that was inaccurately depicted as wetland in the original delineation (2.7 acres). Please note that this figure is still at a conceptual level of detail since we are still in the process of creating detailed construction drawings. To date, this more detailed level of design indicates that some areas along Dulzura Creek targeted for restoration in the concept plan will not be included as wetland in the construction drawings. The amount of this wetland restoration area to be eliminated from the plans approximately balances with that added in the area

to be recharacterized as upland and incorporated into the restoration plan (2.7 acres). Thus, the total amount of restoration along Dulzura Creek will be approximately the same as that foreseen in the BEI.

While we are refining the precise locations of restoration along Dulzura Creek, we have not fundamentally changed the conceptual Habitat Restoration Plan and we are not requesting additional credits. As required in the BEI, actual credited acreage will be based on the as-built drawings.

If you have any questions, please call.

Sincerely,

A handwritten signature in black ink that reads "GREG SUTTER". The letters are slanted and connected in a cursive style.

Greg Sutter,
Restoration Director

cc. Eric Stein

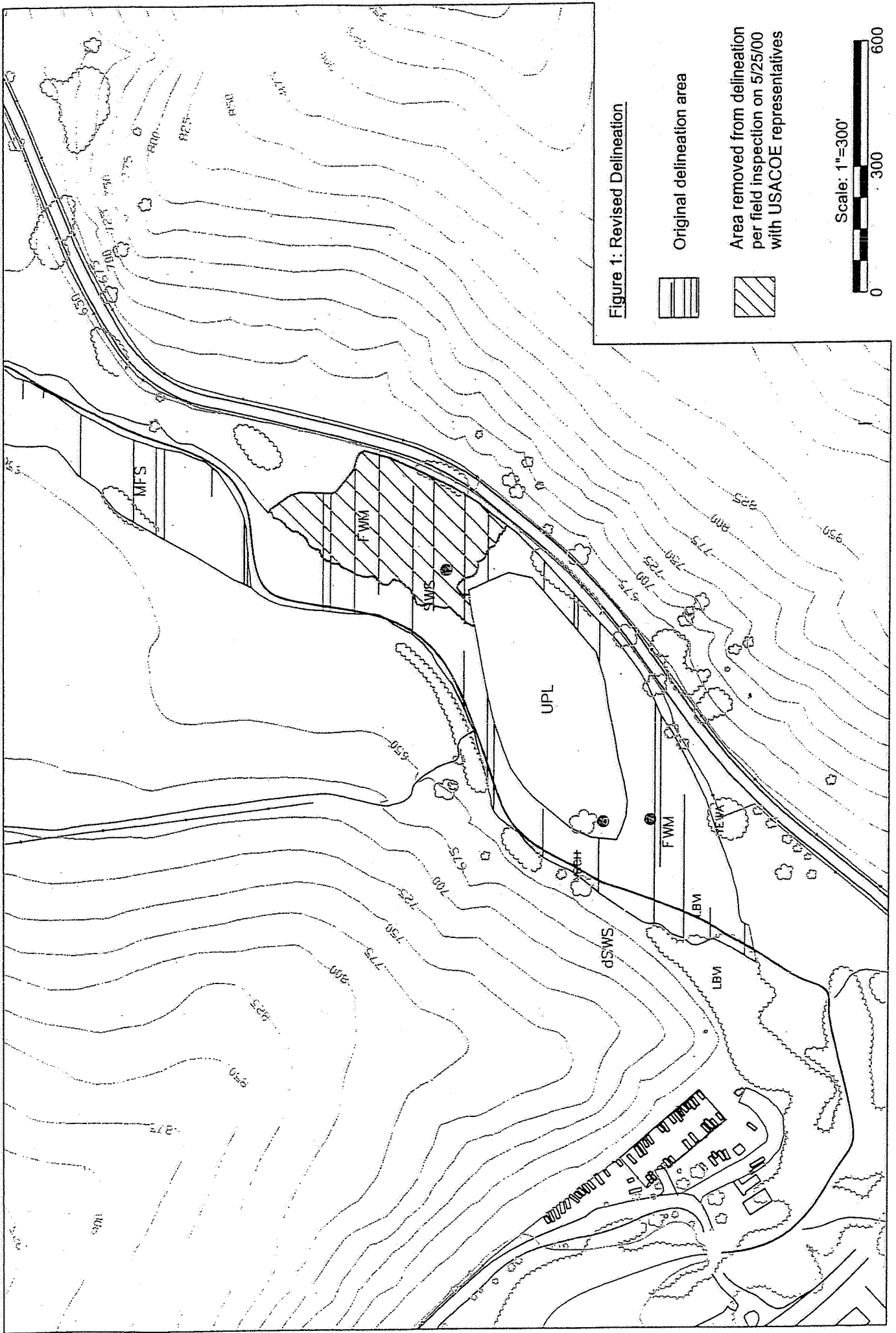


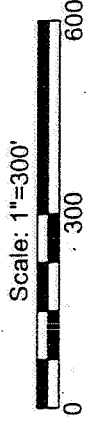


Figure 1: Revised Delineation

-  Original delineation area
-  Area removed from delineation per field inspection on 5/25/00 with USACOE representatives



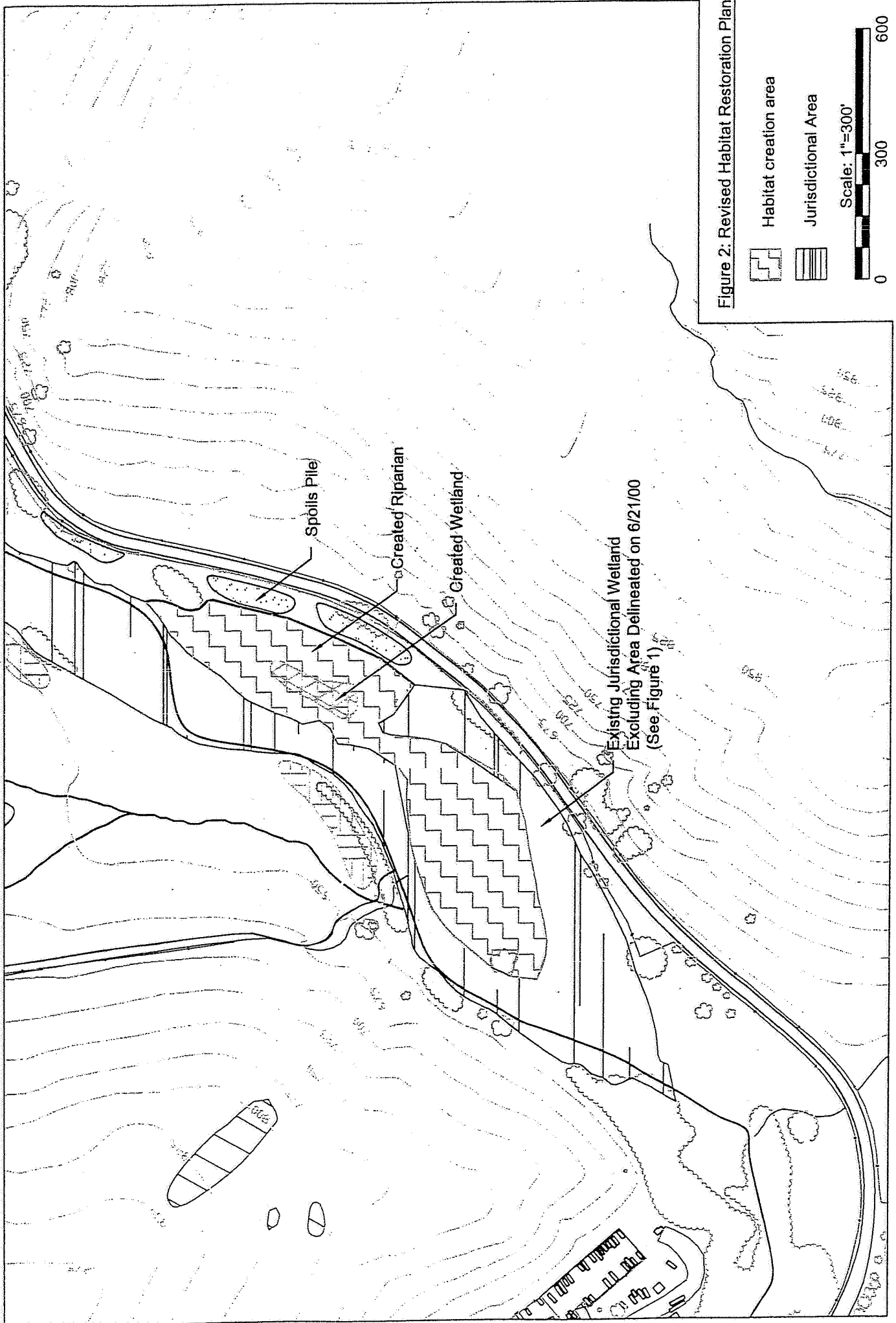


Figure 2: Revised Habitat Restoration Plan

EXHIBIT C

EXHIBIT C

Financial Assurances

DECLARATION OF TRUST

I

WILDLANDS, INC., a California corporation (Trustor) hereby declares that it will transfer and deliver to the California Department of Fish and Game (Trustee) in perpetuity the sum of \$8,400.00 per habitat credit sold, together with such additional funds as it will be required to deliver to the Trustee from time to time, (Trust Fund) to be held, administered, disbursed and expended as an endowment fund for charitable purposes within the meaning of Section 501(c) (3) of the Internal Revenue Code, in Section 23701(d) of the California Revenue and Tax Code, more particularly as set forth and provided herein.

II

A. The Trustee shall hold, administer, disburse and expend, from time to time, from the principal and income of the Trust Fund, deposited with it from time to time, such amounts as shall be required to preserve, operate, and maintain, in perpetuity, the real property described on Exhibit A, attached hereto, as a Mitigation Bank and habitat for wetlands and wildlife, pursuant to the terms of the Rancho Jamul Mitigation Bank Enabling Instrument, ("Agreement") between the Trustor and the California Department of Fish and Game, dated _____, as amended.

B. The Trustee may make direct disbursements from the trust fund for the purposes of this Trust, or it may from time to time disburse such funds to the Trustor or persons or entity charged with the responsibility of preserving, operating and maintaining the Mitigation Bank, which funds shall be used by such persons or entity only for the purposes set forth herein and in said Agreement. Notice of such disbursement shall be provided to the Mitigation Bank Coordinator, Carlsbad Field Office, U.S. Fish and Wildlife Service.

C. The Trustee may be directed from time to time by the then Mitigation Bank Coordinators, Carlsbad Field Office, U.S. Fish and Wildlife Service and the District Engineer, U. S. Army Corps of Engineers, as to the persons or entity to whom such funds are to be disbursed and used for the purposes set forth in this Trust.

III

The name of this Trust shall be "Rancho Jamul Mitigation Bank Trust".

IV

The property of this Trust is irrevocably dedicated to charitable purposes and no part of the net income or assets of this Trust shall ever inure to the benefit of any Trustor, Trustee, officer, or member hereof or to the benefit of any private person. Upon any termination of this Trust, its assets remaining after payment, or provision for payment, of all debts and liabilities of the Trust shall be distributed to a nonprofit fund, foundation or corporation which is organized and operated exclusively for charitable purposes and which has established its tax exempt status under Section 501(c) (3) of the Internal Revenue Code, and whose purposes are consistent with the overall public purpose of this Trust to develop, acquire, and maintain in perpetuity wetland habitats and their associated adjacent upland wildlife habitats.

V

No substantial part of the activities of the Trust shall consist of carrying on propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate or intervene in any political campaign (including the publishing or distribution of statements) on behalf of any candidate or public office.

VI

A. In the event the Trustee resigns or is removed, such vacancy may be filled by the appointment of a successor Trustee by the then director of the State of California Department of Fish and Game, with such appointment being subject to the approval of the then Supervisor of the Carlsbad Field Office, U.S Fish and Wildlife Service or as otherwise provided by law.

B. The Trustee shall at all times keep the Trust Fund on deposit with a federally insured financial institution, at the maximum obtainable interest rate.

TRUSTOR:

WILDLANDS, INC.

By:

TRUSTEE:

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

By:

Approved:

U.S. FISH AND WILDLIFE SERVICE

By:

EXHIBIT D

Rancho Jamul Summary of
Habitat Restoration Acreages

EXHIBIT D

CREATED HABITAT-DULZURA CREEK

Created Riverine habitat			
Site #	Area (sq.ft)	Acres	
CRH1	72,591	1.7	
CRH2	84,006	1.9	
CRH3	76,374	1.8	
CRH4	63,799	1.5	
CRH5	120,776	2.8	
CRH6	106,216	2.4	
CRH7	71,989	1.7	
CRH8	11,095	0.3	
CRH9	3,371	0.08	
CRH10	88,757	2.0	
CRH11	65,420	1.5	
CRH12	118,510	2.7	
CRH13	49,743	1.1	
CRH14	154,078	3.5	
Subtotal		24.9	
Created Intermittent Stream			
Site #	Length (ft)	Ave. Width (ft)	Area (sq.ft)
CIS1	1,018	2	2,036
CIS2	1,709	2	3,418
CIS3	513	2	1,026
CIS4	688	2	1,376
CIS5	578	2	1,156
CIS6	447	2	894
CIS7	2,734	3	8,202
CIS8	1,019	2	2,038
CIS9	792	4	3,168
Subtotal	9,498		.53 Acres
Total			25.43 Acres

CREATED HABITAT-JAMUL CREEK

Created Riverine habitat			
Site #	Area (sq. ft)	Acres	
CRH15	21,933	0.5	
CRH16	63,964	1.5	
CRH17	27,381	0.6	
CRH18	27,452	0.6	
CRH19	12,333	0.3	
CRH20	131,894	3.0	
CRH21	130,710	3.0	
CRH22	112,173	2.6	
CRH23	21,150	0.5	
CRH24	25,486	0.6	
CRH25	127,110	2.9	
CRH26	124,539	2.9	
Subtotal		19.0	
Created Intermittent Stream			
Site #	Length (ft)	Ave. Width (ft)	Area (sq.ft)
CIS10	1,088	2	2,176
CIS11	1,587	2	3,174
CIS12	943	2	1,886
CIS13	3,006	3	9,018
CIS14	2,434	2	4,868
CIS15	1,104	2	2,208
CIS16	395	3	1,185
CIS17	1,539	2	3,078
CIS18	1,882	2	3,764
CIS19	2,143	5	10,715
CIS20	2,134	2	4,268
CIS21	532	2	1,064
CIS22	395	2	790
CIS23	166	2	332
CIS24	580	2	1,160
Subtotal	19,928		1.14 Acres
Total			20.14

Habitat Enhancement (Credited) - 8.02 acres

EXHIBIT E

Rancho Jamul Mitigation Bank
Preliminary Closure Plan
May 11, 2000
Revised
June 8, 2000

Introduction

A key feature of the Rancho Jamul Mitigation Bank is restoration of degraded habitat. The goals and objectives of the project are listed in the following excerpt from the Rancho Jamul Mitigation Bank Restoration and Management Plan (September 1999).

The goal of the Rancho Jamul Mitigation Bank is to restore wetland and riparian habitat and to protect and expand populations of special-status species at a site in south San Diego County, California (Figures 1a and 1b). In particular, the proposed Mitigation Bank site will play an important role in protecting and increasing a population of the endangered least Bell's vireo and promoting linkages with other populations of this species.

The objectives of the Rancho Jamul Mitigation Bank include the following:

1. To restore, enhance, and preserve the floodplain, fluvial, and associated wetland processes of Dulzura and Jamul Creeks;
2. To restore the native vegetative cover and structural diversity of the stream-influenced areas of the site;
3. To increase native species diversity;
4. To provide new breeding sites and foraging habitat for the least Bell's vireo and other riparian species;
5. To enhance and manage habitat for other special-status species, such as the arroyo toad, the California red-legged frog, and the Western spadefoot toad.
6. To provide connectivity with adjacent habitats;
7. To serve as a refugia during periods of potential population declines following random naturally occurring events; and
8. To endow and manage the site in perpetuity to protect habitats and special-status species populations.

Objective number eight is the primary focus of this Closure Plan.

This Plan closes the maintenance phase of the Rancho Jamul Mitigation Bank and sets the stage for long-term management of the property. The maintenance phase is that period of time when the Bank Developer takes all measures needed to achieve the performance standards of the Restoration and Management Plan. For any given phase of the Mitigation Bank, the maintenance period lasts for five years after construction. During this period, the Bank Developer funds the needed maintenance on the site and does not use the endowment account for the project.

The Bank Enabling Instrument for the Rancho Jamul Mitigation Bank requires that the California Department of Fish and Game take responsibility for the long-term management of the mitigation bank. This may be done directly by Department staff or through a contract or other arrangement with another party. In either case, there will a person assigned to care for the property. This person is referred to in this document as the "land manager."

This Closure Plan identifies the long-term management activities planned for the Ranch Jamul Mitigation Bank site following the close of the five-year maintenance period for the Bank; for the purposes of this Plan the term "long-term" signifies the post-maintenance period extending into perpetuity. Because the restoration of the site has emphasized natural processes, long-term management does not entail irrigation, water management, or intensive plant protection or replacement. In general, the management activities are intended to protect the site from unauthorized activities, exotic species, and other potential intrusions into this habitat preserve.

Grazing Restrictions - Fencing

Planned Management Activities

The uplands of the site are typical of California grasslands dominated by exotic annuals. Weed control on rangeland sites is often accomplished through grazing, but this practice is not currently planned for use on the Rancho Jamul property by the California Department of Fish and Game (CDFG). If some grazing is utilized in the future for the uplands of the site, any costs and revenues from this activity would accrue to the Department of Fish and Game.

At the current time, grazing still takes place on lands in the vicinity of the study area, including a parcel adjacent to and west of the California Department of Fish and Game property. Effective exclusion of the cattle will require perpetual maintenance of the fencing surrounding the site or some form of fencing along the riparian corridors.

The long-term management vision for protecting the site also requires fencing to dissuade trespassing, off road vehicle use, and other detrimental activities. This too will

require ongoing fence inspection and maintenance.

Management Activity Funding

Wildlands proposes that a portion of the endowment funds from each credit sale be used to assist in fence maintenance for the site. The financial model provides for the inspection, repair, and replacement, as needed, of approximately three miles of existing perimeter fencing; the model assumes that full replacement of the three miles of fence will occur every 35 years.

Road and Trail Maintenance

Planned Management Activities

The existing system of unpaved roads will be used to provide access for habitat enhancement and restoration activities and will be maintained to facilitate monitoring and management activities.

Management Activity Funding

The financial model for the endowment assumes that three days of grading tractor rental will be available each year for road repair.

Fire Management

Planned Management Activities

Prescribed burning is a technique that can be effective in controlling weedy vegetation in upland areas. The land manager for the mitigation bank will be available to coordinate with the California Department of Fish and Game and the California Department of Forestry and Fire Protection to conduct controlled burns. Factors to be considered in such a program include the appropriate timing of the burning from vegetation management, air quality, and public safety perspectives, as well as potential damage to habitat from fire control vehicles.

Management Activity Funding

The financial model for the endowment assumes that the land manager will be available to consult with the Department of Fish and Game regarding managing potential effects of prescribed burns on riparian habitat.

Species Management

Planned Management Activities

Exotic plant species removal is proposed as part of the habitat restoration work, as described in the Restoration and Management Plan. Additionally, five subsequent years of monitoring and removal will be performed as maintenance without using funds from the endowment fund. Long-term control of tamarisk and other exotic plant species will also be a perpetual requirement. The level of funding for this ongoing control is based on chemical applications, conducted during the spring and fall using Garlon and Rodeo herbicides, as appropriate, applied from backpack sprayers. Non-chemical means of control are acceptable alternatives provided that they are effective.

Brown-headed cowbird monitoring and potential control activities will be continued as necessary based on levels of nest parasitism observed, and the effect on parasitism on productivity of key nesting native bird species. The brown-headed cowbird, which has been documented to have adverse effects on the productivity of least Bell's vireo, has been observed at the Rancho Jamul site. At this time, the extent of the potential parasitism at the site is unknown. Additionally, the degree of benefit stemming from perpetual trapping at sites where the least Bell's vireo populations have increased is not known. Therefore, Wildlands, Inc. proposes to monitor the nests of selected open cup nesting species, such as song sparrow and common yellowthroat that may nest on the site, during the maintenance phase to establish a baseline condition of nest parasitism and nesting pair productivity before a trapping program is initiated.

Long-term cowbird removal, if needed, will be accomplished by trapping birds in modified Australian crow traps. The details of trap placement, baiting, and monitoring will be formulated with input from the wildlife agencies. However, at this time we envision the placement of up to eight traps along the 5.6 miles of creek corridor (Dulzura and Jamul creeks) within the project area; this equates to a spacing of approximately one trap per three quarters mile. The traps would be checked and maintained daily during the core three month breeding period. Trapping would occur every other year. Monitoring nesting productivity of select open cup nesting species would occur every year so that the potential benefits to these species, such as lowered levels of nest parasitism and improved nesting productivity, can be determined; this monitoring may also provide information indicating that brown-headed cowbird trapping could be reduced or discontinued at some point in the future.

Management Activity Funding

Endowment funding is provided for spring and fall exotic plant species removal (two, two person crews working one week during each season). The endowment also provides for eight cowbird traps, 180 hours of labor to monitor and maintain the traps every other year, and 180 hours of biologist labor every year to monitor nesting productivity, with potential supplemental hours provided by the land manager.

Education and Research

Planned Management Activities

The site will offer study and research opportunities to universities and interested groups. Wildlands, Inc. intends to offer annual stipends during the maintenance phase to graduate students at various California universities in order to establish on-site research projects. These projects will be designed to contribute to current understanding of habitat restoration, preservation and management techniques. Other interested organizations, such as the California Native Plant Society, and local land trusts will be welcome to conduct research at the site. The Department of Fish and Game may elect to continue these activities.

The Mitigation Bank could also make local schools aware of the potential for group visits to the site for educational and research purposes. It is envisioned that elementary school visits would be a good way to introduce children to the idea of conservation in general and to riparian habitat specifically. Visits of higher grade levels could also be encouraged. Organizations and educational institutions will coordinate with the land manager and the Department of Fish and Game prior to any site visit or research effort.

Management Activity Funding

The endowment funding provides funding for the land manager to coordinate two site visits by interested groups per year to the bank site.

Hunting Management

Planned Management Activities

The following management measures will be undertaken to assure compatibility between hunting programs at the site and wildlife use of the mitigation bank restored habitats.

1. No hunting will be allowed within the riparian/wetland habitats of the Rancho Jamul Mitigation Bank.
2. No hunting will be allowed during the breeding season (March 15 to August 30).
3. CDFG will control numbers of hunters and times of hunts to minimize the effects on nongame species.
4. CDFG will implement an education program for hunters at the Rancho Jamul Ecological Reserve emphasizing areas excluded from hunting because of environmental sensitivity.
5. Upland game hunting is the primary type of hunting anticipated. In addition, "put and take" hunts involving pheasants will also occur, but in old agricultural areas removed from the Jamul Creek and Dulzura Creek areas.
6. All special hunts will have general on-site supervision by CDFG personnel to assure compliance with limits/constraints on hunting.
7. No hunting will take place within a 200-foot buffer zone from the wetland bank areas, with this non-hunting zone being marked with signs. The first 100-foot

zone from the wetland areas will be a total exclusion zone for hunting. The second 100-foot zone will exclude hunters from entering to hunt, but will permit retrieval of downed game that falls within this zone. The buffer areas will only be applied to areas of the bank where wetland habitat is created or enhanced, excluding the intermittent drainages that are shown on the restoration plans as narrow tributaries to the main creeks.

8. No hunting will occur between Dulzura Creek and Otay Lakes Road (for public safety reasons), which in most areas would create a buffer zone well in excess of 200 feet.
9. The Rancho Jamul Ecological Reserve property was purchased by CDFG primarily for conservation of sensitive habitat and species. Hunting, as well as other recreational activities on the property, are and will continue to be strictly controlled so that the overall ecological values of the property are protected.
10. The above management measures will be incorporated into the Rancho Jamul Ecological Reserve Management Plan, which is currently under development by CDFG.

Management Activity Funding

The ongoing cost of the above management activities will be borne by CDFG.

Endowment Worksheet - Rancho Jamul Mitigation Bank Long-Term Management Funding

Task	Land Manager*	Ecologist	Biologist/ Botanist	Labor	Direct Cost	Proceeds	Net Cost
Fence repair/replacement over time ¹					\$1,371.00		
Grader ²					\$1,671.00		
Revenue from grazing lease ³							
Assistance with prescribed burns ⁴							
Public access ⁵							
Monitor habitat condition, key species dynamics ⁷		40	90	160	\$120		
Exotic vegetation management ⁶					\$430		
Animal management ⁷					\$800		
Trash pickup ⁶					\$250		
Education and research ⁹					\$100		
Agency coordination and reporting		8	8		\$2,000		
Misc. equipment					\$4,700		
Contingency							
Total	n/a	48	98	160			
Billing Rate	n/a	\$45	\$45	\$15			
Cost	\$33,750	\$2,160	\$4,410	\$2,400	\$11,442	\$0	\$54,162

Cost per acre: \$497

Number of credit acres	109
Endowment per credit acre	\$8,400.00
Total endowment	\$915,600
Net interest rate ¹⁰	5.0%

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
starting budget	\$228,900	\$469,245.00	\$721,607.25	\$986,587.61	\$1,035,917	\$1,087,713	\$1,087,936
annual expenditure ¹¹	\$0	\$0	\$0	\$0	\$0	\$54,162	\$54,162
interest income	\$11,445	\$23,462	\$36,080	\$49,329	\$51,796	\$54,386	\$54,397
remaining budget	\$240,345	\$492,707	\$757,688	\$1,035,917	\$1,087,713	\$1,087,936	\$1,088,171

Assumptions:

- Three miles of barbed wire fence is assumed to be replaced every 35 years.
- Three days of grader rental is assumed to assist with road repair.
- Any grazing revenue is due DFG.
- Ecologist and land manager available to coordinate and assist DFG on prescribed burns.
- Land manager will report trespassing observed during other management activities.
- Two crews of two will work for one week during the spring and one week during the fall.
- Operation of eight cowbird traps. General habitat and nesting productivity will be perpetually monitored and brief reports will be prepared.
- Trash removal by land manager
- Education and research limited to coordination by land manager of access to bank.
- Net Interest Rate is interest less inflation
- Maintenance by Wildlands occurs for a period of 5 years per phase, endowment funded management beyond 5 years

Notes:

*This model provides funding for one-half of a land managers salary. The land manager will perform a wide variety of tasks, as indicated under "assumptions," above.

EXHIBIT F

Table of Credits

State of California The Resources Agency

ARNOLD SCHWARZENEGGER, Governor



DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201



January 19, 2005

Mr. Mark Tucker
Wildlands, Inc.
7676 Hazard Center Drive, Suite 500
San Diego, California 92108

Re: Release of Mitigation Credits for the Rancho Jamul Mitigation Bank

Dear Mr. Tucker:

The Department has received and reviewed the as-built drawings for the second construction phase of the Rancho Jamul Mitigation Bank (Phase IB). Pursuant to Section V.F.2 of the Rancho Jamul Bank Enabling Instrument, the Department hereby approves the release of an additional 65% of the acreage established in Phase IB, or 6.56 acres of freshwater marsh credits. This increases the total number of credits from 27.15 to 33.71 acres.

If you have questions or comments regarding this matter, please contact Kelly Fisher of the Department at (858) 467-4207.

Sincerely,

Donald R. Chadwick
Habitat Conservation Planning Supervisor
South Coast Region

To: Greg D.
Carol L.

EXHIBIT F

Summary of Habitat Credits
at the Rancho Jamul Mitigation Bank

Habitat Type	Acres*		
	Phase I	Phase II**	Total
Corps Jurisdictional Freshwater Wetlands/Waters of the U.S.	11.20	5.33	16.53
Corps Jurisdictional Riparian Habitat	32.70	21.31	54.01
Corps Jurisdictional Ephemeral/Intermittent Wetlands/Waters	1.68	0	1.68
Corps Jurisdictional Enhancement Credits (for temporary impacts)	8.02	0	8.02
Non-Corps Jurisdictional Oak/Riparian Habitat	16.60	12.16	28.76
Total	70.20	38.80	109.00

* Acreage is based on restoration design diagrams. Actual acreage, and corresponding credits, will be based on the as-built drawings.

** Phase II acreage is based on conceptual planning and will be revised as detailed plans are developed.

EXHIBIT G

Land Use Agreement

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LAND USE AND EASEMENT AGREEMENT

This Land Use and Easement Agreement ("Agreement") is made by and between THE TRUST FOR PUBLIC LAND, a California nonprofit public benefit corporation ("TPL"), and WILDLANDS, INC., a California corporation ("Wildlands"), who agree as follows:

ARTICLE 1. BACKGROUND AND GENERAL.

1.01. Rancho Jamul Property. TPL owns that certain real property (the "Rancho Jamul Property") located in San Diego County, California, which is more particularly described in **Exhibit A** attached hereto and incorporated herein. The Rancho Jamul Property consists of approximately 4800 acres of unimproved land.

1.02. Mitigation Bank. Wildlands would like to restore wetland habitat and create a wetlands mitigation bank ("Mitigation Bank") on approximately 150 acres land lying along the two streambeds located within the Rancho Jamul Property. The exact boundaries of the 150± acres (the "Mitigation Bank Site") will be determined by a survey in accordance with Section 2.02 below.

1.03. Conveyance to DFG. TPL has had discussions with the State of California Department of Fish and Game ("DFG") regarding the conveyance of the Rancho Jamul Property to DFG. Those discussions contemplate that, should such a conveyance occur, the conveyance to DFG will be subject to the rights afforded Wildlands in connection with the Mitigation Bank, and that TPL, or its successor-in-interest, will retain the right to any payments made pursuant to Section 3.03 below.

1.04. Purpose. The purpose of this Agreement is to set forth the terms and conditions upon which Wildlands shall have the right to create and operate a Mitigation Bank on the Mitigation Bank Site.

ARTICLE 2. ESTABLISHMENT OF MITIGATION BANK.

2.01. Exclusive Right. TPL hereby grants Wildlands the exclusive right to permit, create, develop, operate, sell mitigation credits, and monitor a Mitigation Bank on the Rancho Jamul Property and the exclusive right to represent TPL and its successors in interest in the Rancho Jamul Property with respect thereto. The rights granted to Wildlands by this Agreement, and the rights granted to Wildlands by the

bank documentation described in Section 2.03 shall be and remain the exclusive property of Wildlands.

2.02. Mitigation Bank Site; Survey. The Mitigation Bank Site shall be approximately 150 acres in size, located along the two streambeds lying within the Rancho Jamul Property. So long as the overall size is approximately 150 acres, the exact size and boundaries of the Mitigation Bank Site shall be determined by Wildlands, in its reasonable discretion. If Wildlands approves the feasibility of the Mitigation Bank in accordance with Section 2.05.A, Wildlands, at its expense, shall provide TPL with a legal description of the Mitigation Bank Site, prepared by a California licensed surveyor based upon a field survey. The legal description so furnished shall become the legal description of the Mitigation Bank Site.

2.03. Mitigation Bank Documentation. Wildlands, at its expense, will prepare the various conceptual plans, development plans, and legal and administrative documents which are necessary to enable the Mitigation Bank to be endorsed by the U.S. Army Corps of Engineers, the United States Fish and Wildlife Service ("F&W"), DFG, and such other regulatory agencies (collectively, the "Regulatory Agencies") as may have jurisdiction over a mitigation bank of the type for which approval is sought.

A. The habitat and species sought to be protected shall be determined by Wildlands, in the exercise of its professional judgment. Wildlands shall have the right to operate the Mitigation Bank pursuant to those approvals actually received from Regulatory Agencies, even if there are some Regulatory Agencies that fail to participate in the Mitigation Bank.

B. The Mitigation Bank documentation will include a bank enabling instrument ("BEI"), restrictions ("CCR") benefiting DFG and perhaps other Regulatory Agencies, designed to protect the habitat, and perhaps other documents. Although the exact form and content of the CCR will be determined during the Mitigation Bank permitting process, the parties acknowledge that the form and content of the CCR may be affected by DFG's eventual ownership of fee title to the Rancho Jamul Property, and that the CCR may create a protective buffer zone outside the Mitigation Bank Site.

C. TPL and/or its successor shall consent to such documents and convey such property interests as may be required by the Regulatory Agencies in order to establish the Mitigation Bank.

2.04. Grant of Use Rights. TPL hereby grants to Wildlands, the following rights and interests:

A. An exclusive easement and right to use the Mitigation Bank Site for the purposes of the establishment, development, operation and maintenance thereon of a Mitigation Bank;

B. Non-exclusive easements: (i) to use the roads, paths, trails and other accessways, as they may exist from time to time, which are located within those portions of the Rancho Jamul Property shown generally on Exhibit B attached hereto and incorporated herein, for purposes of vehicular and pedestrian access to and from the Mitigation Bank Site; and (ii) to create such service roads within the area shown on Exhibit B, as may be reasonably necessary or convenient to construct, maintain, repair and reconstruct the Mitigation Bank.

C. Non-exclusive easements to cross those portions of the Rancho Jamul Property as may be reasonably necessary or convenient to gain access from the roads, paths, trails and other accessways described in Section 2.04B, as they may exist from time to time, to the Mitigation Bank Site;

D. Non-exclusive easements to existing ground wells and other water rights appurtenant to or otherwise granted to the Rancho Jamul Property, as well as the right to sink new wells, and the right to extract and/or divert water from such sources and to transport and convey such water to and through the Mitigation Bank Site for purposes of habitat restoration and maintenance within the Mitigation Bank Site, and incidental purposes, but only to the extent that such uses do not result in a material adverse impact on the remainder of the Rancho Jamul Property;

E. Such incidental rights as may be necessary or appropriate in order to develop, maintain, operate and/or preserve the Mitigation Bank in accordance with the requirements of the Regulatory Agencies, including without limitation, the right of entry described in Section 2.05.A.

To the extent that any one or more of the Regulatory Agencies require fee title to the Mitigation Bank Site to be burdened or otherwise affected by Mitigation Bank documentation in order to approve the Mitigation Bank, then TPL and/or its successors shall burden or otherwise affect fee title in the manner required.

2.05. Conditions. The provisions set forth in this Section 2.05 are conditions precedent to Wildlands obligations under this Agreement, and may be declared to be satisfied or waived only in a writing signed by Wildlands.

A. Feasibility. Wildlands shall have until 5:00 p.m. on December 31, 1998 (the "Feasibility Period"), to perform its feasibility review of the Rancho Jamul Property, and to determine, in Wildlands' good faith business judgment, whether or not to proceed with the establishment of a Mitigation Bank on the Rancho Jamul Property.

(1) Wildlands has had the right to enter the Rancho Jamul Property to perform its due diligence review since February 19, 1998, and Wildlands shall continue to have the right to enter the Rancho Jamul Property for feasibility, testing and related purposes.

(a) This right of entry is extended to Wildlands, its agents, contractors, subcontractors, consultants and their employees, and includes the right to enter upon the Rancho Jamul Property, at reasonable times, during ordinary business hours, for the purpose of conducting any on-site surveys, inspections, investigations, tests and studies which Wildlands may deem appropriate, including by way of example rather than limitation, the drilling for and obtainment of soil and groundwater samples. This right of entry shall not include the right to enter any buildings or other structures located on the Rancho Jamul Property.

(b) All activities hereunder shall be conducted in a manner which, to the extent reasonably possible, minimizes interference with the enjoyment of the Rancho Jamul Property by TPL and TPL's employees and the adverse impact on the condition of the Rancho Jamul Property.

(c) Wildlands shall obtain all required permits to perform the work, and all work shall be performed at Wildlands' sole expense.

(2) If Wildlands, in the exercise of its good faith business judgment, disapproves the feasibility of the Rancho Jamul Property, Wildlands shall send written notice of disapproval to TPL no later than the end of the Feasibility Period. Upon sending such notice, this Agreement shall terminate, and the parties shall have no further

rights or obligations under this Agreement, except for Wildlands' obligations under Section 2.06. If Wildlands fails to send written notice of disapproval by the end of the Feasibility Period, Wildlands shall be deemed to have approved the feasibility of establishing a mitigation bank on the Rancho Jamul Property.

B. Title. Title to the Mitigation Bank Site and, to the extent it may affect the Mitigation Bank Site for its intended uses, the remainder of the Rancho Jamul Property shall be subject only to those exceptions which are acceptable to Wildlands, in its good faith business judgment, and to the Regulatory Agencies, in their sole and absolute discretion.

(1) Within five (5) business days following the execution of this Agreement, Wildlands shall order a preliminary title report, together with copies of all exceptions referred to therein, from a title insurance company selected by Wildlands. Wildlands shall have until the end of the Feasibility Period, or the thirtieth (30th) day following Wildlands receipt of the preliminary report and legible copies of all exceptions referred to therein, to approve or disapprove the condition of title to the Mitigation Bank Site and the Rancho Jamul Property, as contemplated above. Failure to give written notice of approval of the items shown on the preliminary report shall constitute disapproval of all items. If title is disapproved or deemed to be disapproved, this Agreement shall automatically terminate unless, within thirty days following the date of the disapproval, TPL agrees to remove all items specifically objected to by Wildlands. If title is disapproved or deemed disapproved, and TPL fails to agree to remove specifically disapproved items within such thirty (30) day time period, this Agreement shall automatically terminate, unless, within the following thirty (30) day time period, Wildlands sends written notice waiving its objections.

(2) Once the specific exceptions to title are determined in accordance with the preceding paragraph, (the "Approved Condition of Title"), TPL shall not create any other easement, license, use right or encumbrance on the title: (i) to the Mitigation Bank Site until the Regulatory Agencies have approved the Mitigation Bank; or (ii) to the remainder of the Rancho Jamul Property if such easement, license, use right or encumbrance is likely to adversely impact the

Mitigation Bank Site in its intended use. Once the Mitigation Bank has been approved, and the CCR recorded, TPL shall not thereafter create any other easement, license, use right or encumbrance on the title to the portion of the Rancho Jamul Property lying outside the Mitigation Bank which might interfere with or endanger the Mitigation Bank operations. For purposes of this provision, TPL and Wildlands anticipate that encumbrances outside the area shown on Exhibit B are significantly less likely to interfere with or endanger the Mitigation Bank operations than encumbrances within such area.

(3) If the Approved Condition of Title contains exceptions which any one or more of the Regulatory Agencies finds objectionable, then Wildlands shall so notify TPL, and TPL shall have thirty (30) days within which to agree to remove the objectionable item. If, by the end of such 30 day period, TPL does not agree to remove the objectionable item, then this Agreement shall be automatically terminated unless, within the following 120 day period, Wildlands notifies TPL that the objection has been waived by the applicable Regulatory Agency or Agencies.

C. Bank Documentation. This Agreement is subject to Wildlands being authorized to establish, operate and maintain a Mitigation Bank, upon terms and conditions set forth in a BEI and other bank documentation which are acceptable to Wildlands, in its good faith business judgment. If Wildlands fails to notify TPL by 5:00 p.m. on June 30, 2003 (the "Bank Authorization Period"), that this condition has been satisfied, then this Agreement shall automatically terminate on that date; provided however, that if on such date, Wildlands is waiting for a response from any one or more of the Regulatory Agencies with respect to pending drafts of any such documents, then Wildlands shall have the right, but not the obligation, to extend the Bank Authorization Period for as many as 4 times of 3 months each, in order to obtain final Regulatory Agency Approval. This right of extension shall be subject to the consent of TPL or its successor-in-interest, which shall not be unreasonably withheld.

2.06. Indemnification. Wildlands hereby agrees to defend, indemnify and hold TPL, its officers, directors, employees, agents and consultants harmless from and against any and all claims, damages, losses and liability, including costs and reasonable attorneys' fees (collectively, "Claims"), arising out of, resulting from or

in any way relating to the exercise of its entry onto and due diligence activities on the Rancho Jamul Property, including but not limited to any and all penalties, fines and costs resulting from Wildlands' violation of any law, ordinance, rule or regulation in conducting such inspections, investigations, tests and studies.

A. Without limiting the generality of the foregoing, Wildlands shall promptly pay all bills associated with such entry and investigation, shall keep the Rancho Jamul Property free and clear from any and all mechanics' and materialmen's liens associated with Wildlands' entry or investigation, and shall promptly restore the Rancho Jamul Property to substantially its former physical condition following any entry and/or investigation by Wildlands.

B. Notwithstanding the foregoing, Wildlands shall not be obligated to restore any damage, or to defend, indemnify or hold ~~Trust~~^{TPL}, its officers, directors, employees, agents or consultants harmless from or against any claims to the extent that the same result from any one or more of the following: (i) any act or omission of TPL, its officers, directors, employees, agents or consultants; (ii) the discovery of hazardous materials already present on the Rancho Jamul Property; (iii) the spread of hazardous materials already present on the Rancho Jamul Property as a result of testing therefor in accordance with reasonably prudent testing procedures following notification to TPL of the nature and extent of such testing procedures, and TPL's consent thereto, which consent shall not be unreasonably withheld or delayed; or (iv) the existence of any latent defect on the Rancho Jamul Property.

2.07. Memorandum; Quitclaim. Concurrently with the execution of this Agreement, TPL and Wildlands shall execute and acknowledge the memorandum ("Memorandum") of this Agreement, a copy of which is attached hereto as Exhibit C, and incorporated herein, and cause it to be recorded in the office of the San Diego County Recorder promptly thereafter. In the event that Wildlands disapproves feasibility, or this Agreement otherwise terminates, upon the request of TPL, Wildlands will execute and deliver to TPL a quitclaim deed, in recordable form, for the purpose of eliminating the Memorandum from the public records.

ARTICLE 3. DEVELOPMENT AND OPERATION OF THE MITIGATION BANK;
SALE OF CREDITS; PAYMENTS TO TPL.

3.01. Development and Operation. Once the Mitigation Bank has been approved on terms acceptable to Wildlands, Wildlands shall, at its expense, within a commercially reasonable time following such approval: (i) perform such restoration and development work as may be required by the BEI; (ii) obtain all permits and perform such further studies as may be required in connection therewith; (iii) conduct all sales of Mitigation Bank credits ("Credits") as permitted by the BEI; and (iv) operate the Mitigation Bank, and maintain the Mitigation Bank Site, in accordance with the BEI.

3.02. Credit Sales. Wildlands shall have the exclusive right to sell Credits in the Mitigation Bank as authorized by the BEI. The price, the maximum and/or minimum number of Credits within a particular sale, the time for payment, identity of Credit purchasers, and all other terms of Credit sales shall be determined by Wildlands, in its good faith business judgment.

3.03. Payments to TPL. Wildlands shall pay TPL a portion of the proceeds of each Credit sale, as more fully provided in this Section 3.03.

A. Amount. The amount payable to TPL shall depend on the number of Credits authorized for sale by the BEI. If the total number of Credits authorized for sale by the BEI is 35 or fewer, TPL shall be entitled to receive an amount equal to \$5,000 for each Credit sold. If the total number of Credits authorized for sale by the BEI is greater than 35, TPL shall be entitled to receive an amount equal to \$6,000 for each Credit sold. For example: (i) if the BEI authorizes 35 Credits, and a particular sale involves 2.3 Credits, TPL shall be entitled to receive \$11,500 from such sale; and, (ii) if the BEI authorizes 40 Credits, and the particular sale involves 0.2 Credits, TPL shall be entitled to receive \$1,200 from such sale.

B. Monthly Payments. Wildlands shall pay TPL the amounts due under Subsection 3.03A on a monthly basis. Payment shall be made no later than the 10th day of the calendar month for all Credits sales closed during the preceding calendar month.

C. Accounting. During each month in which a payment is due, Wildlands shall provide TPL with an accounting showing the total number of Credits authorized, the number of sales pending, the number of Credits sales closed during the preceding month, and the calculation of the payment due to TPL.

hereunder shall be Sacramento County, California. The headings and captions of articles and sections used in this Agreement are for convenience only, and this Agreement shall be interpreted without reference to any headings or captions. This Agreement has been prepared and revised by attorneys for both parties so any rule of law or construction that ambiguities are to be construed against the party responsible shall not apply. This Agreement shall be governed by the laws of the State of California.

4.03. Assignment. The provisions hereof shall be binding upon and inure to the benefit of the successors and assigns of TPL and Wildlands, and any assignment by a party shall be presumed to be a full assignment of all of that parties rights and obligations under this Agreement. In the event of such an assignment, the assignor shall be relieved of any and all liability arising out of this Agreement, except for such liability as may have accrued and remained unsatisfied as of the date of the assignment. From and after the date of the assignment, the assignee shall become fully responsible for the performance of the assignor's obligations hereunder. Except as specifically otherwise provided in this Agreement, the terms "TPL" and "Wildlands" shall include their successors in interest.

4.04. Attorneys' Fees. In the event either TPL or Wildlands shall commence legal proceedings for the purpose of enforcing any provision or condition hereof, or by reason of any breach arising under the provisions hereof, then the successful party in such proceeding shall be entitled to reasonable attorneys' fees to be determined by the Court. Without limiting the generality of the foregoing, the prevailing party shall be entitled to recover its attorneys' fees and other legal expenses incurred in connection with a bankruptcy or other insolvency-related proceeding of the other party (and including, without limitation, such fees and expenses incurred in efforts, whether successful or not, to obtain adequate protection, annulment, modification or termination of the automatic stay).

4.05. Integration. This Agreement contains the entire agreement of the parties hereto; and, this Agreement supersedes any and all prior written and oral agreements between them concerning the subject matter contained herein, including, without limitation, the letter of intent dated February 18, 1998 and the Temporary license letter dated February 19, 1998. There are no representations, agreements, arrangements or understandings, oral or written, relating to the subject matter which are not fully expressed herein. No change, alteration, amendment, modification or waiver of any of the terms or provisions hereof shall be valid unless the same shall be in writing and signed by the parties hereto.

4.06. Additional Documents. From time to time, each party shall execute and deliver such instruments of transfer and other documents as may be reasonably requested by the other party to carry out the purpose and intent of this Agreement.

4.07. Dependency and Survival of Provisions. The respective warranties, representations, covenants, agreements, obligations and undertakings of each party hereunder shall be construed as dependent upon and given in consideration of those of the other party, and shall survive the close of escrow and delivery of the deed.

4.08. Third-Party Beneficiaries. This Agreement shall be for the sole and exclusive benefit of the parties hereto and shall not confer any right upon any third party, unless expressly so stated herein.

4.09. No Partnership. Nothing contained herein and no act of either party in connection with this Agreement shall be construed to create or evidence any employment, partnership, agency or joint venture relationship between the parties. ^{TPL's} ~~Trust's~~ and Wildlands' sole relationship is that of parties in an arm's-length transaction.

4.10. Counterparts; Facsimile Execution and Delivery. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but which together shall constitute a single document. Execution and delivery of this Agreement may be accomplished by facsimile in accordance with Section 4.01, which shall be effective and binding. Any party executing and delivering this Agreement by facsimile shall, that same day, deposit a fully executed original signature in the mail to the other party in accordance with Section 4.01.

DATED: August 10, 1998.

TPL:

THE TRUST FOR PUBLIC LAND
a California nonprofit public benefit
corporation

BY: sluethy
TITLE: Regional Counsel

- AND -

WILDLANDS:

WILDLANDS, INC.
a California corporation

BY: _____



Steven K. Morgan
President

EXHIBIT A

Order No: 8355665 -U13

DESCRIPTION

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PARCEL "DD":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID RANCHO JAMUL, SAID POINT BEING CORNER NO. 16 AS SHOWN ON L.S. MAP NO. 430, RECORDED MAY 28, 1931 IN THE OFFICE OF THE SAN DIEGO COUNTY RECORDER IN SAN DIEGO COUNTY, STATE OF CALIFORNIA; THENCE SOUTH 88°42'00" EAST (SOUTH 88°18'25" EAST PER SAID CERTIFICATE OF COMPLIANCE) A DISTANCE OF 529.37 FEET TO THE NORTHWEST CORNER OF INDIAN CEMETERY AS SHOWN ON L.S. MAP NO. 430; THENCE SOUTH 01°18'00" WEST A DISTANCE OF 239.63 FEET; THENCE SOUTH 88°42'00" EAST A DISTANCE OF 83.66 FEET; THENCE SOUTH 86°21'37" EAST A DISTANCE OF 388.78 FEET; THENCE SOUTH 88°48'26" EAST A DISTANCE OF 721.24 FEET; THENCE NORTH 21°58'07" WEST A DISTANCE OF 257.03 FEET; THENCE SOUTH 88°42'00" EAST A DISTANCE OF 338.54 FEET TO A POINT ON THE WEST LINE OF CALIFORNIA STATE HIGHWAY 94, SAID POINT BEING ON A NON-TANGENT 555.84 FOOT RADIUS CURVE, CONCAVE SOUTHWESTERLY, THE RADIAL BEARING FROM SAID POINT BEARS SOUTH 50°46'01" WEST; THENCE NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 06°07'25", AN ARC LENGTH OF 59.41 FEET TO THE NORTH BOUNDARY OF SAID RANCHO JAMUL; THENCE ALONG SAID NORTH BOUNDARY SOUTH 88°42'00" EAST A DISTANCE OF 3394.65 FEET TO CORNER NO. 15 OF SAID RANCHO JAMUL; THENCE SOUTH 01°57'00" WEST A DISTANCE OF 1990.30 FEET TO RANCHO JAMUL CORNER NO. 14; THENCE SOUTH 89°34'30" EAST 40.00 FEET; THENCE SOUTH 00°27'30" WEST A DISTANCE OF 1944.30 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°27'30" EAST A DISTANCE OF 1320.00 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°27'30" EAST A DISTANCE OF 1570.88 FEET; THENCE SOUTH 83°32'40" WEST A DISTANCE OF 2564.99 FEET TO THE WEST BOUNDARY OF SAID RANCHO JAMUL; THENCE ALONG SAID BOUNDARY NORTH 08°21'30" WEST A DISTANCE OF 966.60 FEET TO RANCHO JAMUL BOUNDARY NO. 17; THENCE NORTH 03°12'00" EAST A DISTANCE OF 627.15 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM:

ALL THAT PORTION LYING EAST OF THE WEST LINE OF SAID EXISTING CALIFORNIA STATE HIGHWAY 94.

ALSO EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

PARCEL "EE":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ.,

DESCRIPTION

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IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE COMMON CORNER OF SECTIONS 14, 15, 22 AND 23, TOWNSHIP 17 SOUTH, RANGE 1 EAST SAN BERNARDINO MERIDIAN, AS SHOWN ON L. S. MAP NO. 430; THENCE ALONG THE EAST LINE OF SAID SECTION 22 SOUTH 00°27'30" WEST A DISTANCE OF 1301.78 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID EAST LINE SOUTH 00°27'30" WEST A DISTANCE OF 1301.77 FEET; THENCE LEAVING SAID EAST LINE SOUTH 86°49'26" WEST A DISTANCE OF OF 1,328.00 FEET TO POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH 00°26'49" EAST A DISTANCE OF 1305.88 FEET; THENCE NORTH 86°59'09" EAST A DISTANCE OF 1320.0 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL "FF":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE SOUTH 86°48'26" WEST A DISTANCE OF 2640.00 FEET; THENCE SOUTH 00°25'27" WEST A DISTANCE OF 3933.67 FEET; THENCE NORTH 86°28'33" EAST A DISTANCE OF 1319.70 FEET; THENCE SOUTH 00°26'08" WEST A DISTANCE OF 1306.15 FEET TO POINT "C" OF SAID GRANT DEED; THENCE NORTH 86°30'07" EAST A DISTANCE OF 1319.40 FEET; THENCE NORTH 00°26'49" EAST A DISTANCE OF 2613.52 FEET; THENCE SOUTH 86°27'00" WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°26'08" EAST A DISTANCE OF 1309.98 FEET; THENCE NORTH 86°37'44" EAST A DISTANCE OF 330.00 FEET; THENCE NORTH 00°26'17" EAST A DISTANCE OF 327.24 FEET; THENCE NORTH 86°40'27" EAST A DISTANCE OF 330.00 FEET; THENCE NORTH 00°26'28" EAST A DISTANCE OF 326.98 FEET; THENCE NORTH 86°43'03" EAST A DISTANCE OF 660.00 FEET; THENCE NORTH 00°26'49" EAST A DISTANCE OF 652.94 FEET TO THE POINT OF BEGINNING.

PARCEL "GG":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH 86°48'26" EAST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°27'30" EAST A DISTANCE OF 2603.55 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AND IN SAID GRANT DEED AS COMMON CORNER NO. 14, 15, 22 AND 23, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE NORTH 00°27'30" EAST A DISTANCE OF 2640.00 FEET TO A POINT DESIGNATED AS "D"; THENCE NORTH 87°09'50" EAST A DISTANCE OF 2658.15 FEET; THENCE SOUTH 00°27'30" WEST A DISTANCE OF 2640.00 FEET; THENCE NORTH

DESCRIPTION

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87°09'50" EAST A DISTANCE OF 2658.15 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 13, 14, 23 AND 24; THENCE SOUTH 00°39'10" WEST A DISTANCE OF 2571.00 FEET; THENCE NORTH 86°27'00" EAST A DISTANCE OF 2320.83 FEET; THENCE SOUTH 00°11'21" EAST A DISTANCE OF 2571.00 FEET; THENCE SOUTH 86°27'00" WEST A DISTANCE OF 2358.62 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 23, 24, 25 AND 26; THENCE NORTH 00°39'10" EAST A DISTANCE OF 1285.49 FEET; THENCE SOUTH 86°37'44" WEST A DISTANCE OF 1326.59 FEET; THENCE NORTH 00°36'12" EAST A DISTANCE OF 2579.12 FEET; THENCE SOUTH 85°59'09" WEST A DISTANCE OF 1328.24 FEET; THENCE SOUTH 00°33'17" WEST A DISTANCE OF 1293.63 FEET; SAID POINT BEARS NORTH 86°48'26" EAST A DISTANCE OF 3974.79 FEET FROM SAID POINT "A"; THENCE SOUTH 86°48'26" WEST A DISTANCE OF 1327.39 FEET; THENCE NORTH 00°30'23" EAST A DISTANCE OF 2595.40 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1329.08 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

ALSO EXCEPTING THEREFROM:

BEGINNING AT THE COMMON CORNER OF SECTIONS 22, 23, 26 AND 27, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, AS SHOWN ON SAID L. S. MAP NO. 430; THENCE NORTH 00°27'30" EAST ALONG THE COMMON BOUNDARY OF SECTION 22 AND 23, A DISTANCE OF 2881.43 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-1, AND BEING THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 00°27'30" EAST ALONG SAID COMMON BOUNDARY OF SECTIONS 22 AND 23 A DISTANCE OF 852.52 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-5; THENCE LEAVING SAID SECTION LINE NORTH 88°35'50" EAST A DISTANCE OF 257.37 FEET TO A POINT, SAID POINT BEING THE POINT OF TANGENCY TO A CURVE TO THE RIGHT; THENCE EASTERLY ALONG SAID CURVE HAVING A RADIUS OF 430.00 FEET THROUGH A CENTRAL ANGLE OF 20°40'00" A DISTANCE OF 155.10 FEET TO A POINT OF REVERSE CURVE TO THE LEFT; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 205.00 FEET THROUGH A CENTRAL ANGLE OF 40°21'30" A DISTANCE OF 144.40 FEET TO A POINT OF COMPOUND CURVE; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 455.00 FEET THROUGH A CENTRAL ANGLE OF 24°20'00" A DISTANCE OF 193.24 FEET; THENCE FROM SAID POINT NORTH 44°34'20" EAST TANGENT TO SAID CURVE A DISTANCE OF 70.16 FEET TO A POINT TANGENT TO A CURVE TO THE RIGHT; THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 255.00 FEET THROUGH A CENTRAL ANGLE OF 44°06'30" A DISTANCE OF 173.22 FEET TO A POINT; THENCE FROM SAID POINT NORTH 88°40'50" EAST TANGENT TO SAID CURVE A DISTANCE OF 126.16 FEET TO A POINT OF TANGENCY TO A CURVE TO THE LEFT; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 325.00 FEET THROUGH A CENTRAL ANGLE OF 38°36'40" A DISTANCE OF 219.02 FEET TO A POINT; THENCE FROM SAID POINT NORTH 50°04'10" EAST TANGENT TO SAID CURVE A DISTANCE OF 218.69 FEET TO A POINT TANGENT TO A CURVE TO THE RIGHT; THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 815.00 FEET THROUGH A CENTRAL ANGLE OF 11°08'39" A DISTANCE OF 157.71 FEET TO A PORTION SAID CURVE, SAID POINT DESIGNATED AS CORNER D-4; THENCE LEAVING SAID CURVE SOUTH 00°11'52" EAST A DISTANCE OF 1938.87 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-3; THENCE SOUTH 88°09'28" WEST A DISTANCE OF 639.10 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-2; THENCE NORTH 57°08'17" WEST A DISTANCE OF 1090.66 FEET MORE OR LESS TO THE CORNER AFORE

DESCRIPTION

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DESIGNATED CORNER D-1, THE TRUE POINT OF BEGINNING.

PARCEL "HH":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT RANCHO JAMUL CORNER NO. 4; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID RANCHO JAMUL NORTH 43°38'00" EAST (NORTH 46°55'00" EAST PER SAID CERTIFICATE OF COMPLIANCE) A DISTANCE OF 1100.00 FEET, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID RANCHO JAMUL BOUNDARY NORTH 43°30'00" WEST A DISTANCE OF 3167.41 FEET; THENCE NORTH 86°33'22" EAST A DISTANCE OF 411.83 FEET; THENCE SOUTH 39°33'00" EAST A DISTANCE OF 205.68 FEET; THENCE NORTH 30°22'38" EAST A DISTANCE OF 806.74 FEET; THENCE NORTH 05°34'12" WEST A DISTANCE OF 1091.22 FEET; THENCE SOUTH 60°05'22" EAST A DISTANCE OF 988.30 FEET; THENCE NORTH 00°33'22" EAST A DISTANCE OF 605.70 FEET; THENCE NORTH 86°32'58" EAST A DISTANCE OF 330.36 FEET; THENCE NORTH 00°34'05" EAST A DISTANCE OF 327.21 FEET; THENCE NORTH 86°32'34" EAST A DISTANCE OF 330.43 FEET; THENCE NORTH 00°34'49" EAST A DISTANCE OF 327.25 FEET; THENCE NORTH 86°32'11" EAST A DISTANCE OF 330.50 FEET; THENCE NORTH 00°35'33" A DISTANCE OF 327.29 FEET; THENCE NORTH 86°31'41" EAST A DISTANCE OF 330.58 FEET; THENCE NORTH 00°36'16" EAST A DISTANCE OF 327.35 FEET; THENCE NORTH 86°31'17" EAST A DISTANCE OF 330.65 FEET; THENCE NORTH 00°37'02" EAST A DISTANCE OF 327.40 FEET; THENCE NORTH 86°30'54" EAST A DISTANCE OF 330.72 FEET; THENCE NORTH 00°37'44" EAST A DISTANCE OF 327.44 FEET; THENCE NORTH 86°30'30" EAST A DISTANCE OF 330.79 FEET; THENCE NORTH 00°38'28" EAST A DISTANCE OF 327.48 FEET; THENCE NORTH 86°30'07" EAST A DISTANCE OF 1720.33 FEET TO POINT "B" IN PARCEL "BB", GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH 00°15'32" WEST A DISTANCE OF 1309.38 FEET; THENCE NORTH 86°28'33" EAST A DISTANCE OF 1009.20 FEET TO SAID POINT "E" THENCE NORTH 00°11'21" WEST A DISTANCE OF 1309.92 FEET; THENCE NORTH 86°27'00" EAST A DISTANCE OF 3032.48 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 24, 25, 19 AND 30; THENCE SOUTH 00°01'00" WEST A DISTANCE OF 3561.20 FEET; THENCE NORTH 89°18'30" WEST A DISTANCE OF 4019.97 FEET; THENCE SOUTH 00°15'32" EAST A DISTANCE OF 1975.17 FEET TO THE SOUTHEAST CORNER OF PARCEL "CC" OF SAID GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294, SAID POINT BEING ON THE EASTERLY LINE OF SAID RANCHO JAMUL BOUNDARY; THENCE CONTINUING ALONG SAID RANCHO JAMUL BOUNDARY SOUTH 43°38'00" WEST A DISTANCE OF 5494.10 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM:

ALL THAT PORTION LYING EAST OF THE WEST LINE OF EXISTING CALIFORNIA STATE HIGHWAY 94.

ALSO EXCEPTING THEREFROM:

ALL THAT PORTION OF RIGHT OF WAY WITHIN OTAY LAKES ROAD WESTERLY OF SAID CALIFORNIA STATE HIGHWAY 94.

DESCRIPTION

5

ALSO EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

ALSO EXCEPTING THEREFROM:

ALL OF SAID PARCEL "CC" DESCRIBED IN SAID GRANT DEED.

PARCEL "II":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "C" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE SOUTH 00°26'08" WEST A DISTANCE OF 2612.30 FEET; TO A POINT ON THE SOUTH LINE OF SECTION 27 AS SHOWN ON SHEET 3 OF L. S. MAP NO. 430, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JUNE 1, 1931; THENCE ALONG SAID SOUTH LINE SOUTH 86°33'10" WEST A DISTANCE OF 2416.10 FEET TO A POINT ON THE EAST LINE OF SUPERIOR COURT CASE NO. 1110 AS SHOWN ON SAID L. S. MAP NO. 430; THENCE ALONG SAID EAST LINE NORTH 04°40'30" EAST A DISTANCE OF 1392.50 FEET TO THE NORTHEAST CORNER OF SAID SUPERIOR COURT CASE; THENCE NORTH 86°31'41" EAST A DISTANCE OF 1002.17 FEET; THENCE NORTH 00°25'27" EAST A DISTANCE OF 1305.54 FEET; THENCE NORTH 86°30'07" EAST A DISTANCE OF 1319.40 FEET TO THE TRUE POINT OF BEGINNING.

EXHIBIT A

PARCEL A:

THAT PORTION OF RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT MONUMENT SDGPS 33, BEING A 3 INCH DIAMETER BRASS DISK WITH RAISED NIPPLES ET IN A 6 FOOT BY 2 FOOT HIGH BOULDER IN A GRANITE OUTCROP PER RECORD OF SURVEY MAP NO. 14310, RECORDED SEPTEMBER 16, 1993 IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY AS FILE NO. 93-612208, TO WHICH MONUMENT SANDIE NASA 1976, PER SAID RECORD OF SURVEY, BEARS S. 08°47'10" W., 7813.370M; THENCE S. 82°20'19" W., 36.594M TO THE WESTERLY POINT OF TERMINUS OF THAT CERTAIN COURSE ON THE SOUTHERLY RIGHT-OF-WAY OF STATE HIGHWAY 94 DELINEATED AS S. 88°58'12" W., 215.85' PER MS MAP 582 FILED IN THE SAN DIEGO COUNTY SURVEYOR IN 1963, SAID POINT BEING ALSO THE BEGINNING OF A 716.281 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH A RADIAL BEARS S. 01°02'06" E.; THENCE ALONG SAID STATE HIGHWAY 94

DESCRIPTION

6

RIGHT-OF-WAY NORTHWESTERLY 399.943 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 31°59'30" TO THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID RIGHT-OF-WAY, S. 30°57'24" W., 10.973 M TO THE BEGINNING OF A NON-TANGENT 727.254 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. 30°57'24" W.; THENCE NORTHWESTERLY 299.642 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°36'25"; THENCE TANGENT TO SAID CURVE N 35°26'11" W., 183.638 M; THENCE N. 74°47'17" W., 78.834 M; THENCE N. 35°26'11" W., 60.960 M; THENCE N. 17°16'37" W., 160.389 M; THENCE N. 35°26'11" W., 137.160 M; THENCE NORTH 55°59'59" WEST., 98.9286 M; THENCE N. 11°44'40" W., 105.805 M TO A POINT ON THE SOUTHWESTERLY RIGHT-OF-WAY STATE ROUTE 94, BEING THE NORTHWESTERLY TERMINUS OF THAT CERTAIN COURSE DELINEATED AS N.35°58'34" E., 1121.48' PER SAID MS MAP 582, SAID POINT HEREIN DESIGNATED AS POINT "X"; THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY THROUGH THE FOLLOWING COURSES: S.35°58'43" E., 341.883 M; S.26°54'19" E., 123.306 M; S.45°09'48" E., 108.255 M; S.35°25'45" E., 214.121 M TO THE BEGINNING OF A NON-TANGENT 716.281 M RADIUS CURVE CONCAVE NORTHEASTERLY, A RADIAL TO SAID BEGINNING BEARS SOUTH. 54°33'49" W.; SOUTHEASTERLY 295.121 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°36'25" TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH THE UNDERLYING FEE INTEREST IN AND TO THAT PORTION OF THE EXISTING HIGHWAY NOW USED AND ACKNOWLEDGED AS STATE HIGHWAY 94 APPURTENANT TO THE ABOVE DESCRIBED PARCEL.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH ADJUSTMENT (CCS 83 (1991.35) ZONE 6, MULTIPLY ALL DISTANCES USED IN THE ABOVE DESCRIPTION BY 1.000011 TO OBTAIN GROUND LEVEL DISTANCES.

MULTIPLY METERS BY EXACTLY 39.37/12 TO CONVERT TO U. S. SURVEY FEET.

PARCEL B:

THAT PORTION OF RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "X" DESCRIBED ABOVE IN PARCEL "A", SAID POINT BEING THE BEGINNING OF A NON-TANGENT 396.241 M RADIUS CURVE CONCAVE EASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. 67°51'23" W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE 110.253 M THROUGH A CENTRAL ANGLE OF 15°56'32"; THENCE TANGENT TO SAID CURVE N.06°12'05" W., 65.382 M; THENCE N.51°27'35" W., 65.109 M; THENCE N. 16°38'11" W., 95.206 M; THENCE N.00°56'25" W., 92.799 M TO THE BEGINNING OF A NON-TANGENT 339.548 M RADIUS CURVE CONCAVE SOUTHWESTERLY, TO WHICH BEGINNING A RADIAL BEARS N 49°35'27" E; THENCE NORTHWESTERLY 189.452 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 31°58'06"; THENCE NONTANGENT TO SAID CURVE N. 72°24'45" W., 395.050 M TO THE BEGINNING OF A TANGENT 635.814 M RADIUS CURVE CONCAVE NORTHEASTERLY; THENCE NORTHWEST ALONG THE ARC OF SAID CURVE 343.400 M THROUGH A CENTRAL ANGLE OF 30°56'42"; THENCE NON-TANGENT TO SAID CURVE N. 41°29'58" W., 138.597 M; THENCE N. 41°11'31" W., 181.784 M; THENCE N. 39°39'03" W., 962.137 M; THENCE N. 39°29'02" W., 414.540 M; THENCE N. 50°30'58" E., 20.117 M TO THE

DESCRIPTION

7

SOUTHWESTERLY RIGHT-OF-WAY OF EXISTING STATE HIGHWAY 94; THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY THROUGH THE FOLLOWING COURSES: S. $39^{\circ}29'02''$ E., 414.510 M; S. $39^{\circ}39'03''$ E., 961.837 M; S. $41^{\circ}11'31''$ E., 181.516 M; S. $48^{\circ}30'05''$ W., 9.144 M TO THE NORTHWESTERLY POINT OF TERMINUS OF THAT CERTAIN COURSE IN THE SOUTHWESTERLY RIGHT-OF-WAY OF STATE HIGHWAY 94 DELINEATED AS S. $41^{\circ}29'20''$ E., 454.34' PER MS MAP 754 FILED WITH THE SAN DIEGO COUNTY SURVEYOR IN 1976; S. $41^{\circ}29'59''$ EAST., 138.492 M TO THE BEGINNING OF A NON-TANGENT 624.841 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. $48^{\circ}31'58''$ W.; SOUTHEASTERLY 337.473 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $30^{\circ}56'42''$; TANGENT S. $72^{\circ}24'45''$ E., 395.057 M TO THE BEGINNING OF A NON-TANGENT 350.521 M RADIUS CURVE CONCAVE SOUTHWESTERLY, TO WHICH BEGINNING A RADIAL BEARS N. $17^{\circ}37'21''$ E.; SOUTHEASTERLY 210.179 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF $34^{\circ}21'20''$; NON-TANGENT S. $20^{\circ}22'43''$ E., 217.168 M; S. $06^{\circ}12'05''$ E., 189.457 M TO THE POINT OF BEGINNING.

TOGETHER WITH THE UNDERLYING FEE INTEREST IN AND TO THAT PORTION OF THE EXISTING HIGHWAY NOW USED AND ACKNOWLEDGED AS STATE HIGHWAY 94 APPURTENANT TO THE ABOVE DESCRIBED PARCEL.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH ADJUSTMENT (CCS 83 (1991.35) ZONE 6, MULTIPLY ALL DISTANCES USED IN THE ABOVE DESCRIPTION BY 1.000011 TO OBTAIN GROUND LEVEL DISTANCES.

MULTIPLY METERS BY EXACTLY 39.37/12 TO CONVERT TO U. S. SURVEY FEET.

Rancho Jamul Habitat Restoration Conceptual Plan

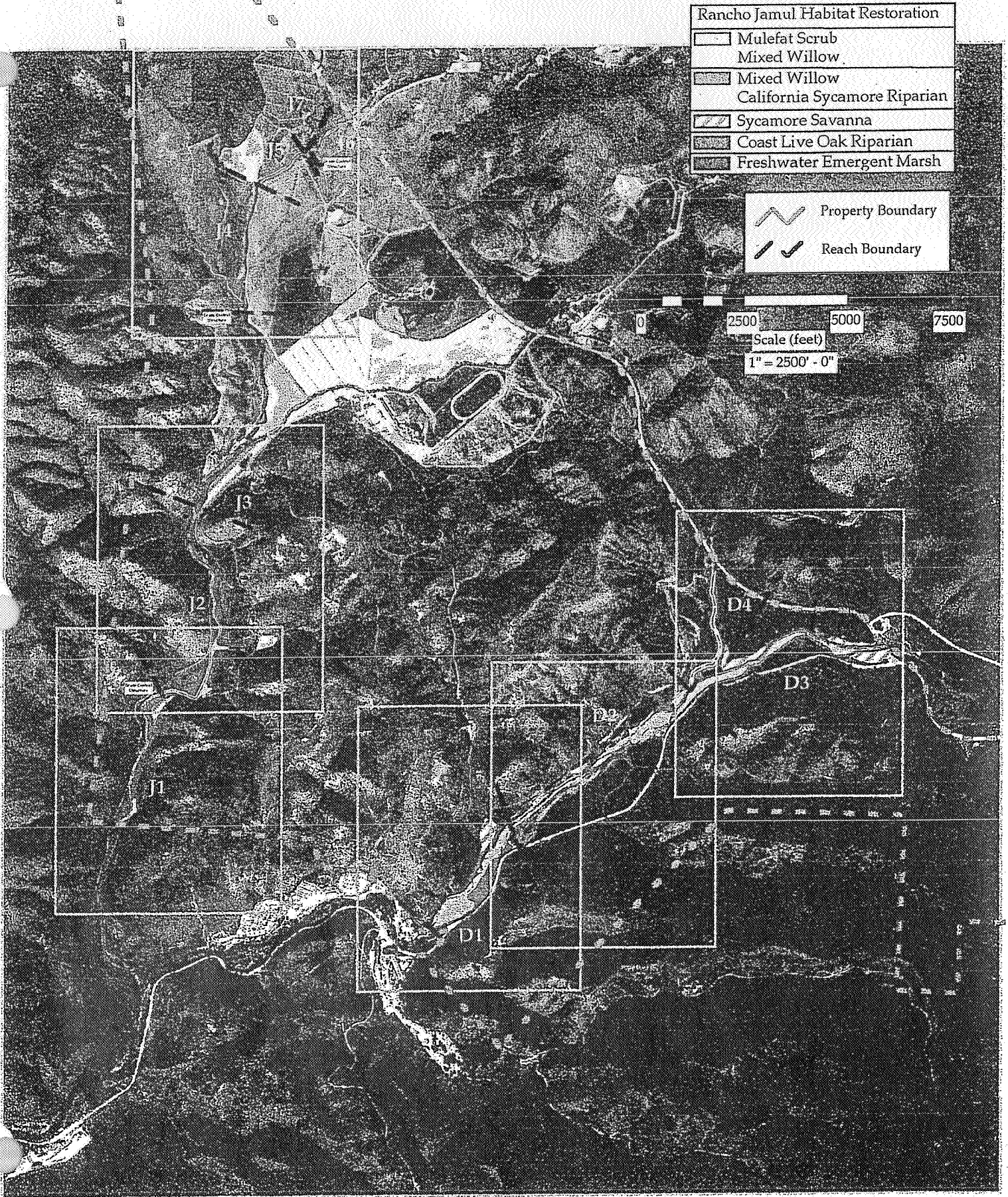


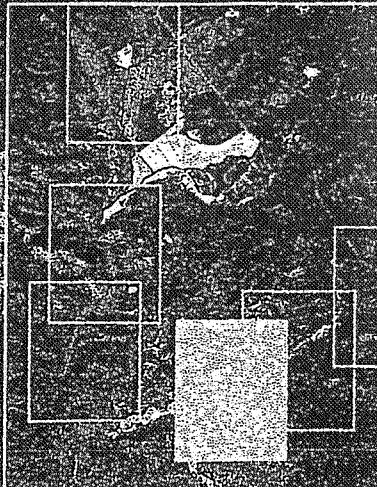
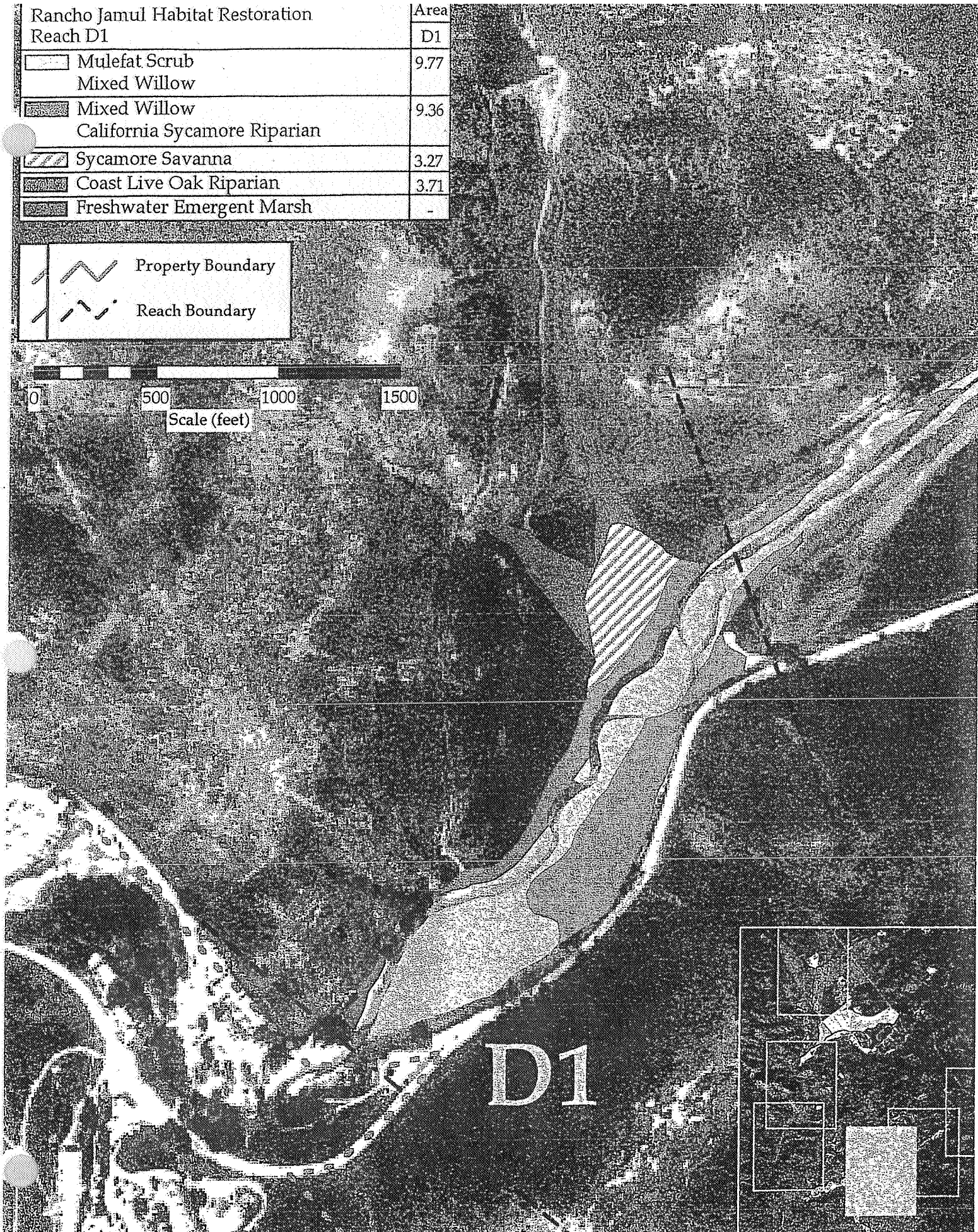
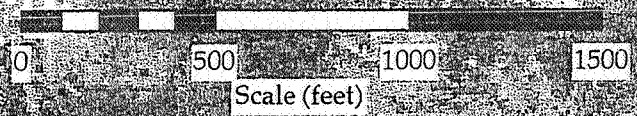


EXHIBIT B

Rancho Jamul Habitat Restoration	
Reach D1	
Mulefat Scrub Mixed Willow	9.77
Mixed Willow California Sycamore Riparian	9.36
Sycamore Savanna	3.27
Coast Live Oak Riparian	3.71
Freshwater Emergent Marsh	-

 Property Boundary
 Reach Boundary











Kancho Jamul Habitat Restoration


Reach D2

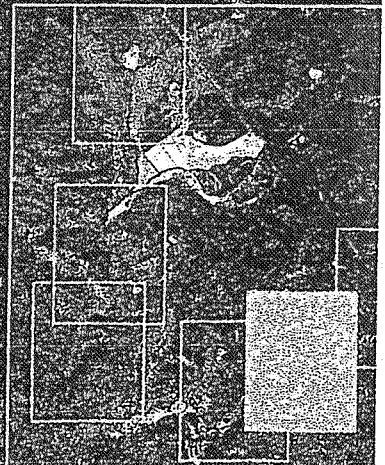
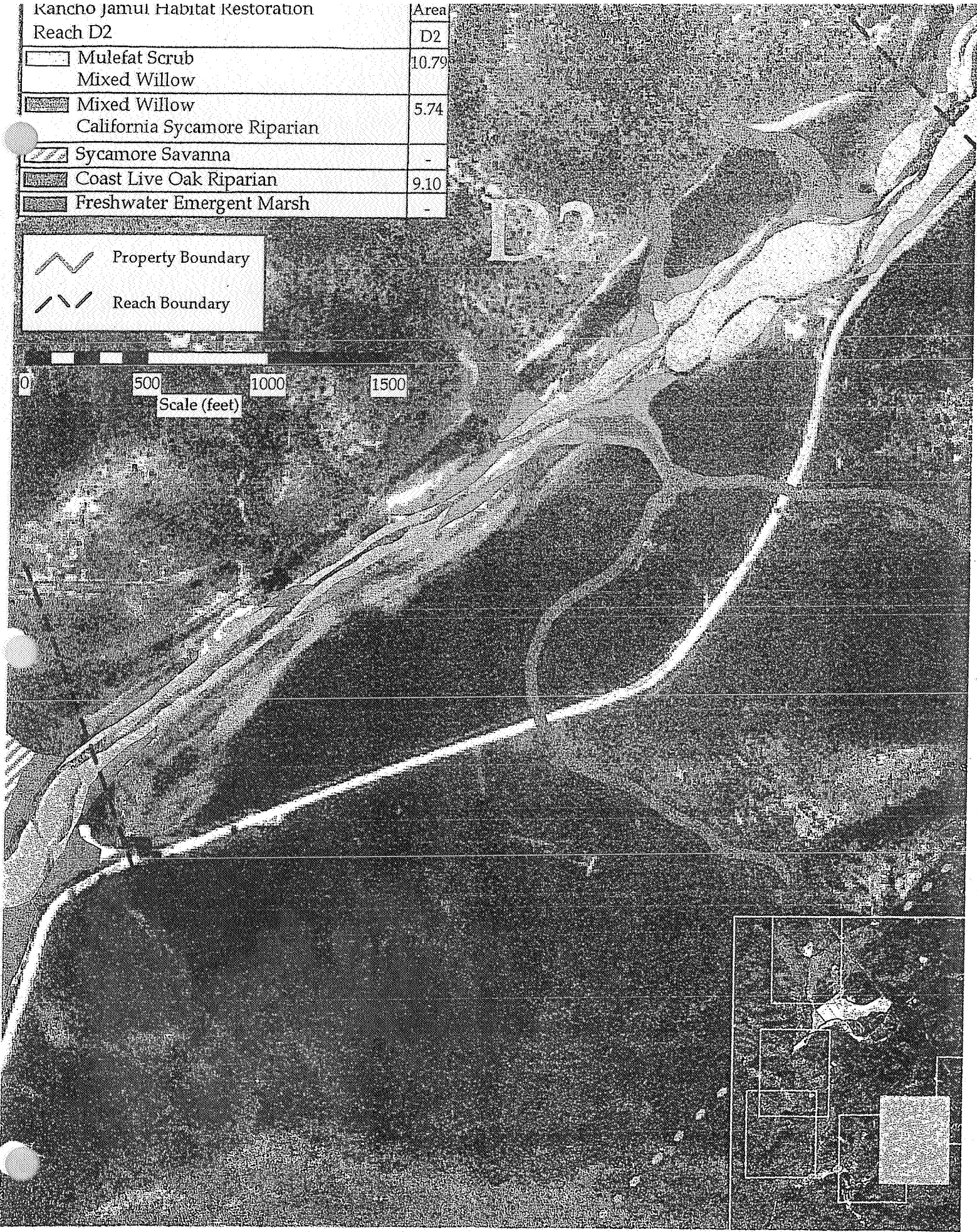
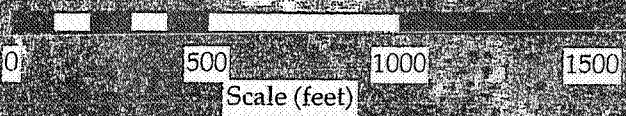
Area

D2

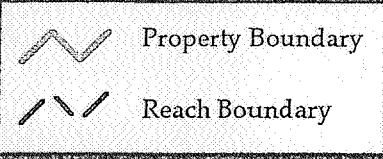
 Mulefat Scrub	10.79
 Mixed Willow	
 Mixed Willow	5.74
 California Sycamore Riparian	
 Sycamore Savanna	-
 Coast Live Oak Riparian	9.10
 Freshwater Emergent Marsh	-

 Property Boundary

 Reach Boundary

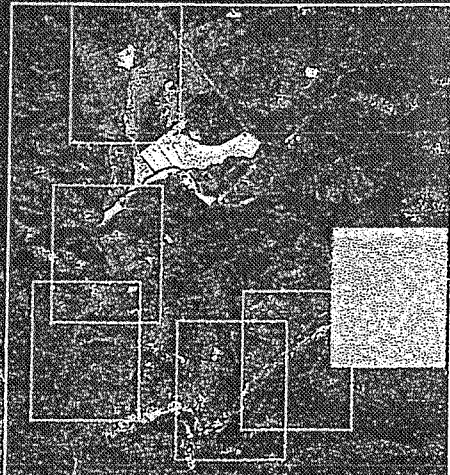
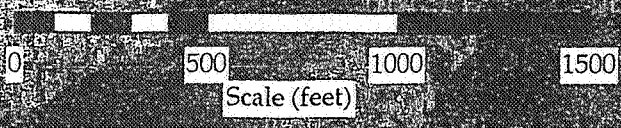







Rancho Jamul Habitat Restoration Reaches D3 and D4	Area	
	D3	D4
Mulefat Scrub Mixed Willow	8.34	3.79
Mixed Willow California Sycamore Riparian	9.33	6.43
Sycamore Savanna	6.84	.90
Coast Live Oak Riparian	-	-
Freshwater Emergent Marsh	-	-





D4

D3

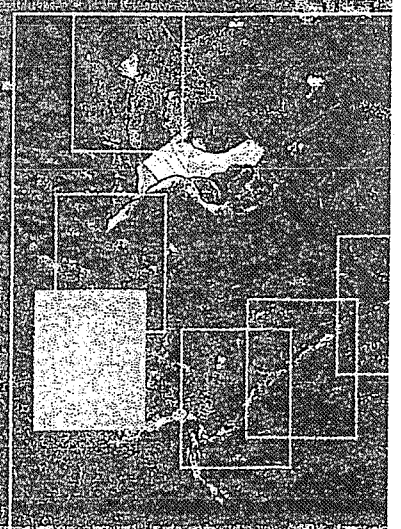
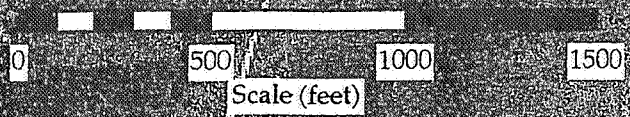


Rancho Jamul Habitat Restoration		
Reach J1		
	Mulefat Scrub Mixed Willow	2.54
	Mixed Willow California Sycamore Riparian	3.95
	Sycamore Savanna	1.33
	Coast Live Oak Riparian	.74
	Freshwater Emergent Marsh	-



	Property Boundary
	Reach Boundary

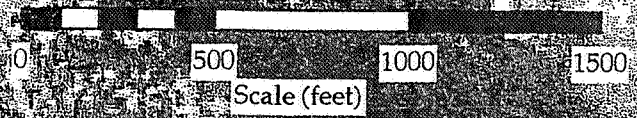
Grade Control
Structure

J1

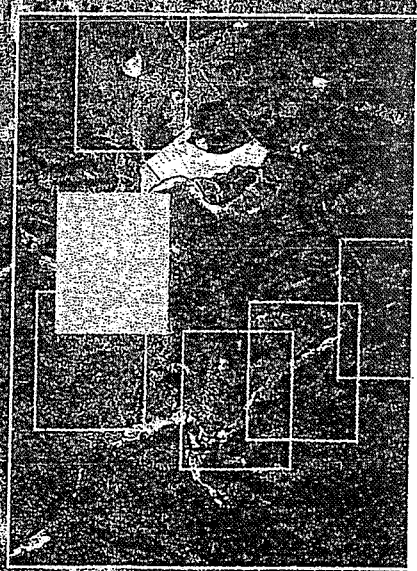


Rancho Jamul Habitat Restoration Reaches J2 and J3	Area	
	J2	J3
Mulefat Scrub Mixed Willow	5.66	-
Mixed Willow California Sycamore Riparian	8.81	2.58
Sycamore Savanna	.43	8.31
Coast Live Oak Riparian	1.07	-
Freshwater Emergent Marsh	.48	-

 Property Boundary
 Reach Boundary





Grade Control Structure

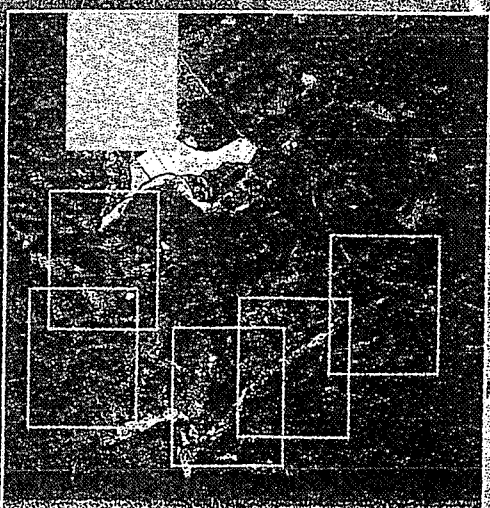
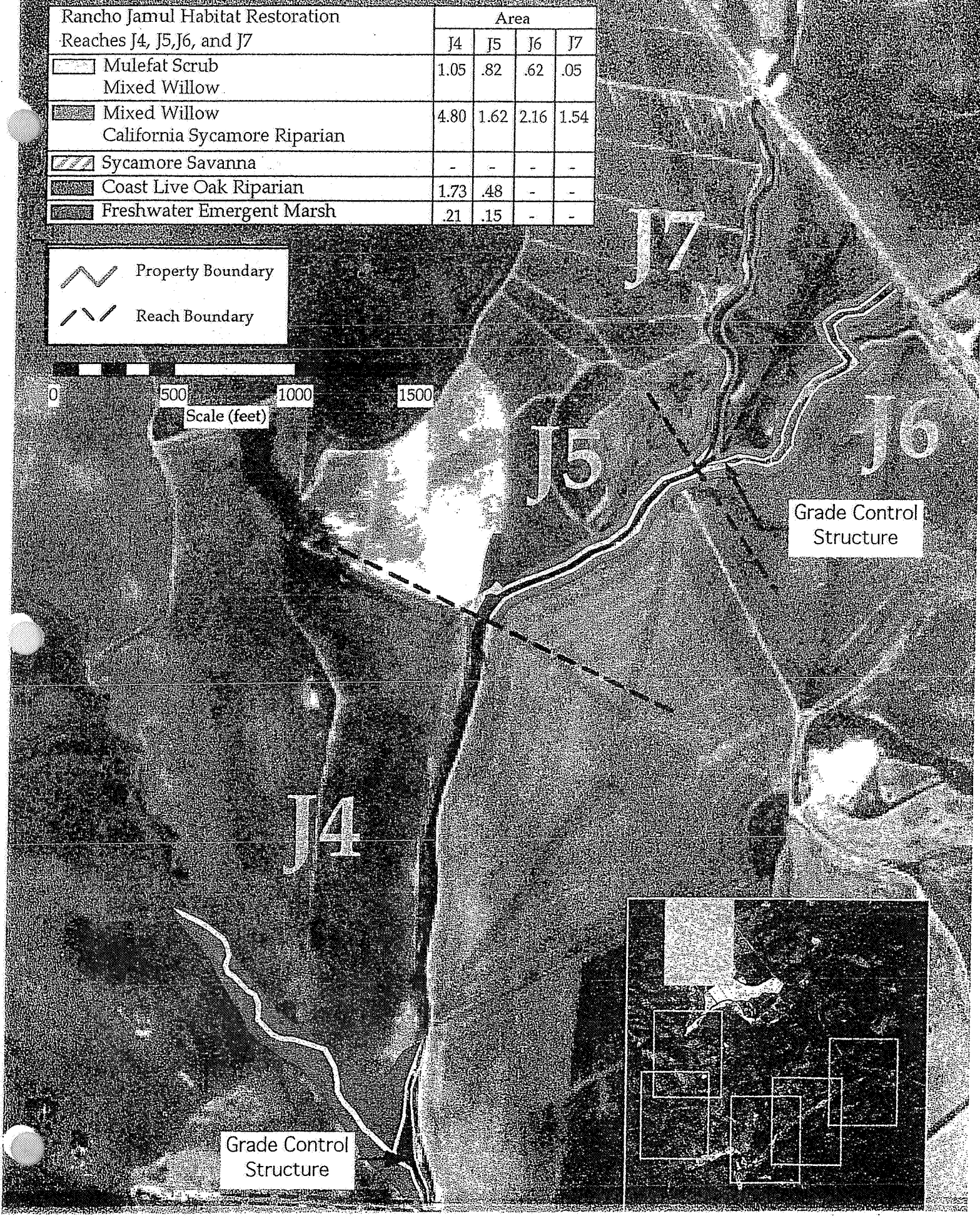
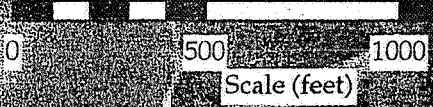


J2

J3

Rancho Jamul Habitat Restoration Reaches J4, J5, J6, and J7	Area			
	J4	J5	J6	J7
Mulefat Scrub Mixed Willow	1.05	.82	.62	.05
Mixed Willow California Sycamore Riparian	4.80	1.62	2.16	1.54
Sycamore Savanna	-	-	-	-
Coast Live Oak Riparian	1.73	.48	-	-
Freshwater Emergent Marsh	.21	.15	-	-

 Property Boundary
 Reach Boundary



RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Wildlands, Inc.
5731 Manzanita Avenue
Carmichael, CA 95608

Space Above Line For Recorder's Use

MEMORANDUM OF LAND USE AND EASEMENT AGREEMENT

This Memorandum of Land Use and Easement Agreement ("Agreement") is made by and between THE TRUST FOR PUBLIC LAND, a California nonprofit public benefit corporation ("Trust"), and WILDLANDS, INC., a California corporation ("Wildlands"), who agree as follows:

1. Rancho Jamul Property. The Trust owns that certain real property (the "Rancho Jamul Property") located in San Diego County, California, which is more particularly described in **Schedule 1** attached hereto and incorporated herein.
2. Agreement. The Trust and Wildlands have entered into that certain unrecorded Land Use and Easement Agreement (the "Agreement") of even date herewith for the purpose of enabling Wildlands to develop a wetland mitigation bank ("Mitigation Bank") on the Rancho Jamul Property. In the event of any conflict between the terms of the Agreement and the terms of this Memorandum, the terms of the Agreement shall prevail.
3. Mitigation Bank Site. The Agreement provides, among other things, that the Mitigation Bank site shall be approximately 150 acres in size, and shall be located along the two streambeds lying within the Rancho Jamul Property. The exact legal description of such 150± acre site shall be determined in accordance with the Agreement, and once it has been determined, the parties shall execute and record an amendment to this Memorandum containing such legal description. The legal description of such 150± acre site, is called the "Mitigation Bank Site."
4. Grant of Rights. The Trust has granted and does hereby grant to Wildlands, the following rights and interests, as more fully provided in the Agreement:
 - A. An exclusive easement and right to use the Mitigation Bank Site for the purposes of the establishment, development, operation and maintenance thereon of a Mitigation Bank;

B. Non-exclusive easements: (i) to use the roads, paths, trails and other accessways, as they may exist from time to time, which are located within those portions of the Rancho Jamul Property shown generally on Schedule 2 attached hereto and incorporated herein, as they may exist from time to time, for purposes of vehicular and pedestrian access to and from the Mitigation Bank Site; and (ii) to create such service roads within the area shown on Exhibit B, as may be reasonably necessary or convenient to construct, maintain, repair and reconstruct the Mitigation Bank.

C. Non-exclusive easements to cross those portions of the Rancho Jamul Property as may be reasonably necessary or convenient to gain access from the roads, paths, trails and other accessways described in Paragraph 4B, as they may exist from time to time, to the Mitigation Bank Site;

D. Non-exclusive easements to existing ground wells and other water rights appurtenant to or otherwise granted to the Rancho Jamul Property, as well as the right to sink new wells, and the right to extract and/or divert water from such sources and to transport and convey such water to and through the Mitigation Bank Site for purposes of habitat restoration and maintenance within the Mitigation Bank Site, and incidental purposes, but only to the extent that such uses do not result in a material adverse impact on the remainder of the Rancho Jamul Property;

E. Such incidental rights as may be necessary or appropriate in order to develop, maintain, operate and/or preserve the Mitigation Bank in accordance with the requirements of the Regulatory Agencies, including without limitation, the right of entry described in Section 2.05.A of the Agreement.

DATED: August 10, 1998.

TPL:

THE TRUST FOR PUBLIC LAND
a California nonprofit public benefit
corporation

BY: Shuetily

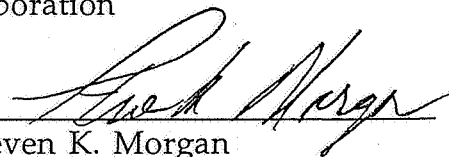
ITS: Regional Counsel

- AND -

WILDLANDS:

WILDLANDS, INC.
a California corporation

BY: _____



Steven K. Morgan
President

STATE OF CALIFORNIA)
COUNTY OF San Francisco)

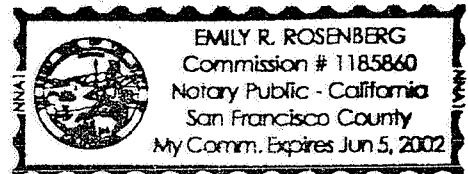
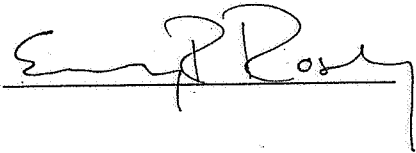
On August 11, 1998, before me, the undersigned notary public,
personally appeared TILY SHUE

personally known to me
 proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that she executed the same in her authorized capacity,
and that by her signature on the instrument the person, or the entity upon
behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature



STATE OF CALIFORNIA)
COUNTY OF SACRAMENTO)

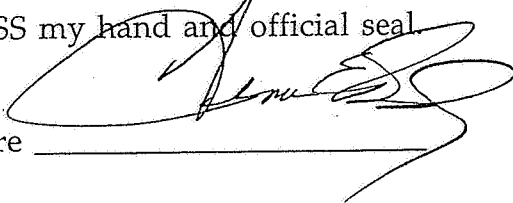
On August 7, 1998, before me, the undersigned notary public,
personally appeared **STEVEN K. MORGAN**,

personally known to me
 proved to me on the basis of satisfactory evidence

to be the person whose name is subscribed to the within instrument and
acknowledged to me that he executed the same in his authorized capacity, and
that by his signature on the instrument the person, or the entity upon behalf
of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature



DESCRIPTION

1

PARCEL "DD":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID RANCHO JAMUL, SAID POINT BEING CORNER NO. 16 AS SHOWN ON L.S. MAP NO. 430, RECORDED MAY 28, 1931 IN THE OFFICE OF THE SAN DIEGO COUNTY RECORDER IN SAN DIEGO COUNTY, STATE OF CALIFORNIA; THENCE SOUTH 88°42'00" EAST (SOUTH 88°18'25" EAST PER SAID CERTIFICATE OF COMPLIANCE) A DISTANCE OF 529.37 FEET TO THE NORTHWEST CORNER OF INDIAN CEMETERY AS SHOWN ON L.S. MAP NO. 430; THENCE SOUTH 01°18'00" WEST A DISTANCE OF 239.63 FEET; THENCE SOUTH 88°42'00" EAST A DISTANCE OF 83.66 FEET; THENCE SOUTH 86°21'37" EAST A DISTANCE OF 388.78 FEET; THENCE SOUTH 88°48'26" EAST A DISTANCE OF 721.24 FEET; THENCE NORTH 21°58'07" WEST A DISTANCE OF 257.03 FEET; THENCE SOUTH 88°42'00" EAST A DISTANCE OF 338.54 FEET TO A POINT ON THE WEST LINE OF CALIFORNIA STATE HIGHWAY 94, SAID POINT BEING ON A NON-TANGENT 555.84 FOOT RADIUS CURVE, CONCAVE SOUTHWESTERLY, THE RADIAL BEARING FROM SAID POINT BEARS SOUTH 50°46'01" WEST; THENCE NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 06°07'25", AN ARC LENGTH OF 59.41 FEET TO THE NORTH BOUNDARY OF SAID RANCHO JAMUL; THENCE ALONG SAID NORTH BOUNDARY SOUTH 88°42'00" EAST A DISTANCE OF 3394.65 FEET TO CORNER NO. 15 OF SAID RANCHO JAMUL; THENCE SOUTH 01°57'00" WEST A DISTANCE OF 1990.30 FEET TO RANCHO JAMUL CORNER NO. 14; THENCE SOUTH 89°34'30" EAST 40.00 FEET; THENCE SOUTH 00°27'30" WEST A DISTANCE OF 1944.30 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°27'30" EAST A DISTANCE OF 1320.00 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH 00°27'30" EAST A DISTANCE OF 1570.88 FEET; THENCE SOUTH 83°32'40" WEST A DISTANCE OF 2564.99 FEET TO THE WEST BOUNDARY OF SAID RANCHO JAMUL; THENCE ALONG SAID BOUNDARY NORTH 08°21'30" WEST A DISTANCE OF 966.60 FEET TO RANCHO JAMUL BOUNDARY NO. 17; THENCE NORTH 03°12'00" EAST A DISTANCE OF 627.15 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM:

ALL THAT PORTION LYING EAST OF THE WEST LINE OF SAID EXISTING CALIFORNIA STATE HIGHWAY 94.

ALSO EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

PARCEL "EE":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ.,

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IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE COMMON CORNER OF SECTIONS 14, 15, 22 AND 23, TOWNSHIP 17 SOUTH, RANGE 1 EAST SAN BERNARDINO MERIDIAN, AS SHOWN ON L. S. MAP NO. 430; THENCE ALONG THE EAST LINE OF SAID SECTION 22 SOUTH $00^{\circ}27'30''$ WEST A DISTANCE OF 1301.78 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID EAST LINE SOUTH $00^{\circ}27'30''$ WEST A DISTANCE OF 1301.77 FEET; THENCE LEAVING SAID EAST LINE SOUTH $86^{\circ}49'26''$ WEST A DISTANCE OF 1,328.00 FEET TO POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH $00^{\circ}26'49''$ EAST A DISTANCE OF 1305.88 FEET; THENCE NORTH $86^{\circ}59'09''$ EAST A DISTANCE OF 1320.0 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL "FF":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE SOUTH $86^{\circ}48'26''$ WEST A DISTANCE OF 2640.00 FEET; THENCE SOUTH $00^{\circ}25'27''$ WEST A DISTANCE OF 3933.67 FEET; THENCE NORTH $86^{\circ}28'33''$ EAST A DISTANCE OF 1319.70 FEET; THENCE SOUTH $00^{\circ}26'08''$ WEST A DISTANCE OF 1306.15 FEET TO POINT "C" OF SAID GRANT DEED; THENCE NORTH $86^{\circ}30'07''$ EAST A DISTANCE OF 1319.40 FEET; THENCE NORTH $00^{\circ}26'49''$ EAST A DISTANCE OF 2613.52 FEET; THENCE SOUTH $86^{\circ}27'00''$ WEST A DISTANCE OF 1320.00 FEET; THENCE NORTH $00^{\circ}26'08''$ EAST A DISTANCE OF 1309.98 FEET; THENCE NORTH $86^{\circ}37'44''$ EAST A DISTANCE OF 330.00 FEET; THENCE NORTH $00^{\circ}26'17''$ EAST A DISTANCE OF 327.24 FEET; THENCE NORTH $86^{\circ}40'27''$ EAST A DISTANCE OF 330.00 FEET; THENCE NORTH $00^{\circ}26'28''$ EAST A DISTANCE OF 326.98 FEET; THENCE NORTH $86^{\circ}43'03''$ EAST A DISTANCE OF 660.00 FEET; THENCE NORTH $00^{\circ}26'49''$ EAST A DISTANCE OF 652.94 FEET TO THE POINT OF BEGINNING.

PARCEL "GG":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "A" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH $86^{\circ}48'26''$ EAST A DISTANCE OF 1320.00 FEET; THENCE NORTH $00^{\circ}27'30''$ EAST A DISTANCE OF 2603.55 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AND IN SAID GRANT DEED AS COMMON CORNER NO. 14, 15, 22 AND 23, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE NORTH $00^{\circ}27'30''$ EAST A DISTANCE OF 2640.00 FEET TO A POINT DESIGNATED AS "D"; THENCE NORTH $87^{\circ}09'50''$ EAST A DISTANCE OF 2658.15 FEET; THENCE SOUTH $00^{\circ}27'30''$ WEST A DISTANCE OF 2640.00 FEET; THENCE NORTH

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87°09'50" EAST A DISTANCE OF 2658.15 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 13, 14, 23 AND 24; THENCE SOUTH 00°39'10" WEST A DISTANCE OF 2571.00 FEET; THENCE NORTH 86°27'00" EAST A DISTANCE OF 2320.83 FEET; THENCE SOUTH 00°11'21" EAST A DISTANCE OF 2571.00 FEET; THENCE SOUTH 86°27'00" WEST A DISTANCE OF 2358.62 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 23, 24, 25 AND 26; THENCE NORTH 00°39'10" EAST A DISTANCE OF 1285.49 FEET; THENCE SOUTH 86°37'44" WEST A DISTANCE OF 1326.59 FEET; THENCE NORTH 00°36'12" EAST A DISTANCE OF 2579.12 FEET; THENCE SOUTH 85°59'09" WEST A DISTANCE OF 1328.24 FEET; THENCE SOUTH 00°33'17" WEST A DISTANCE OF 1293.63 FEET; SAID POINT BEARS NORTH 86°48'26" EAST A DISTANCE OF 3974.79 FEET FROM SAID POINT "A"; THENCE SOUTH 86°48'26" WEST A DISTANCE OF 1327.39 FEET; THENCE NORTH 00°30'23" EAST A DISTANCE OF 2595.40 FEET; THENCE SOUTH 87°09'50" WEST A DISTANCE OF 1329.08 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

ALSO EXCEPTING THEREFROM:

BEGINNING AT THE COMMON CORNER OF SECTIONS 22, 23, 26 AND 27, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, AS SHOWN ON SAID L. S. MAP NO. 430; THENCE NORTH 00°27'30" EAST ALONG THE COMMON BOUNDARY OF SECTION 22 AND 23, A DISTANCE OF 2881.43 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-1, AND BEING THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 00°27'30" EAST ALONG SAID COMMON BOUNDARY OF SECTIONS 22 AND 23 A DISTANCE OF 852.52 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-5; THENCE LEAVING SAID SECTION LINE NORTH 88°35'50" EAST A DISTANCE OF 257.37 FEET TO A POINT, SAID POINT BEING THE POINT OF TANGENCY TO A CURVE TO THE RIGHT; THENCE EASTERLY ALONG SAID CURVE HAVING A RADIUS OF 430.00 FEET THROUGH A CENTRAL ANGLE OF 20°40'00" A DISTANCE OF 155.10 FEET TO A POINT OF REVERSE CURVE TO THE LEFT; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 205.00 FEET THROUGH A CENTRAL ANGLE OF 40°21'30" A DISTANCE OF 144.40 FEET TO A POINT OF COMPOUND CURVE; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 455.00 FEET THROUGH A CENTRAL ANGLE OF 24°20'00" A DISTANCE OF 193.24 FEET; THENCE FROM SAID POINT NORTH 44°34'20" EAST TANGENT TO SAID CURVE A DISTANCE OF 70.16 FEET TO A POINT TANGENT TO A CURVE TO THE RIGHT; THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 255.00 FEET THROUGH A CENTRAL ANGLE OF 44°06'30" A DISTANCE OF 173.22 FEET TO A POINT; THENCE FROM SAID POINT NORTH 88°40'50" EAST TANGENT TO SAID CURVE A DISTANCE OF 126.16 FEET TO A POINT OF TANGENCY TO A CURVE TO THE LEFT; THENCE ALONG SAID CURVE TO THE LEFT HAVING A RADIUS OF 325.00 FEET THROUGH A CENTRAL ANGLE OF 38°36'40" A DISTANCE OF 219.02 FEET TO A POINT; THENCE FROM SAID POINT NORTH 50°04'10" EAST TANGENT TO SAID CURVE A DISTANCE OF 218.69 FEET TO A POINT TANGENT TO A CURVE TO THE RIGHT; THENCE ALONG SAID CURVE TO THE RIGHT HAVING A RADIUS OF 815.00 FEET THROUGH A CENTRAL ANGLE OF 11°08'39" A DISTANCE OF 157.71 FEET TO A PORTION SAID CURVE, SAID POINT DESIGNATED AS CORNER D-4; THENCE LEAVING SAID CURVE SOUTH 00°11'52" EAST A DISTANCE OF 1938.87 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-3; THENCE SOUTH 88°09'28" WEST A DISTANCE OF 639.10 FEET TO A POINT, SAID POINT DESIGNATED AS CORNER D-2; THENCE NORTH 57°08'17" WEST A DISTANCE OF 1090.66 FEET MORE OR LESS TO THE CORNER AFORE

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DESIGNATED CORNER D-1, THE TRUE POINT OF BEGINNING.

PARCEL "HH":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT RANCHO JAMUL CORNER NO. 4; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID RANCHO JAMUL NORTH 43°38'00" EAST (NORTH 46°55'00" EAST PER SAID CERTIFICATE OF COMPLIANCE) A DISTANCE OF 1100.00 FEET, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID RANCHO JAMUL BOUNDARY NORTH 43°30'00" WEST A DISTANCE OF 3167.41 FEET; THENCE NORTH 86°33'22" EAST A DISTANCE OF 411.83 FEET; THENCE SOUTH 39°33'00" EAST A DISTANCE OF 205.68 FEET; THENCE NORTH 30°22'38" EAST A DISTANCE OF 806.74 FEET; THENCE NORTH 05°34'12" WEST A DISTANCE OF 1091.22 FEET; THENCE SOUTH 60°05'22" EAST A DISTANCE OF 988.30 FEET; THENCE NORTH 00°33'22" EAST A DISTANCE OF 605.70 FEET; THENCE NORTH 86°32'58" EAST A DISTANCE OF 330.36 FEET; THENCE NORTH 00°34'05" EAST A DISTANCE OF 327.21 FEET; THENCE NORTH 86°32'34" EAST A DISTANCE OF 330.43 FEET; THENCE NORTH 00°34'49" EAST A DISTANCE OF 327.25 FEET; THENCE NORTH 86°32'11" EAST A DISTANCE OF 330.50 FEET; THENCE NORTH 00°35'33" A DISTANCE OF 327.29 FEET; THENCE NORTH 86°31'41" EAST A DISTANCE OF 330.58 FEET; THENCE NORTH 00°36'16" EAST A DISTANCE OF 327.35 FEET; THENCE NORTH 86°31'17" EAST A DISTANCE OF 330.65 FEET; THENCE NORTH 00°37'02" EAST A DISTANCE OF 327.40 FEET; THENCE NORTH 86°30'54" EAST A DISTANCE OF 330.72 FEET; THENCE NORTH 00°37'44" EAST A DISTANCE OF 327.44 FEET; THENCE NORTH 86°30'30" EAST A DISTANCE OF 330.79 FEET; THENCE NORTH 00°38'28" EAST A DISTANCE OF 327.48 FEET; THENCE NORTH 86°30'07" EAST A DISTANCE OF 1720.33 FEET TO POINT "B" IN PARCEL "BB", GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE NORTH 00°15'32" WEST A DISTANCE OF 1309.38 FEET; THENCE NORTH 86°28'33" EAST A DISTANCE OF 1009.20 FEET TO SAID POINT "E" THENCE NORTH 00°11'21" WEST A DISTANCE OF 1309.92 FEET; THENCE NORTH 86°27'00" EAST A DISTANCE OF 3032.48 FEET TO A POINT SHOWN ON L. S. MAP NO. 430 AS COMMON CORNER NO. 24, 25, 19 AND 30; THENCE SOUTH 00°01'00" WEST A DISTANCE OF 3561.20 FEET; THENCE NORTH 89°18'30" WEST A DISTANCE OF 4019.97 FEET; THENCE SOUTH 00°15'32" EAST A DISTANCE OF 1975.17 FEET TO THE SOUTHEAST CORNER OF PARCEL "CC" OF SAID GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294, SAID POINT BEING ON THE EASTERLY LINE OF SAID RANCHO JAMUL BOUNDARY; THENCE CONTINUING ALONG SAID RANCHO JAMUL BOUNDARY SOUTH 43°38'00" WEST A DISTANCE OF 5494.10 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM:

ALL THAT PORTION LYING EAST OF THE WEST LINE OF EXISTING CALIFORNIA STATE HIGHWAY 94.

ALSO EXCEPTING THEREFROM:

ALL THAT PORTION OF RIGHT OF WAY WITHIN OTAY LAKES ROAD WESTERLY OF SAID CALIFORNIA STATE HIGHWAY 94.

DESCRIPTION

ALSO EXCEPTING THEREFROM:

THAT PORTION DESCRIBED IN THE UNRECORDED LEGAL DESCRIPTION BY CALTRANS FOR ACQUIRING ADDITIONAL RIGHT OF WAY FOR SAID CALIFORNIA HIGHWAY 94 IN EXHIBIT A ATTACHED HERETO AND MADE A PART HEREOF.

ALSO EXCEPTING THEREFROM:

ALL OF SAID PARCEL "CC" DESCRIBED IN SAID GRANT DEED.

PARCEL "II":

THAT PORTION OF PARCEL "A" AS DESCRIBED IN CERTIFICATE OF COMPLIANCE RECORDED JUNE 28, 1996 AS FILE NO. 1996-329183 OF OFFICIAL RECORDS, BEING A PORTION OF THE RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, AT PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "C" IN GRANT DEED RECORDED DECEMBER 19, 1997 AS DOCUMENT NO. 1997-0648294; THENCE SOUTH 00°26'08" WEST A DISTANCE OF 2612.30 FEET; TO A POINT ON THE SOUTH LINE OF SECTION 27 AS SHOWN ON SHEET 3 OF L. S. MAP NO. 430, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JUNE 1, 1931; THENCE ALONG SAID SOUTH LINE SOUTH 86°33'10" WEST A DISTANCE OF 2416.10 FEET TO A POINT ON THE EAST LINE OF SUPERIOR COURT CASE NO. 1110 AS SHOWN ON SAID L. S. MAP NO. 430; THENCE ALONG SAID EAST LINE NORTH 04°40'30" EAST A DISTANCE OF 1392.50 FEET TO THE NORTHEAST CORNER OF SAID SUPERIOR COURT CASE; THENCE NORTH 86°31'41" EAST A DISTANCE OF 1002.17 FEET; THENCE NORTH 00°25'27" EAST A DISTANCE OF 1305.54 FEET; THENCE NORTH 86°30'07" EAST A DISTANCE OF 1319.40 FEET TO THE TRUE POINT OF BEGINNING.

EXHIBIT A

PARCEL A:

THAT PORTION OF RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT MONUMENT SDGPS 33, BEING A 3 INCH DIAMETER BRASS DISK WITH RAISED NIPPLES ET IN A 6 FOOT BY 2 FOOT HIGH BOULDER IN A GRANITE OUTCROP PER RECORD OF SURVEY MAP NO. 14310, RECORDED SEPTEMBER 16, 1993 IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY AS FILE NO. 93-612208, TO WHICH MONUMENT SANDIE NASA 1976, PER SAID RECORD OF SURVEY, BEARS S. 08°47'10" W., 7813.370M; THENCE S. 82°20'19" W., 36.594M TO THE WESTERLY POINT OF TERMINUS OF THAT CERTAIN COURSE ON THE SOUTHERLY RIGHT-OF-WAY OF STATE HIGHWAY 94 DELINEATED AS S. 88°58'12" W., 215.85' PER MS MAP 582 FILED IN THE SAN DIEGO COUNTY SURVEYOR IN 1963, SAID POINT BEING ALSO THE BEGINNING OF A 716.281 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH A RADIAL BEARS S. 01°02'06" E.; THENCE ALONG SAID STATE HIGHWAY 94

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RIGHT-OF-WAY NORTHWESTERLY 399.943 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 31°59'30" TO THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID RIGHT-OF-WAY, S. 30°57'24" W., 10.973 M TO THE BEGINNING OF A NON-TANGENT 727.254 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. 30°57'24" W.; THENCE NORTHWESTERLY 299.642 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°36'25"; THENCE TANGENT TO SAID CURVE N 35°26'11" W., 183.638 M; THENCE N. 74°47'17" W., 78.834 M; THENCE N. 35°26'11" W., 60.960 M; THENCE N. 17°16'37" W., 160.389 M; THENCE N. 35°26'11" W., 137.160 M; THENCE NORTH 55°59'59" WEST., 98.9286 M; THENCE N. 11°44'40" W., 105.805 M TO A POINT ON THE SOUTHWESTERLY RIGHT-OF-WAY STATE ROUTE 94, BEING THE NORTHWESTERLY TERMINUS OF THAT CERTAIN COURSE DELINEATED AS N.35°58'34" E., 1121.48' PER SAID MS MAP 582, SAID POINT HEREIN DESIGNATED AS POINT "X"; THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY THROUGH THE FOLLOWING COURSES: S.35°58'43" E., 341.883 M; S.26°54'19" E., 123.306 M; S.45°09'48" E., 108.255 M; S.35°25'45" E., 214.121 M TO THE BEGINNING OF A NON-TANGENT 716.281 M RADIUS CURVE CONCAVE NORTHEASTERLY, A RADIAL TO SAID BEGINNING BEARS SOUTH. 54°33'49" W.; SOUTHEASTERLY 295.121 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°36'25" TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH THE UNDERLYING FEE INTEREST IN AND TO THAT PORTION OF THE EXISTING HIGHWAY NOW USED AND ACKNOWLEDGED AS STATE HIGHWAY 94 APPURTENANT TO THE ABOVE DESCRIBED PARCEL.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH ADJUSTMENT (CCS 83 (1991.35) ZONE 6, MULTIPLY ALL DISTANCES USED IN THE ABOVE DESCRIPTION BY 1.000011 TO OBTAIN GROUND LEVEL DISTANCES.

MULTIPLY METERS BY EXACTLY 39.37/12 TO CONVERT TO U. S. SURVEY FEET.

PARCEL B:

THAT PORTION OF RANCHO JAMUL, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE PLAT ATTACHED TO PATENT DEED RECORDED IN BOOK 2 OF PATENTS, PAGE 121 ET SEQ., IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT POINT "X" DESCRIBED ABOVE IN PARCEL "A", SAID POINT BEING THE BEGINNING OF A NON-TANGENT 396.241 M RADIUS CURVE CONCAVE EASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. 67°51'23" W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE 110.253 M THROUGH A CENTRAL ANGLE OF 15°56'32"; THENCE TANGENT TO SAID CURVE N.06°12'05" W., 65.382 M; THENCE N.51°27'35" W., 65.109 M; THENCE N. 16°38'11" W., 95.206 M; THENCE N.00°56'25" W., 92.799 M TO THE BEGINNING OF A NON-TANGENT 339.548 M RADIUS CURVE CONCAVE SOUTHWESTERLY, TO WHICH BEGINNING A RADIAL BEARS N 49°35'27" E; THENCE NORTHWESTERLY 189.452 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 31°58'06"; THENCE NONTANGENT TO SAID CURVE N. 72°24'45" W., 395.050 M TO THE BEGINNING OF A TANGENT 635.814 M RADIUS CURVE CONCAVE NORTHEASTERLY; THENCE NORTHWEST ALONG THE ARC OF SAID CURVE 343.400 M THROUGH A CENTRAL ANGLE OF 30°56'42"; THENCE NON-TANGENT TO SAID CURVE N. 41°29'58" W., 138.597 M; THENCE N. 41°11'31" W., 181.784 M; THENCE N. 39°39'03" W., 962.137 M; THENCE N. 39°29'02" W., 414.540 M; THENCE N. 50°30'58" E., 20.117 M TO THE

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SOUTHWESTERLY RIGHT-OF-WAY OF EXISTING STATE HIGHWAY 94; THENCE SOUTHEASTERLY ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY THROUGH THE FOLLOWING COURSES: S. 39°29'02" E., 414.510 M; S. 39°39'03" E., 961.837 M; S. 41°11'31" E., 181.516 M; S. 48°30'05" W., 9.144 M TO THE NORTHWESTERLY POINT OF TERMINUS OF THAT CERTAIN COURSE IN THE SOUTHWESTERLY RIGHT-OF-WAY OF STATE HIGHWAY 94 DELINEATED AS S. 41°29'20" E., 454.34' PER MS MAP 754 FILED WITH THE SAN DIEGO COUNTY SURVEYOR IN 1976; S. 41°29'59" EAST., 138.492 M TO THE BEGINNING OF A NON-TANGENT 624.841 M RADIUS CURVE CONCAVE NORTHEASTERLY, TO WHICH BEGINNING A RADIAL BEARS S. 48°31'58" W.; SOUTHEASTERLY 337.473 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 30°56'42"; TANGENT S. 72°24'45" E., 395.057 M TO THE BEGINNING OF A NON-TANGENT 350.521 M RADIUS CURVE CONCAVE SOUTHWESTERLY, TO WHICH BEGINNING A RADIAL BEARS N. 17°37'21" E.; SOUTHEASTERLY 210.179 M ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 34°21'20"; NON-TANGENT S. 20°22'43" E., 217.168 M; S. 06°12'05" E., 189.457 M TO THE POINT OF BEGINNING.



TOGETHER WITH THE UNDERLYING FEE INTEREST IN AND TO THAT PORTION OF THE EXISTING HIGHWAY NOW USED AND ACKNOWLEDGED AS STATE HIGHWAY 94 APPURTENANT TO THE ABOVE DESCRIBED PARCEL.

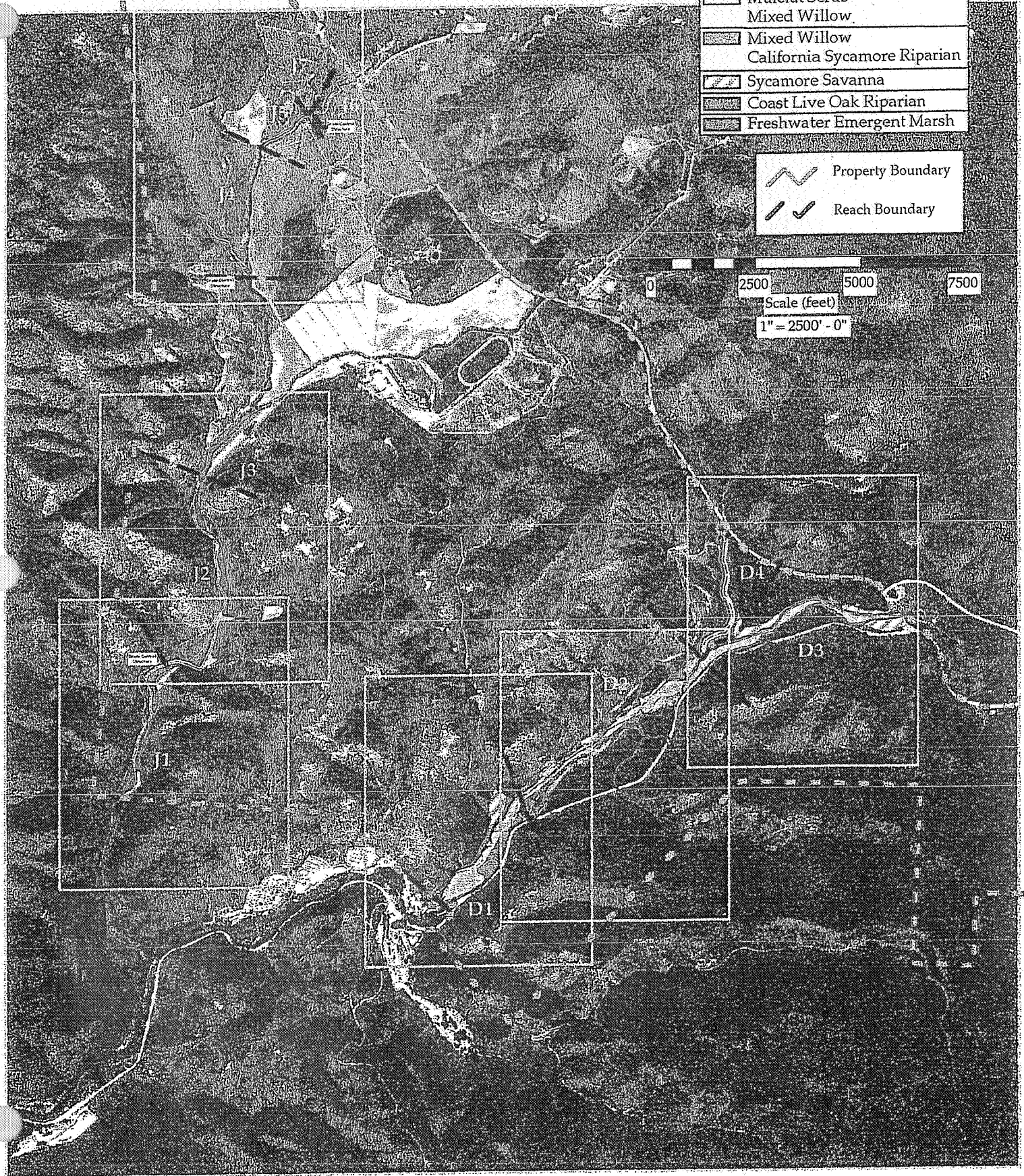
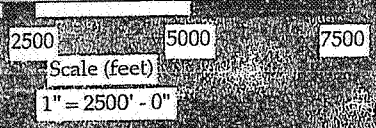
THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH ADJUSTMENT (CCS 83 (1991.35) ZONE 6, MULTIPLY ALL DISTANCES USED IN THE ABOVE DESCRIPTION BY 1.000011 TO OBTAIN GROUND LEVEL DISTANCES.






MULTIPLY METERS BY EXACTLY 39.37/12 TO CONVERT TO U. S. SURVEY FEET.

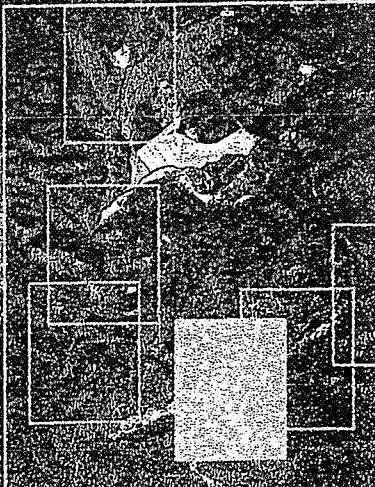
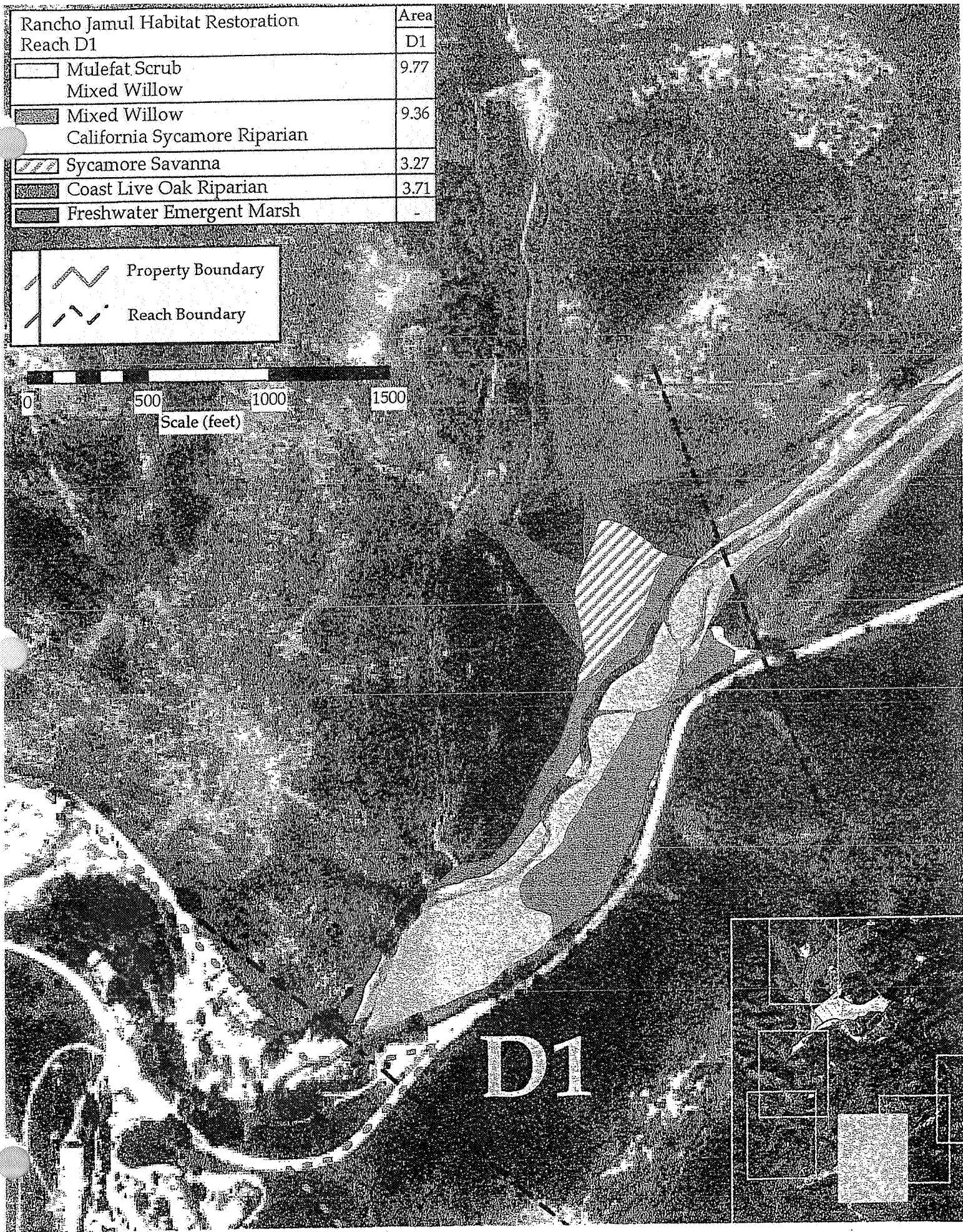
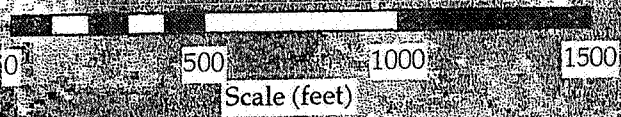
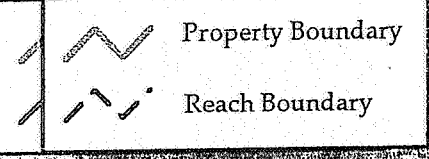
Rancho Jamul Habitat Restoration Conceptual Plan

Rancho Jamul Habitat Restoration	
	Mulefat Scrub
	Mixed Willow
	Mixed Willow
	California Sycamore Riparian
	Sycamore Savanna
	Coast Live Oak Riparian
	Freshwater Emergent Marsh








	Property Boundary
	Reach Boundary





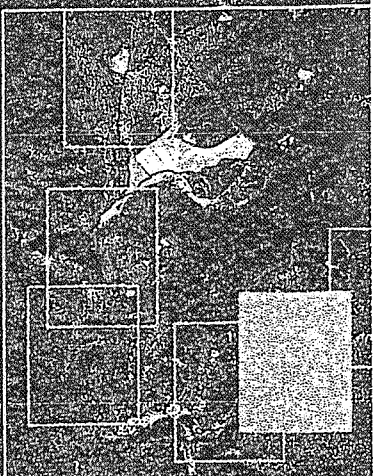
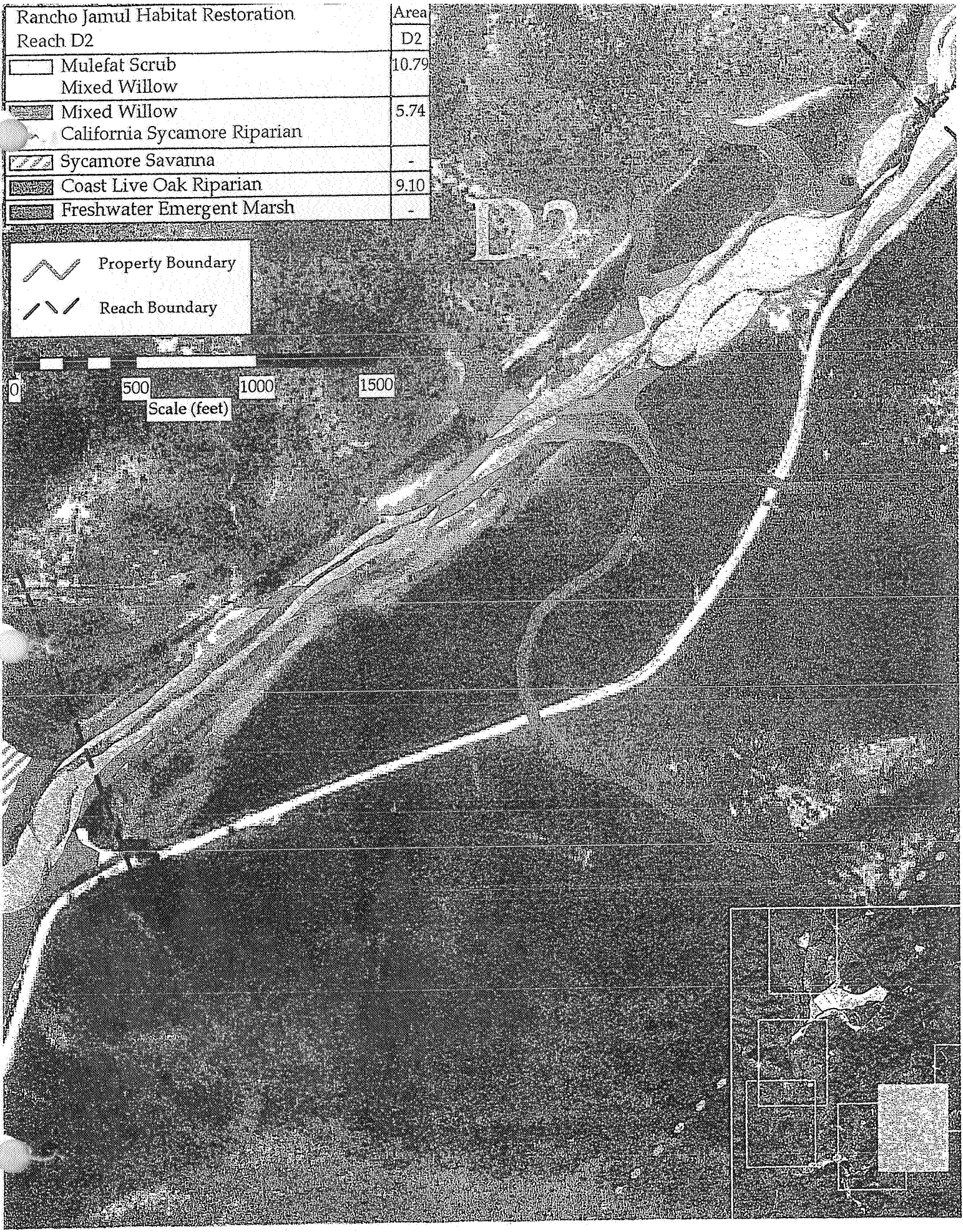
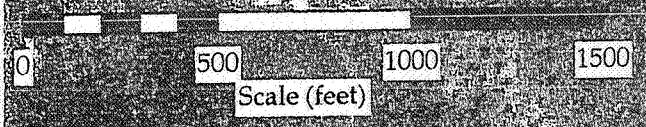
Rancho Jamul Habitat Restoration		Area
Reach D1		D1
	Mulefat Scrub Mixed Willow	9.77
	Mixed Willow California Sycamore Riparian	9.36
	Sycamore Savanna	3.27
	Coast Live Oak Riparian	3.71
	Freshwater Emergent Marsh	-









D1


Rancho Jamul Habitat Restoration			
Reach D2			
	Mulefat Scrub	Area	D2
	Mixed Willow	10.79	
	Mixed Willow	5.74	
	California Sycamore Riparian	-	
	Sycamore Savanna	-	
	Coast Live Oak Riparian	9.10	
	Freshwater Emergent Marsh	-	

 Property Boundary
 Reach Boundary



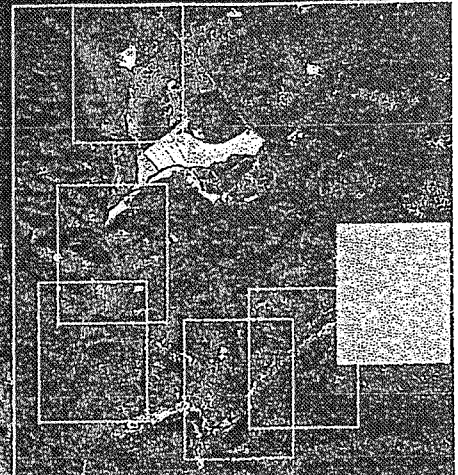
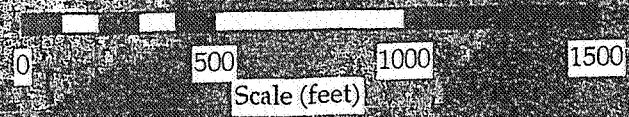
Rancho Jamul Habitat Restoration Reaches D3 and D4		Area	
		D3	D4
	Mulefat Scrub Mixed Willow	8.34	3.79
	Mixed Willow California Sycamore Riparian	9.33	6.43
	Sycamore Savanna	6.84	.90
	Coast Live Oak Riparian	-	-
	Freshwater Emergent Marsh	-	-








 Property Boundary



 Reach Boundary

D4

D3

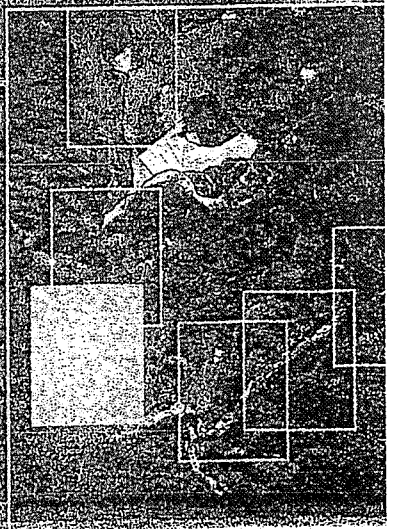
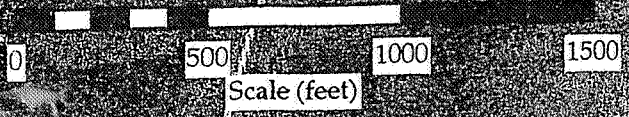


Rancho Jamul Habitat Restoration		Area
Reach J1		J1
	Mulefat Scrub	2.54
	Mixed Willow	
	Mixed Willow	3.95
	California Sycamore Riparian	
	Sycamore Savanna	1.33
	Coast Live Oak Riparian	.74
	Freshwater Emergent Marsh	-



	Property Boundary
	Reach Boundary

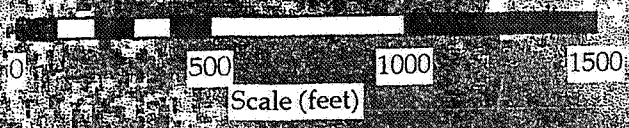
Grade Control Structure

J1

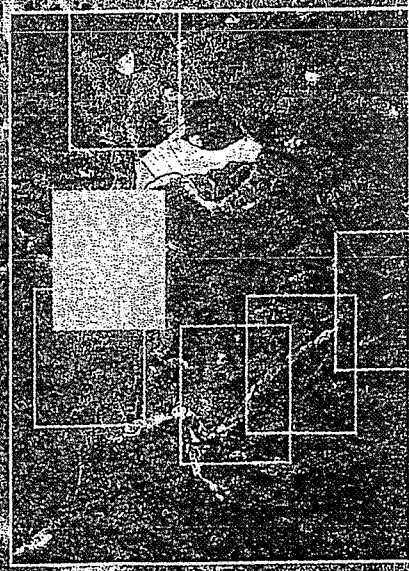


Rancho Jamul Habitat Restoration Reaches J2 and J3	Area	
	J2	J3
Mulefat Scrub	5.66	-
Mixed Willow	8.81	2.58
Mixed Willow California Sycamore Riparian	.43	8.31
Sycamore Savanna	1.07	-
Coast Live Oak Riparian	.48	-
Freshwater Emergent Marsh		

 Property Boundary
 Reach Boundary





Grade Control
Structure



Rancho Jamul Habitat Restoration
Reaches J4, J5, J6, and J7

	Area			
	J4	J5	J6	J7
Mulefat Scrub Mixed Willow	1.05	.82	.62	.05
Mixed Willow California Sycamore Riparian	4.80	1.62	2.16	1.54
Sycamore Savanna	-	-	-	-
Coast Live Oak Riparian	1.73	.48	-	-
Freshwater Emergent Marsh	.21	.15	-	-

 Property Boundary
 Reach Boundary

