F1-315

EXECUTIVE SUMMARY

Cache Slough Shaded Riverine Aquatic
Habitat Enhancement Project

JUL 28 1997

Applicant
Reclamation District No. 2060

Project Description & Primary Biological/Ecological Objectives:

Reclamation District No. 2060 (District) proposes to restore its levee bank where erosion has removed shaded riverine aquatic (SRA) habitat and left a bankline void of vegetation and containing erosion pockets creating scallops in the existing bankline. Instead of utilizing traditional erosion repair of fill and riprap, the District plans to stabilize the bank and encourage revegetation. It is planned to place fill to restore the bankline to its pre-erosion condition, stabilize the fill with rock riprap, fill the riprap voids with soil material, cover the bank with coconut fiber mats, and plant grasses and sedges to revegetate the bankline and re-create lost, valuable SRA habitat.

The project consists of a series of sites located on the Reclamation District No. 2060 levee along the right bank of Cache Slough in Solano County (Fig. 1). The sites begin approximately 1 mile downstream of the Ulatis Creek confluence and are spaced sporadically along the right bank of Cache Slough to its confluence with Wright Cut (Fig. 2). Total bankline to be restored is estimated at 2,000 lineal feet.

The proposed project will address two of the major ecosystem stressor categories: 1) flood plain and marsh plain changes, and 2) channel form changes.

This project will benefit priority habitats — shaded riverine aquatic, instream cover, and tidal perennial aquatic habitats — thus benefiting target priority species including Delta smelt and anadromous fishes that use this area for habitat and migratory corridors. Cache Slough has been designated by the U. S. Fish and Wildlife Service as "critical habitat area" for the Delta smelt.

Approach/Tasks/Schedule:

The project can be completed extremely quickly as soon as funds are available. The only holdup will be the flood season and suggested construction window for in-water work. With the projected timing of the Category III funding, the tasks and schedule are presented, below:

1.	Engineering, surveys and mapping	-	Nov. 1997 through Feb. 1998
2.	Biological surveys of pre-project conditions	-	Jan. 1998 through May 1998
3.	Engineering and biological design	-	Jan. 1998 through Feb. 1998
4.	Regulatory permitting and CEQA/NEPA documentation	-	Feb. 1998 through June 1998
5.	Final engineering design and compilation of contract plans and specifications	-	April 1988 through May 1998
6.	Construction	-	July 1998 through Aug. 1998
7.	Vegetation planting	-	October 1998
8.	Post-project biological monitoring	-	Sept. 1998 through Sept. 2001

Justification:

Shaded riverine aquatic (SRA) habitat provides important benefits to fish and wildlife species in the Delta, including the priority species cited previously. Fish species utilize the cover, shade, and food production attributes of SRA as important habitat components. SRA habitat typically provides submerged tree roots, woody debris, and low-velocity areas near the shoreline that can be used for escape cover, spawning, and rearing of many native Delta fishes. SRA also provides benefits for reptiles, amphibians, mammals, and birds, including the migratory bird species cited as a priority under the RFP. Bird species use SRA habitat for nesting, feeding and cover. The proposed project meets an important need for re-creation of SRA habitat within the Delta is an economic alternative to traditional riprap.

Budget Costs:

The estimated budget costs for each phase are as follows:

Phase I	(planning and design)	—	$ 85,000
Phase III	(construction)	—	$ 302,000
	TOTAL PROJECT COST	—	$ 387,000

Third Party Impacts:

There are no anticipated third party impacts. The project involves only restoring that which was lost over the last flood seasons.

Applicant Qualifications:

Reclamation District No. 2060 (District) is the public agency responsible for maintenance and rehabilitation of the levees within its jurisdiction. The District is well acquainted with the CEQA processes, bidding laws, contracting for levee work, and in general flooding issues in the North Delta. Murray, Burns and Kienlen (MBK) has consulted to the District and landowner for over twenty years and has guided the District's Board of Trustees in the above activities.

Monitoring & Data Evaluation:

The project will be monitored for success of both bankline and biological improvements to the system. Bankline changes will be documented by completing an as-built survey of the site, and evaluating how well the design acts as bank protection. Biological monitoring will include documentation of botanical, wildlife, and fisheries resources before and after project construction.

Local Support/Coordination With Other Programs/Compatibility with CALFED

The design of the projects will incorporate advice from key State and federal resource management agencies. The project design will minimize adverse impacts to the land and water habitats, and respect key habitats of rare and endangered species in the Delta area. In addition, the project will need permits or approvals from the Corps of Engineers, the Department of Fish and Game, and the Central Valley Regional Water Quality Control Board. It is anticipated that funding will also be available from the Department of Water Resources Delta Levee Subventions Program and the Delta Levee Special Projects Program.

Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project

Applicant

Reclamation District No. 2060
Hastings Tract
% Henry N. Kuechler, III
1143 Crane Street, Suite 200
Menlo Park, California 94025
Phone: (415) 328-0820 • FAX: (415) 323-5389

Applicant Type: Public Agency
ID #94-3097889

Technical and Financial Contact

Gilbert Cosio, Jr.
Murray, Burns and Kienlen
1616 - 29th Street, Suite 300
Sacramento, California 95816
Phone: (916) 456-4400 • FAX: (916) 456-0253

Participants/Collaborators in implementation

California Department of Water Resources
Reclamation District No. 2060

RFP Project Group Types

Construction Project

I. PROJECT DESCRIPTION

Reclamation District No. 2060 proposes to restore its levee bank where erosion has removed shaded riverine aquatic (SRA) habitat and left a bankline void of vegetation and containing erosion pockets creating scallops in the existing bankline. Instead of utilizing traditional erosion repair of fill and riprap, the District plans to stabilize the bank and encourage revegetation. It is planned to place fill to restore the bankline to its pre-erosion condition, stabilize the fill with rock riprap, fill the riprap voids with soil material, cover the bank with coconut fiber mats, and plant grasses and sedges to revegetate the bankline and re-create lost, valuable SRA habitat.

The project consists of a series of sites located on the Reclamation District No. 2060 levee along the right bank of Cache Slough in Solano County (Plate 1). The sites begin approximately 1 mile downstream of the Ulatis Creek confluence and are spaced sporadically along the right bank of Cache Slough to its confluence with Wright Cut (Plate 2).

The levee in this channel has historically been oversized with a flat waterside slope. The waterside edge of this slope is naturally vegetated with willows and other scrub shrub habitat growing from the slope face and overhanging the water. Recent years floods have created numerous large scarps which continue to erode. These scarps give the once smooth bankline a scalloping effect (Plate 3). This effect causes additional forces on the outer edges of the erosion sites, thus threatening the remainder of the SRA habitat along the levee face.

Comparison of 1996 and 1997 conditions show how quickly this erosion, and lost SRA, expands. In 1996 the District located 13 erosion sites totaling 625 lineal feet. Following the January 1997 floods, 3,170 lineal feet of erosion was found at 31 sites.

It is planned to restore approximately 2,000 lineal feet of bank back to a smooth bankline, stabilize the fill material with stone, fill the voids within the stone with soil, cover it with coconut fiber matting, and revegetate the bank to re-create the lost SRA habitat (Plate 4).

Bank restoration methodology consists of filling and compacting scour pockets with clean fill to match the existing vegetated banks. Quarry stone will be placed on the repaired bank slope to protect the soils from tidal and boat wake erosion. Vegetation restoration will consist of placing fill material over the quarry stone to form a smooth bed slope, and covering with a coconut fiber mat.

It is proposed that the sites on Cache Slough be repaired using the method described above. In some cases, where appropriate, this method would also be used on Lindsey

Slough. The Corps of Engineers is considering repair of some of the erosion sites on the District's levee as part of its PL-84-99 program. The District's project would consist of sites not repaired by the Corps of Engineers, or augmenting the work performed by the Corps.

EXPECTED BENEFITS

The proposed project will address two of the major ecosystem stressor categories: 1) flood plain and marsh plain changes, and 2) channel form changes.

This project will benefit priority habitats -- shaded riverine aquatic, instream cover, and tidal perennial aquatic habitats — thus benefiting target priority species including Delta smelt, and anadromous fishes that use this area for habitat and migratory corridors.

BACKGROUND AND TECHNICAL/BIOLOGICAL JUSTIFICATION

The levees along Hastings Tract create a unique situation in the Delta. Historic dredging has left a waterside slope flat enough to consider the levee oversized in some areas. This oversized levee allows the District to permit vegetation growth on the levee while maintaining the upper slope in low lying grasses to adequately inspect the levee during high water. The alternative to the method described above would be to use traditional riprap repair and let the sites revegetate naturally. The amount of vegetation that would reestablish itself is unpredictable using traditional methods. In addition, the transition between clean riprap and vegetation at the ends of each site causes hydraulic forces which tend to scour, thus increasing the need for more riprap. Studies conducted along the American River have shown that when properly designed, the proposed project design not only successfully produces viable habitat, it also may cause silt accumulation along the banks, thus further stabilizing the bankline.

Shaded riverine aquatic (SRA) habitat provides important benefits to fish and wildlife species in the Delta, including the priority species cited previously. Fish species utilize the cover, shade, and food production attributes of SRA as important habitat components. SRA habitat typically provides submerged tree roots, woody debris, and low-velocity areas near the shoreline that can be used for escape cover, spawning, and rearing of many native Delta fishes. SRA also provides benefits for reptiles, amphibians, mammals, and birds, including the migratory bird species cited as a priority under the RFP. Bird species use SRA habitat for nesting, feeding and cover. The proposed project meets an important need for re-creation of SRA habitat within the Delta. In addition, the U. S. Fish and Wildlife Service has designated Cache Slough as "critical habitat area" for the Delta smelt.

The method of SRA creation for this project has been tested on the American River, but not in the Delta. Attached is a visual procedure that was used on the American River with excellent results. The project will provide CALFED with valuable data for alternative bank protection methods.

SCOPE OF WORK

To complete this project, the following tasks have been identified.

1. Engineering, surveys and mapping.
2. Biological surveys of pre-project conditions.
3. Engineering and biological design.
4. Regulatory permitting and CEQA/NEPA documentation.
5. Final engineering design and compilation of contract plans and specifications.
6. Construction.
7. Vegetation planting.
8. Post-project biological monitoring

MONITORING AND DATA EVALUATION

Monitoring will include the following parameters: percent survival (mortality) of plants per species for each year; measurements of cover (percent) of the restored areas at various increments in time (first, second and third year); measurements of growth rates per species; and sediment retention, loss or gains, compared to initial conditions. These stations will be surveyed for species composition and relative abundance in the spring and summer prior to construction. Following construction, these same stations will be monitored during the spring and summer for three years.

IMPLEMENTABILITY

The project simply adds an environmental enhancement component to traditional levee maintenance. Therefore, there should not be any concerns that will affect implementability of the project. Due to the timing of Category III funding, construction will have to be delayed until July 1, 1998 due to limitations on working during the flood season and suggested Delta smelt in water construction work windows.

Approval for the project will be required from the U. S. Army Corps of Engineers through its Nationwide Permit program. The California Department of Fish & Game will require a streambed alteration agreement. Seven of the existing sites on Cache Slough have already received a streambed alteration agreement (Notification No. II-616-96). As part of the Corps of Engineers Nationwide Permit, a waiver of certification will be required from the Regional Water Quality Control Board. Notice and approval of levee maintenance is required by the State Reclamation Board.

II. *COST AND SCHEDULE*

Table 1 shows the estimated costs of the tasks described in the Scope of Work section. Funding for this project and subsequent monitoring are requested from CALFED Category III for 100 percent of the total cost. However, it is anticipated that funding will also be available from the Department of Water Resources Delta Levee Subventions Program and the Delta Levee Special Projects Program, which would reduce the amount requested from CALFED.

Table 1
Cost Estimate

			Service Contract Cost Estimate
Phase I	1)	Engineering, surveys and mapping	$15,000
	2)	Biological surveys of pre-project conditions	$25,000
	3)	Engineer and biological design	$20,000
	4)	Regulatory permitting & CEQA/NEPA documentation	$25,000
Phase II	1)	Final engineering design and contract plan specifications	$12,000
	2)	Construction	$155,000
	3)	Vegetation planting	$80,000
	4)	Post-project biological monitoring	$55,000

The District hopes to begin construction in July 1998 by adopting the following schedule.

1) Engineering and preliminary design — Nov. 1997 through Feb. 1998
2) Biological evaluation and environmental documentation — Jan. 1998 through May 1998
3) Engineering and biological design — Jan. 1998 through Feb. 1998
4) Regulatory permits and consultation — Feb. 1998 through June 1998
5) Development of contract plans and specifications — Apr. 1998 through May 1998
6) Construction — July 1998 through Aug. 1998
7) Vegetation planting — Oct. 1998
8) Post-project biological evaluation — Sept. 1998 through Sept. 2001

THIRD PARTY IMPACTS

There are no anticipated third party impacts. The project involves only restoring that which was lost over the last flood seasons.

III. *APPLICANT QUALIFICATIONS*

Reclamation District No. 2060 has maintained the levee exceptionally well since its reconstruction by the Corps of Engineers in the 1950's. Levee inspections by the State consistently rate the levee's maintenance as "outstanding".

Murray, Burns and Kienlen (MBK) has been the Reclamation District No. 2060 and landowner engineering consultant for over twenty (20) years. MBK is a consulting civil engineering firm providing services in the general areas of flood control, water supply planning and water rights. As a subset of their flood control clientele, MBK provides engineering services to Delta reclamation districts. MBK personnel involved with Delta reclamation district engineering have extensive experience in water resources engineering and planning. MBK personnel have been, and continue to be, extremely involved in shaping the future of the Delta by sitting on numerous boards and advisory committees regarding such areas as environmental and regulatory issues, funding, engineering and land use.

Consistent with Government Code §4525, Murray, Burns and Kienlen was selected by RD 2060 to provide planning, permitting and engineering services in connection with project planning and construction. The selection was made on the basis of qualifications and demonstrated competence for the requested services, including documentation of fair and reasonable prices.

MBK acts as a consultant for twenty (20) other reclamation districts in the Sacramento-San Joaquin Delta. MBK is also a prime engineering consultant to the Sacramento Area Flood Control Agency (SAFCA) and has been involved as a consultant for many organizations concerned with water conveyance and flood control in the Central Valley.

Mr. Gilbert Cosio, principal of Murray, Burns and Kienlen, will be responsible for engineering and management of the project. Mr. Cosio would be responsible to coordinate all activities in regard to engineering and environmental services performed for Reclamation District No. 2060. Mr. Cosio has 17 years of experience in flood control, hydrology, hydraulics, water resource planning, drainage water supply, surveying and levee maintenance. Mr. Cosio is currently Principal in charge of all Delta levee reclamation district work for MBK. Mr. Cosio coordinates levee inspections, levee maintenance and rehabilitation projects, competitive bid plans and specification preparation and contract administration for Delta reclamation districts. He also oversees maintenance planning, funding application and claims, regulatory coordination, environmental assessments, CEQA documentation and reports and presentations to respective reclamation district boards of trustees. Mr. Cosio's Delta work has also led to testimony at public hearings, Reclamation Board hearings and workshops, and State Water Resources Control Board hearings.

Mr. Cosio has coordinated levee work and claims with County, State and Federal agencies in charge of disaster assistance. Mr. Cosio was a member of the Delta Coalition, which was a committee involved with developing levee maintenance legislation in 1988. Mr. Cosio is also a member of the Habitat Advisory Committee set up to administer the mitigation element of the Delta Levee Subventions Program and a member of the Habitat Advisory Committee subcommittee regarding regulatory permit streamlining for levee maintenance projects.

Consistent with Government Code §4525, EA Engineering, Science, and Technology, Inc., and H.A.R.T., Inc., were selected by Murray, Burns and Kienlen to provide environmental services in connection with project development and permit processing. The selection was made on the basis of qualifications and demonstrated competence for the requested services, including documentation of fair and reasonable prices.

EA Engineering, Science, and Technology, Inc., is a multidisciplinary environmental consulting firm with a staff of Northern California scientists who specialize in environmental analyses related to water resources. EA's staff have been conducting aquatic studies in the Delta and its tributary watersheds for over 20 years, and have conducted feasibility studies and assessments of many habitat restoration projects.

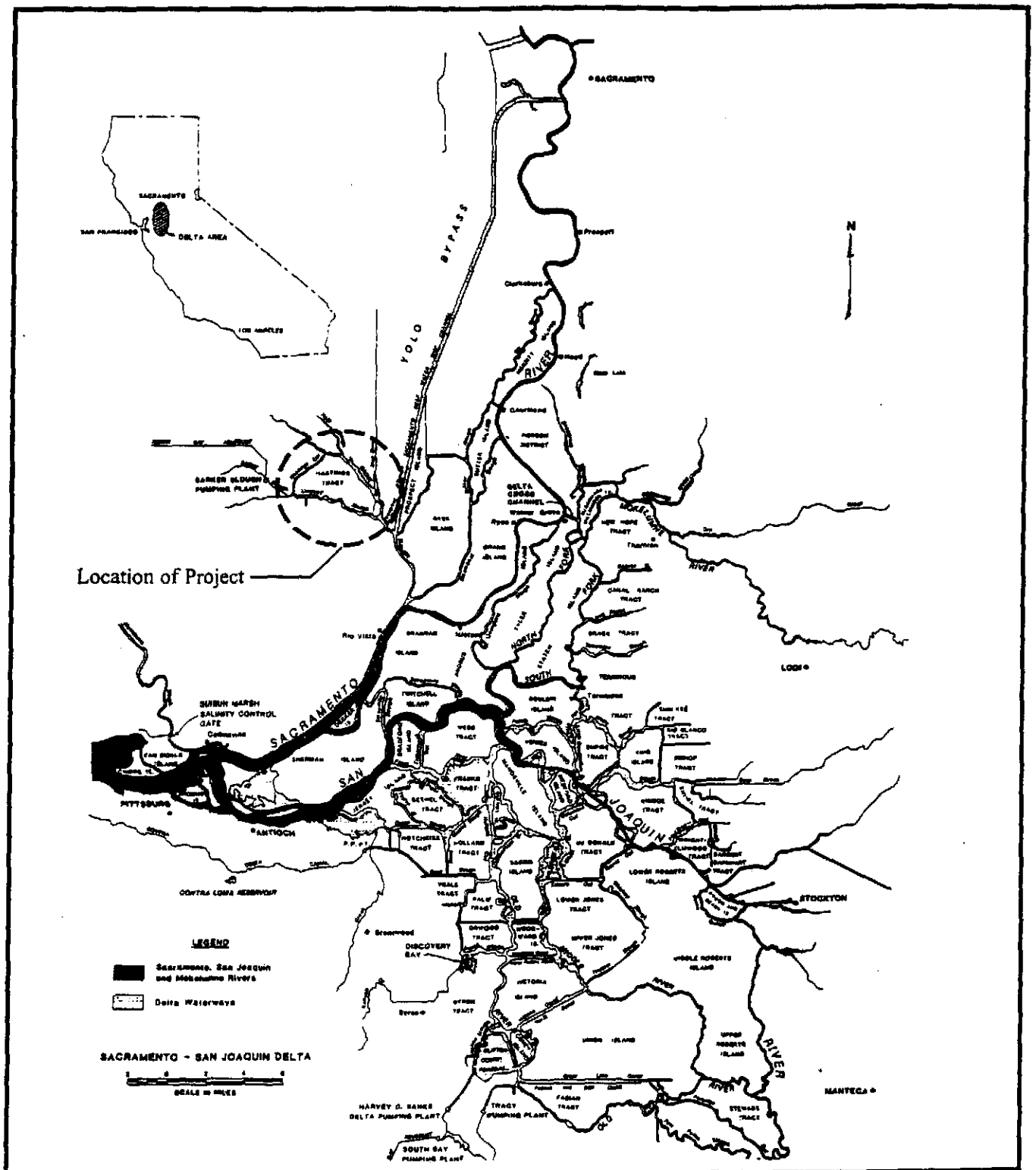
EA Engineering, Science, and Technology has consulted with MBK on Delta projects since 1993. In that capacity, they have provided biological design, monitoring, and survey services to MBK for Delta projects, and completed CEQA compliance documents associated with various habitat improvement projects.

Pursuant to California Government Code §1090, EA Engineering, Science, and Technology, Inc., is disclosing a remote interest in proposals submitted for funding under CALFED's 1997 Category III program. EA staff, as third tier subcontractors to the Bureau of Reclamation, have provided technical and administrative support to CALFED agency staff in the Restoration Coordination Program. In this capacity, EA staff have assisted with documentation of public meetings of the Ecosystem Roundtable, and compiled technical team meeting information for distribution to Roundtable members and the public. EA's legal counsel has determined that EA's participation as a subconsultant in contracts that may be awarded under the Category III program does not constitute a violation of California Government Code §1090.

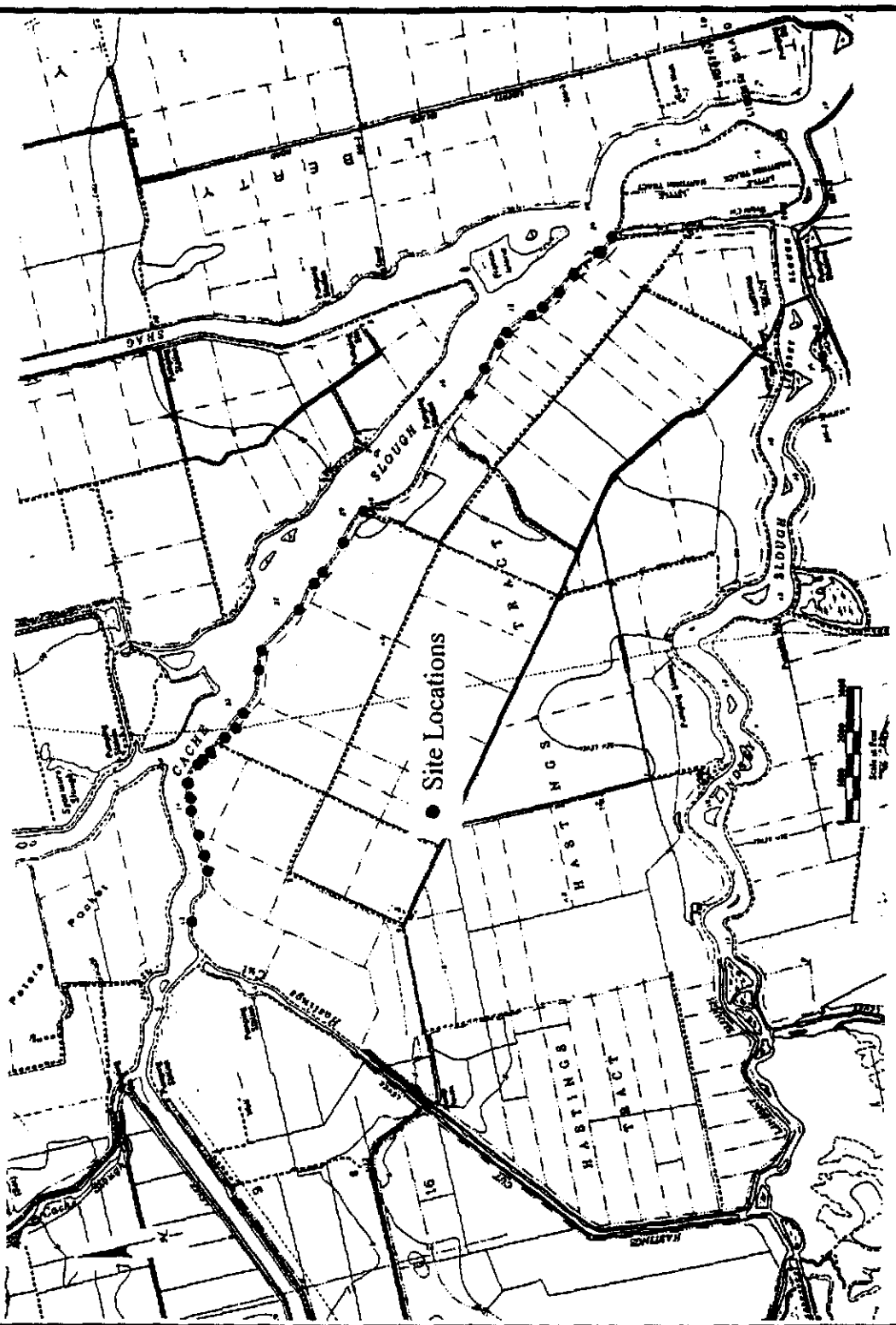
Mr. Scott Wilcox of EA Engineering, Science, and Technology is a senior fisheries biologist whose role will involve technical oversight and management of tasks related to biological monitoring and environmental compliance. His areas of technical expertise include

aquatic and terrestrial resource impact assessment, habitat quantification and evaluation, and fisheries analyses in riverine and estuarine systems. His 17 years of experience includes biological investigations for approximately 30 projects within or tributary to the Central Valley and the Delta. Many of these projects involved planning of aquatic habitat restoration actions and characterization of habitat conditions. Relevant project experience includes design, monitoring, and CEQA compliance for levee habitat improvement projects; TES species surveys and Section 7 consultation for Delta smelt; and evaluation of potential construction project impacts on Sacramento splittail. Professional references for similar projects include Frank Wernette (209-948-7800) and Peter Perrine (916-358-2926) of the Department of Fish and Game.

Jeffrey A. Hart, Ph.D., of H.A.R.T., Inc., is a plant ecologist who will assist in the design of the restoration component of this project, including pre-project baseline surveys, species selection, and erosion control techniques. Dr. Hart has had considerable success in designing and implementing restoration projects (e.g., Stone Lakes National Wildlife Refuge), biotechnical projects (e.g., Dry Creek, Lower American River), and resource studies (e.g., Cosumnes River, Lower American River). His clients include mostly government agencies and non-profit organizations such as the Sacramento Area Flood Control Agency, Sacramento County Water Resources Division, Ducks Unlimited, and The Nature Conservancy. Hart has successfully completed restoration contracts with Ducks Unlimited (contact Jim Well, phone 852-2000), and has made considerable progress with the CalTrans Beach Lake Mitigation site (call Dave Wyatt at 324-6634).



Location Map **Hastings Tract** Cache Slough	APPLICANT: **Reclamation District No. 2060** **Hastings Tract** **c/o Henry N. Kuechler, III** **1143 Crane Street, Suite 200** **Menlo Park, California 94025**	**Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project** DATUM: NGVD COUNTY: Solano
MURRAY BURNS AND KIENLEN - Consulting Civil Engineers 1616 29th Street Ste 300, Sacramento CA 95816 - (916) 456-4400	Date: July 1997	Figure 1



Erosion Site Map

Hastings Tract

Cache Slough

MURRAY BURNS AND KIENLEN - Consulting Civil Engineers
1616 29th Street Ste 300, Sacramento CA 95816 - (916) 456-4400

APPLICANT:

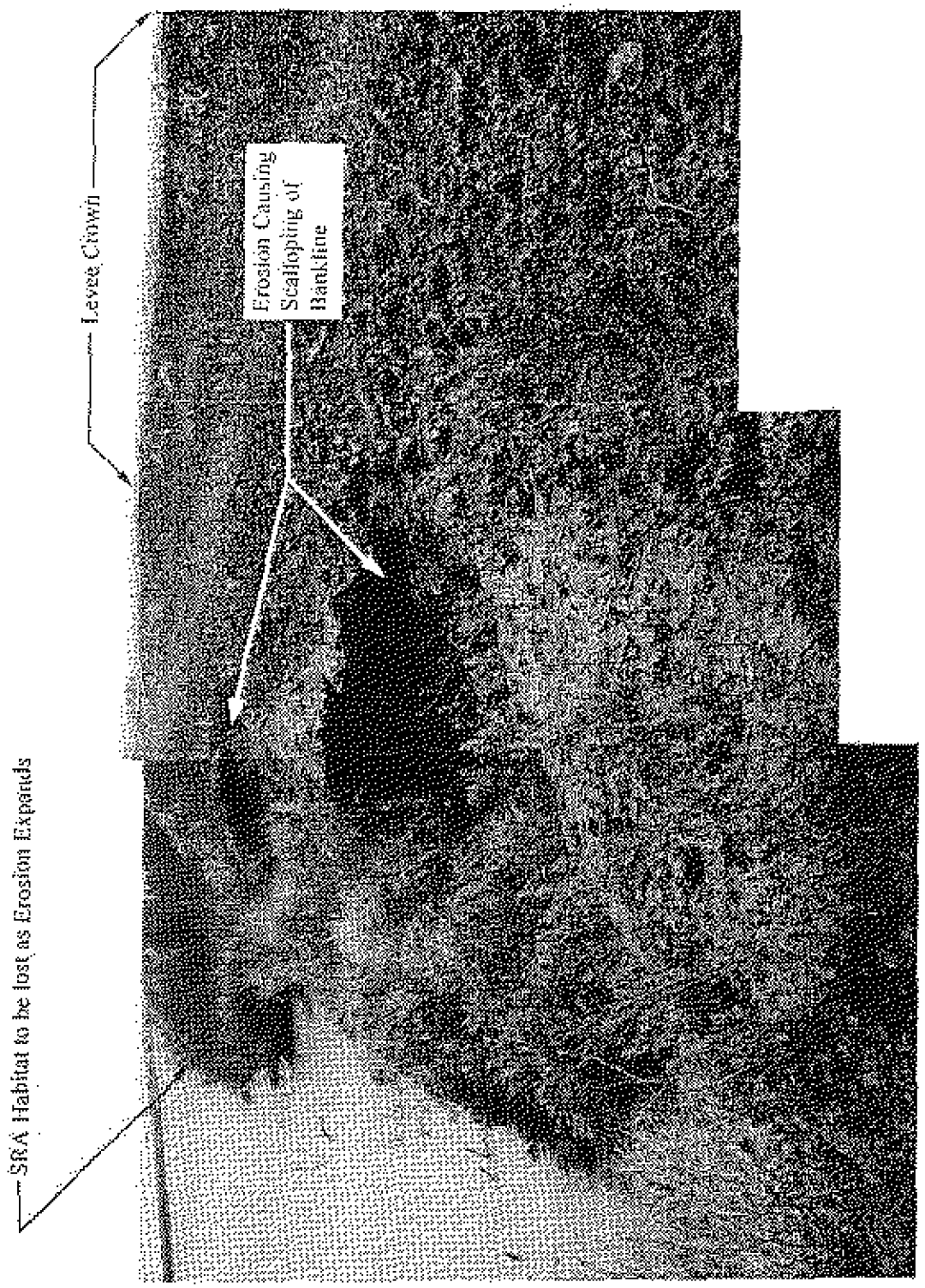
Reclamation District No. 2060
Hastings Tract
c/o Henry N. Kuechler, III
1143 Crane Street, Suite 200
Menlo Park, California 94025

Date: July 1997

Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project

DATUM: NGVD
COUNTY: Solano

Figure 2



Typical Erosion Site Photo

Hastings Tract

Cache Slough

MURRAY BURNS AND KIENLEN - Consulting Civil Engineers
1816 29th Street Ste 300, Sacramento CA 95816 - (916) 456-4100

APPLICANT

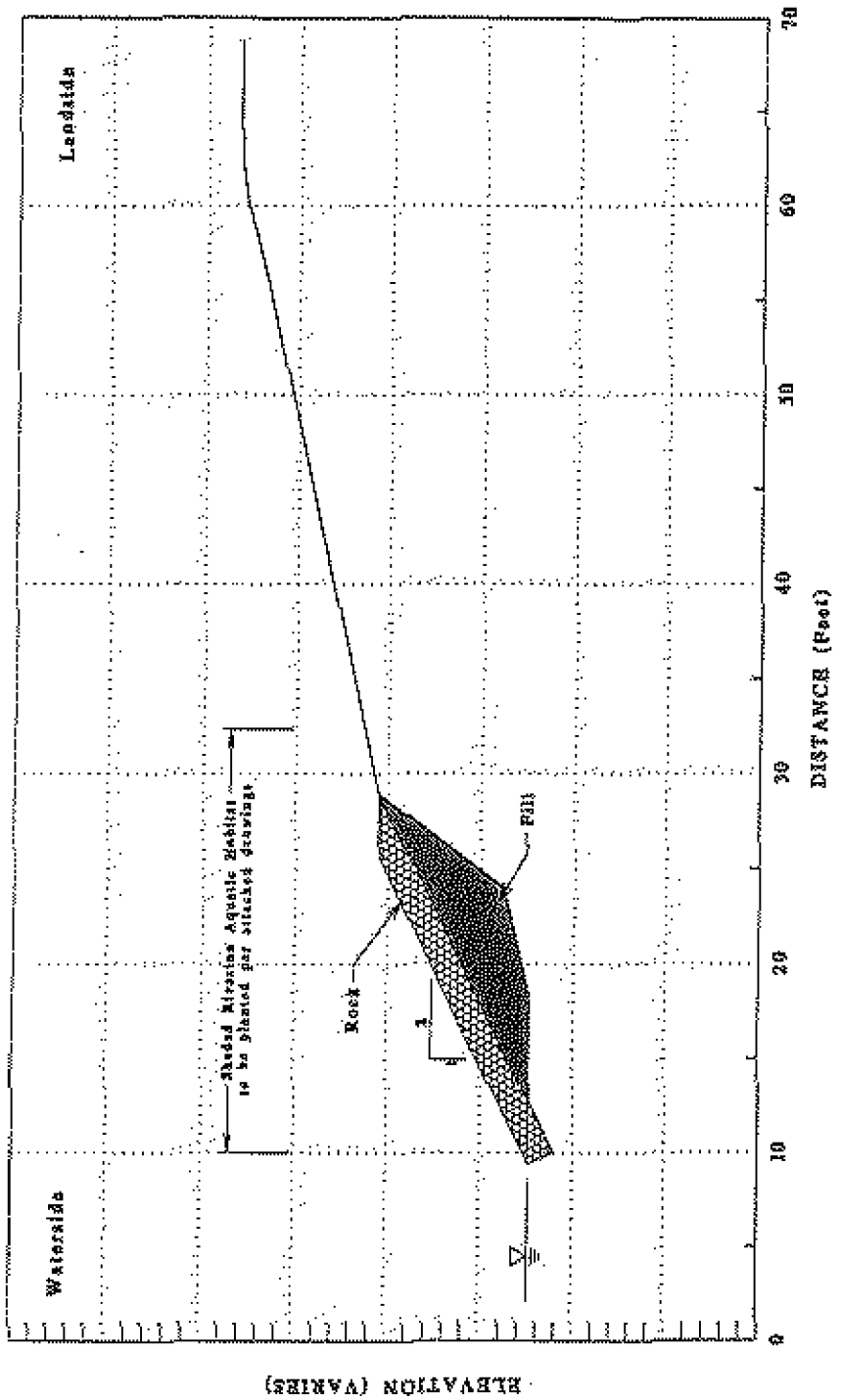
Reclamation District No. 2060
Hastings Tract
c/o Henry N. Kuechler, III
1143 Crane Street, Suite 200
Menlo Park, California 94025

Date: July 1997.

Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project

DATUM: NGVD
COUNTY: Solano

Figure 3

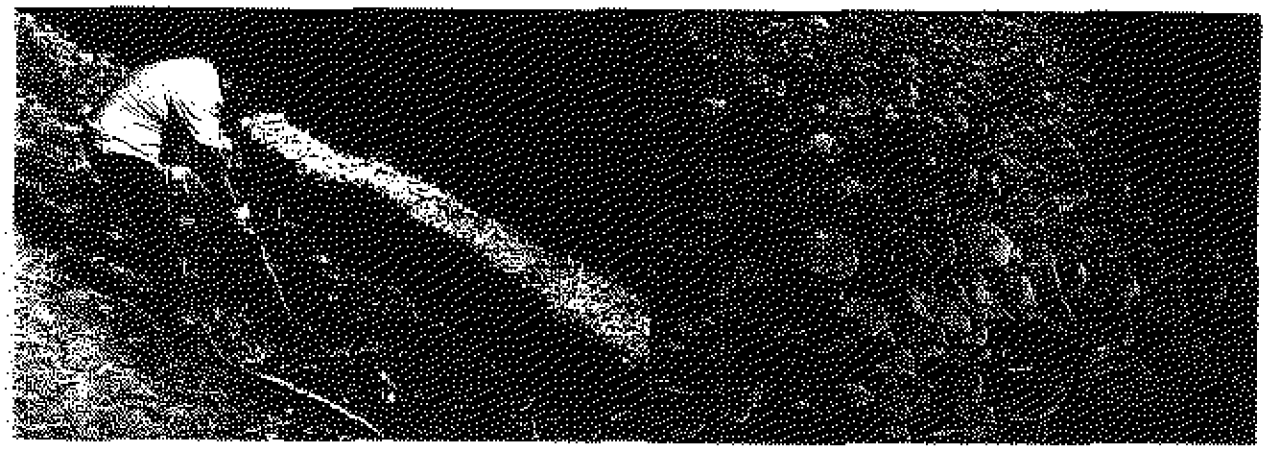


Scale: 1" = 20'

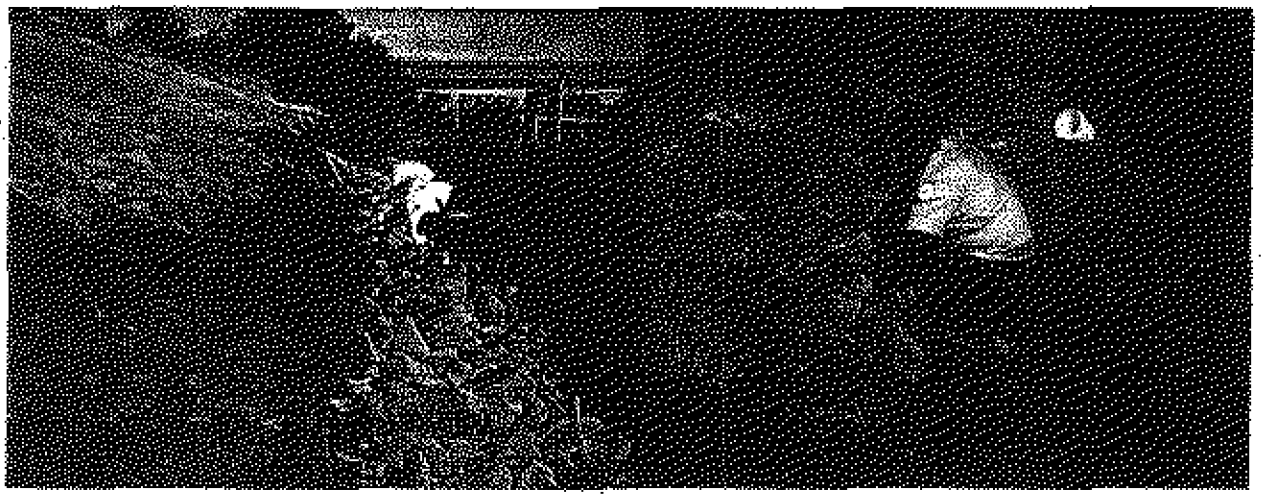
Typical Levee Cross Section **Hastings Tract** Cache Slough	APPLICANT: **Reclamation District No. 2060** **Hastings Tract** **c/o Henry N. Kuechler, III** **1143 Crane Street, Suite 200** **Menlo Park, California 94025** Date: July 1997	**Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project** DATUM: NGVD COUNTY: Solano Figure 4

MURRAY BURNS AND KIENLEN - Consulting Civil Engineers
1616 19th Street Ste 300, Sacramento CA 95816 - (916) 456-6400

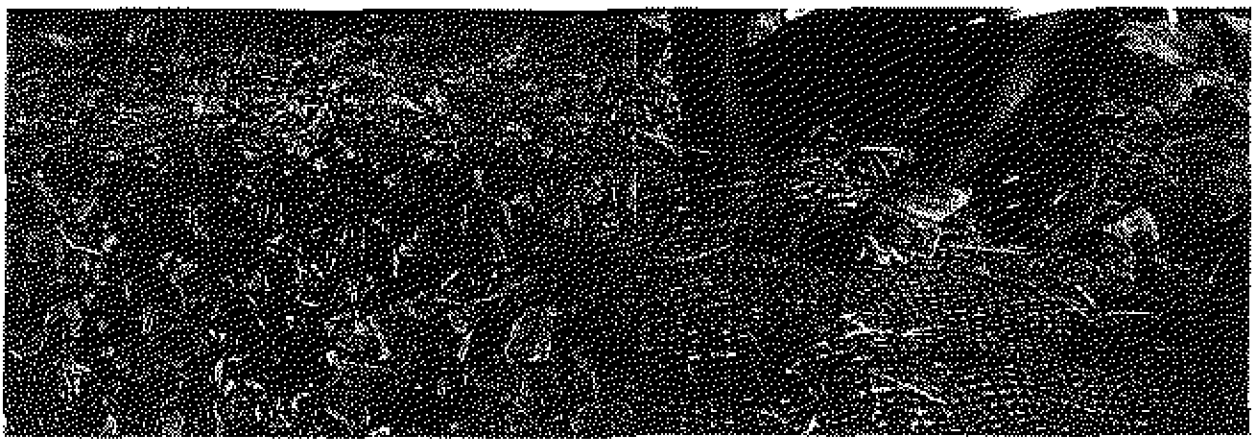
Figure 1. Establishing Plants On Revetment: An experiment on the Lower American River. Different combinations of fabric and plants were used to test the effectiveness of holding and attracting soil on riprap.



Above: The first step was to place soil, using a pressurized water hose, into the riprap.



Some of the test sites were covered with coir (coconut) fabric, placed in shallow trenches, and rock used for anchoring.

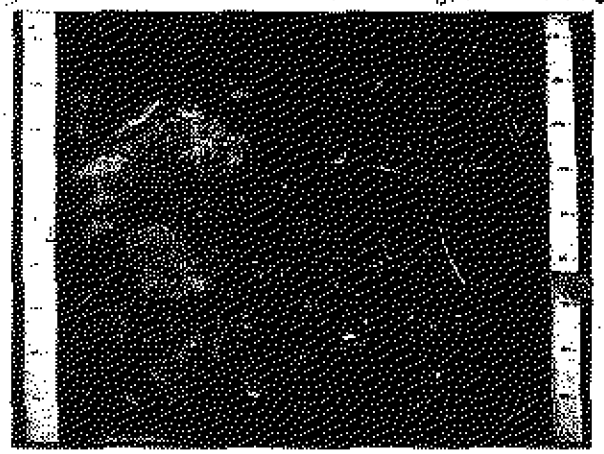


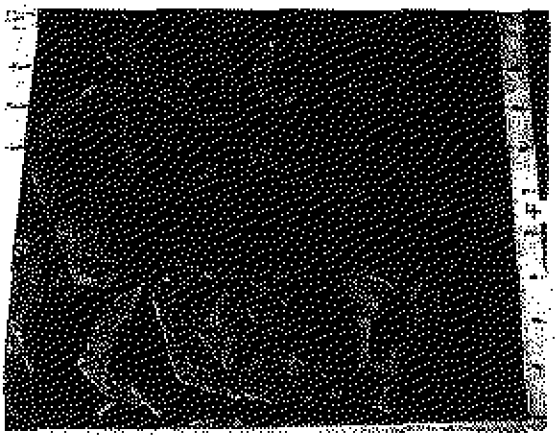
In the plots lacking coir, plants were installed directly into the soil between the rock.

In plots having coir, the plants were installed through the fabric.

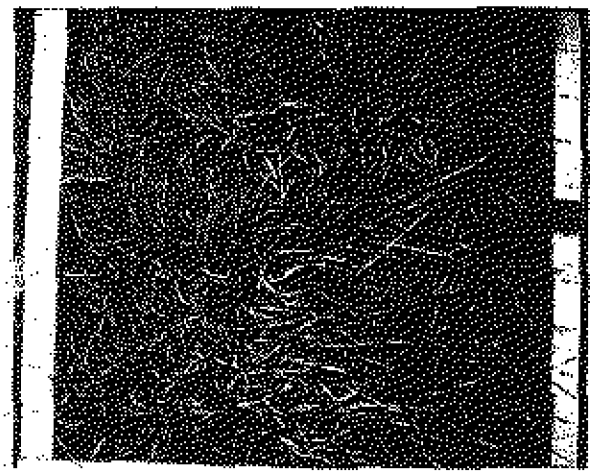
Habitat Assessment & Restoration Team, Inc. (H.A.R.T)

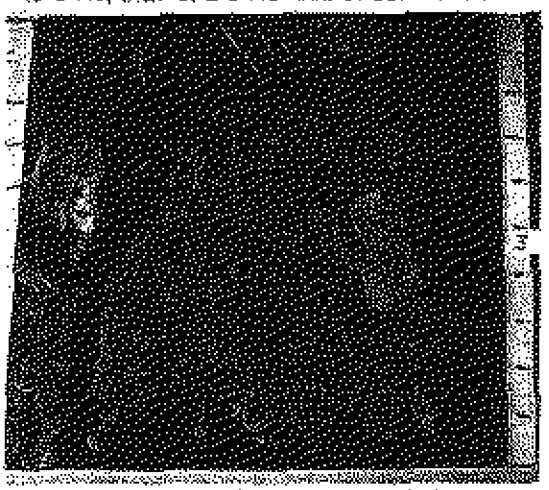
Figure 2. Experimental Procedure: Different combinations of sedge, annual grasses, coir fabric, and an inner blanket were employed to test the relative effectiveness of the different treatments. After more than 3 months of flooding, the following results were observed:



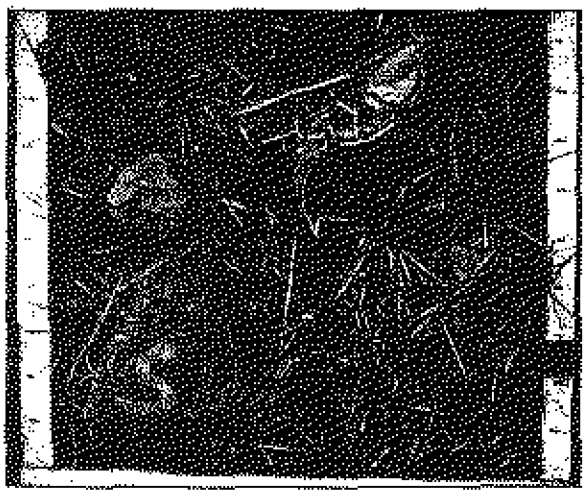


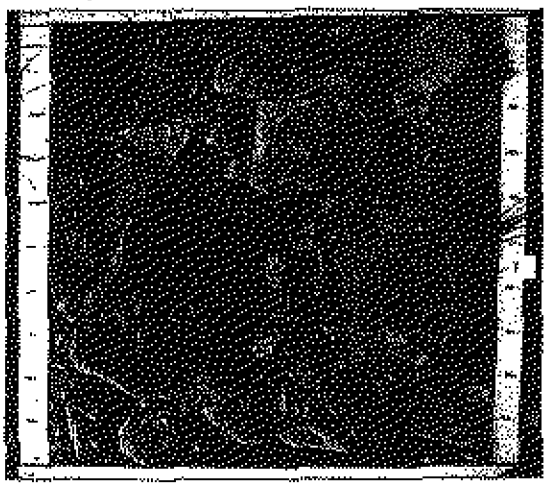
The control plots, using soil alone: 3 months after flooding → Average percent rock cover went from 20% to 84%; that is, a 64% loss of soil cover.





In plots with annual grasses → 3 months after flooding → Average percent rock cover stayed about the same, approximaely 20%; thus neither erosion nor deposition occured.

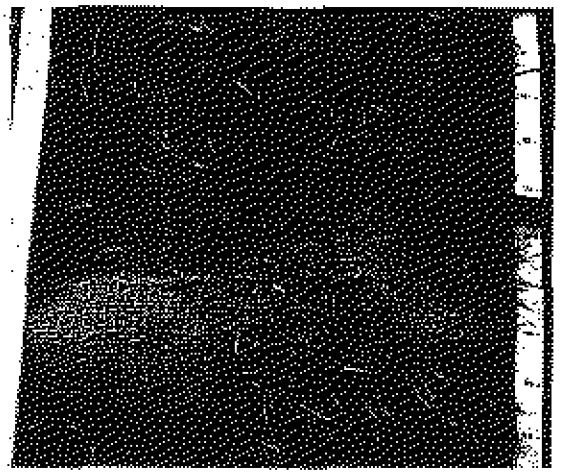


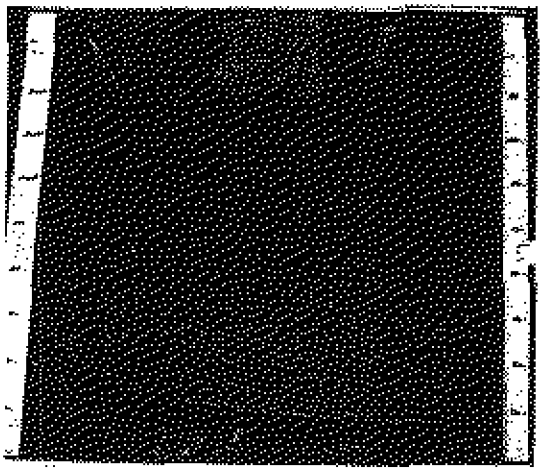


In plots in which only sedge was planted: 3 months after flooding → Average percent rock cover was 55%, a loss of about 25% soil cover.

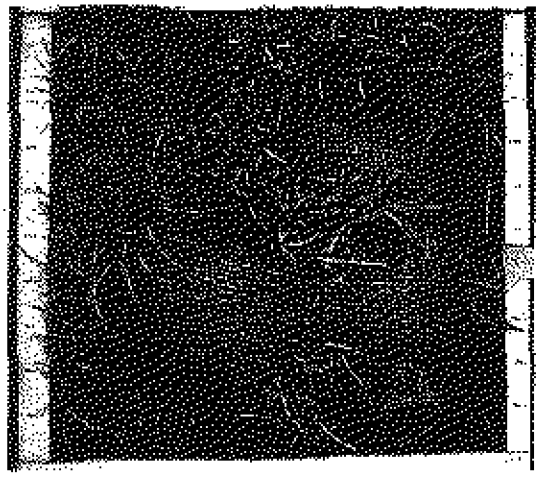
Habitat Assessment & Restoration Team, Inc. (H.A.R.T)

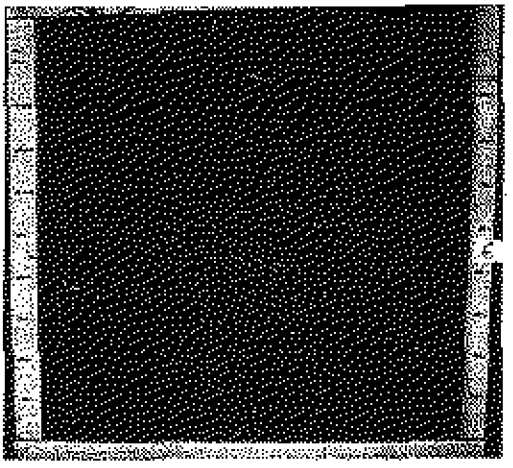
Figure 3. The addition of coir fabric to the experimental design resulted in significant gains in deposition





The application of coir + annual grasses → 3 months after flooding → Resulted in considerable deposition, with percent rock exposed after flooding averaging 9%., an 11% decrease of rock exposed.

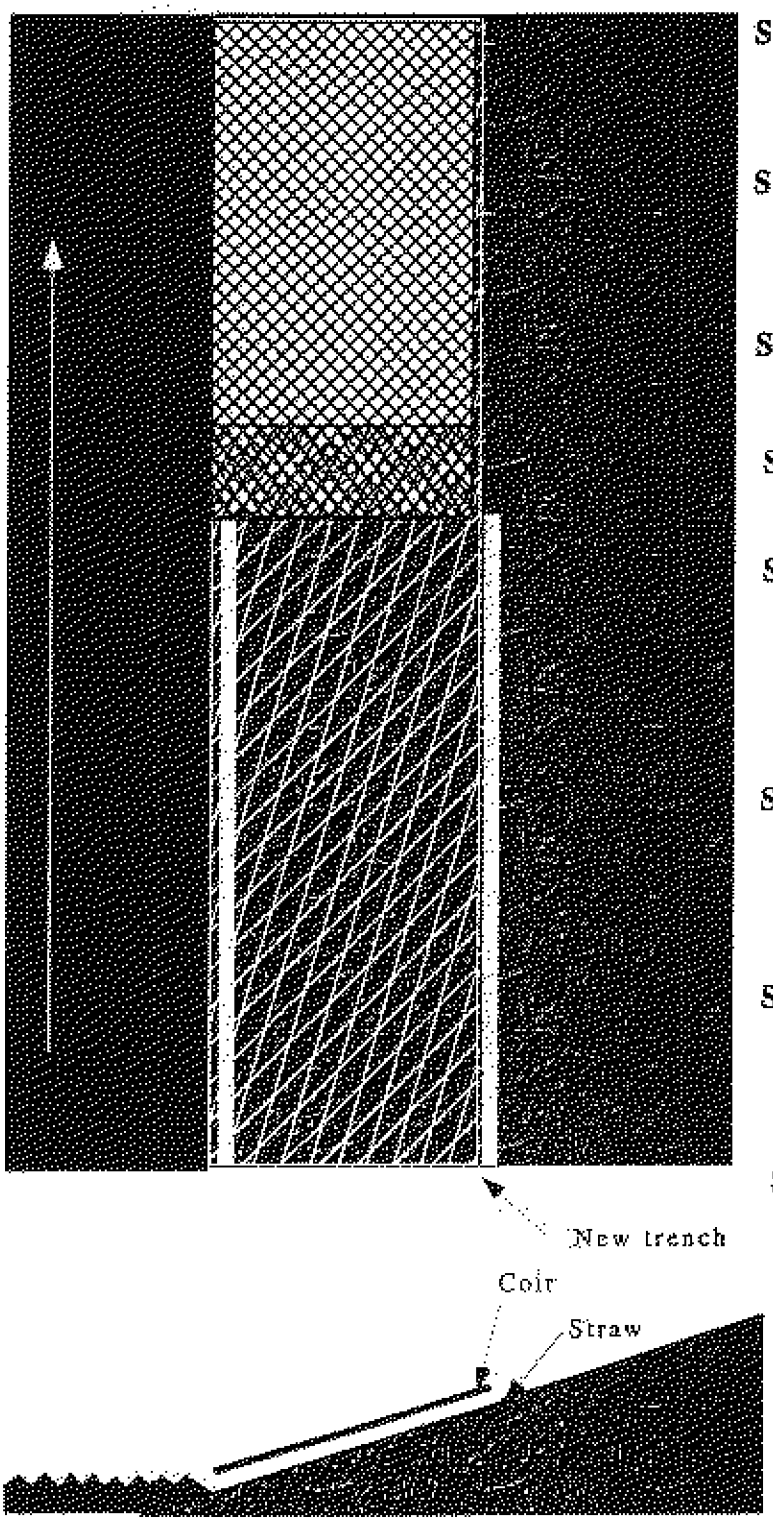




The application of coir + an inner blanket + annual Grasses + sedge → 3 months after flooding → Resulted in increased deposition, with percent rock exposed after flooding being only 1%, a 19% decrease of rock exposed.

Conclusion: The greatly diminished habitat values on riprap and similar materials have been of great concern to the environmental community; understandably, successfu methods in vegetating revetment sites would offer considerable opportunity for creating riverine habitat values in the Delta. To date, successful establishment efforts have been marginal. The results of these experiments highlight the importance of herbaceous plants and landscape fabric in providing the amount and quality of roughness necessary to protect revetment sites from scour and to encourage sediment deposition, conditions necessary for successful riverine habitat restoration.

Figure 4. Sequence of Techniques for Revetment Restoration.



Step 1

Add soil to rock interstices, if necessary.

Step 2.

Trench the perimeters for later placement of coir.

Step 3.

Seed with annual grasses

Step 4.

Apply straw mulch.

Step 5.

Place coir into trenches, beginning at downstream end, and roll onto slope to secure onto site.

Step 6.

Place rock / soil matric back onto top of coir material for anchoring

Step 7.

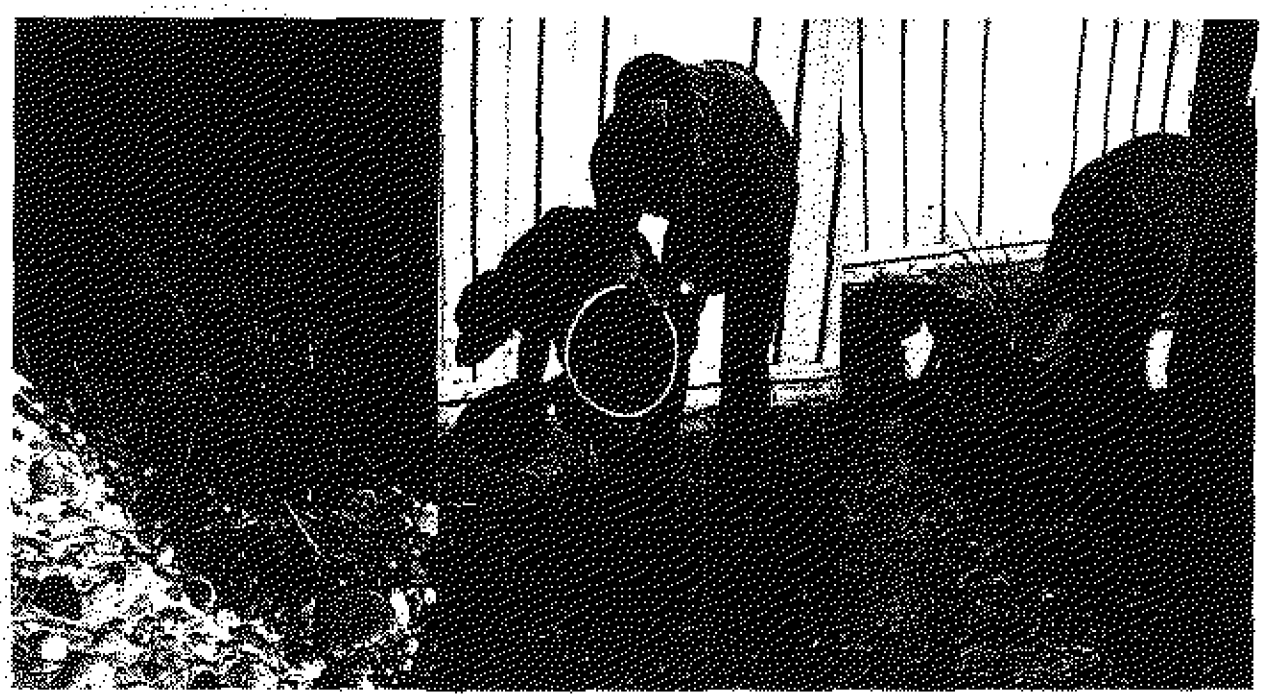
Trench new section on upper slope for securing fabric.

Step 8.

Install the appropriate plant species.

Habitat Assessment & Restoration Team, Inc. (H.A.R.T)

Figure 5. Ballast Buckets: A New Technology For Establishing Plans in RipRap



Above. Some plants above left, having their roots entwining a rock and soil matrix, are able to grow in hydraulically challenging riverine environments. To mimic these successfully established plants, a new technique called "ballast buckets" has been invented. This involves the use of a mixture of scoria lava rock, soil, and plant material in biodegradable, organic buckets.

Above. Ballast buckets can be planted in various mixtures of rock, either in the water or at the water's edge. Their initial weight anchors the plants, thus facilitaing survival under extreme current flow. The roots will gradually grow out from the decaying bucket, thus further anchoring the plant to the substrate.

Habitat Assessment & Restoration Team, Inc. (H.A.R.T)

Item 8

NONDISCRIMINATION COMPLIANCE STATEMENT

COMPANY NAME
RECLAMATION DISTRICT #2060

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME
H. N. Kuechler

DATE EXECUTED
July 22, 1997

EXECUTED IN THE COUNTY OF
San Mateo

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE
President, Board of Trustees

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME
Reclamation District #2060

Item 11

Agreement No. _____

Exhibit _____

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID FOR PUBLIC WORKS

STATE OF CALIFORNIA)
)ss
COUNTY OF San Mateo)

H. N. Kuechler, being first duly sworn, deposes and
(name)

says that he or she is President, Board of Trustees of
(position title)

Reclamation District #2060
(the bidder)

the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

DATED: 7/22/97 By [signature]
(person signing for bidder)

H. KAY HARDTKE
Commission # 1086401
Notary Public — California
San Mateo County
My Comm. Expires Apr 18, 2000

(Notarial Seal)

Subscribed and sworn to before me on
7/22/97
[signature]
(Notary Public)

MURRAY, BURNS & KIENLEN

A Corporation
1616 29th Street, Suite 300
Sacramento, California 95816
Tel. (916) 456-4400
FAX (916) 456-0253

FI-315

TRANSMITTAL MEMORANDUM

July 28, 1997

TO: CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, California 95814

JUL 28 1997

FROM: Gilbert Cosio, Jr.
Murray, Burns and Kienlen

SUBJECT: Transmittal of 1997 Category III Proposal -- Reclamation District No. 2060, Hastings Tract

In accordance with specifications described in the "Request for Proposals, 1997 Category III, Ecosystem Restoration Projects and Programs", transmitted on behalf of Reclamation District No. 2060, Hastings Tract, are the enclosed ten (10) copies of their proposal regarding the "Cache Slough Shaded Riverine Aquatic Habitat Enhancement Project".

If you have any questions, or require additional information, please call me at (916)456-4400.

Sincerely,
MURRAY, BURNS & KIENLEN

BY: _____
Gilbert Cosio, Jr.
Vice President

cc:
Mr. H.N. Kuechler III, President, RD No. 2060
Mr. Scott Wilcox
Dr. Jeff Hart

7/28/97
1:41 PM