DOC # 0731363
10/13/2008 02:28 PM Deputy: SG
OFFICIAL RECORD
Requested By:
DC/COUNTY MANAGER

Douglas County - NV
Karen Ellison - Recorder
Page: 1 Of 120 Fee: 0.00
BK-1008 PG- 1673 RPTT: 0.00

Assessor's Parcel Number: N/A

Date: OCTOBER 10, 2008

Recording Requested By:

Name: LISA GRANAHAN, CO MANAGER'S OFFICE

Address:

City/State/Zip:

Real Property Transfer Tax: $ N/A

GRANT AGREEMENT #2008.216

(Title of Document)

This page added to provide additional information required by NRS 111.312 Sections 1-2. (Additional recording fee applies)

APPROVED JUNE 5, 2008 ITEM #61
BOCC
RESOLUTION 2008R-042

FILED
NO. 2008.216
2008 OCT 10 AM 9:31
TED THRAN
CLERK
DEPUTY

GRANT AGREEMENT

BETWEEN DOUGLAS COUNTY

AND THE NATURE CONSERVANCY

WHEREAS, Douglas County ("County") has previously entered into a Funding Agreement with the Nevada Division of State Lands ("State Lands") concerning the receipt and disbursement of bond monies for conservation and resource protection, including to nonprofit corporations such as The Nature Conservancy ("the Conservancy"), a District of Columbia non profit corporation;

WHEREAS, State Lands as Grantor, the County as Grantee and the Conservancy as Recipient are signatories to that certain Funding Agreement Between the State of Nevada Acting By and Through Its Division of State Lands and the Conservation and Resource Protection Grant Program attached hereto as Exhibit 1 (Funding Agreement and accompanying attachments); and

WHEREAS, the County and the Conservancy desire to enter into this Grant Agreement as authorized by NRS §244.1505 to provide for the disbursement of bond monies to the Conservancy for the River Fork Ranch Wetlands Restoration Project as described in the Funding Agreement (the Project);

NOW, THEREFORE, the parties agree as follows:

1. The Conservancy is responsible for compliance with all grant conditions, including maintenance of the Project for twenty years, and all use of grant funds in accordance with all applicable grant conditions and requirements. The Conservancy agrees it shall be responsible for repayment of grant funds as mandated by the State of Nevada in the event that the Conservancy's use of the grant funds is not in compliance

with applicable grant conditions and requirements. The Conservancy and the County agree that the terms and conditions in the Funding Agreement and its incorporated attachments, see Exhibit 1, are specifically a part of this Grant Agreement.

2. The Conservancy is responsible for the design, construction, and construction administration of the Project, for obtaining all permits and paying all fees, and for maintenance of the improvements (in accordance with any grant requirements).

3. The Conservancy is responsible for timely repayment of all funds expended on work in the event that such work is found to be ineligible for grant funding. All such repayments must be made with non-grant funds.

4. The Conservancy will comply with all applicable federal, state, and local laws, regulations or requirements in all of its activities on the site and will be solely responsible for any non-compliance on the part of the Conservancy with any applicable law, regulation, or requirement.

5. Funds for the Project are itemized in the Funding Agreement, see Exhibit1. Any contribution of matching funds is contingent upon approval being first received from State Lands pursuant to the Funding Agreement.

6. The Conservancy will prepare requests for advances and/or reimbursement for the County to submit to State Lands. The County will, within fifteen working days after receiving the funding from State Lands, disburse the funds to the Conservancy less any administrative costs incurred by the County (pursuant to Paragraph 7 below). The Conservancy agrees to place appropriate provisions in all design, construction, and construction administration contracts for the Project that will allow ample time for payment under this indirect payment system.

7. Pursuant to the Funding Agreement, administrative costs of up to five percent of the grant amount may be recovered by the County. The County agrees that the Conservancy shall be entitled to recover any remaining portion of the five percent not recovered by the County and available to the Conservancy under the terms of the Funding Agreement.

8. This Grant Agreement shall become effective upon approval of the Funding Agreement by the Douglas County Board of County Commissioners, State Land Registrar and the Conservancy.

9. This Grant Agreement is subject to the terms of the Funding Agreement, see Exhibit 1, and any inconsistency between this Grant Agreement and the Funding Agreement shall be governed by the Funding Agreement. This Grant Agreement constitutes the full and final agreement between the County and the Conservancy and shall not be modified except in writing and signed by both parties.

10. This Grant Agreement may not be assigned except by writing signed by both parties and shall be binding upon and inure to the benefit of the parties' respective successors and assigns.

11. The Conservancy agrees to indemnify, hold harmless and defend the County, its officers, employees, and agents from and against all liabilities, claims, actions, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of any alleged negligent or willful acts or omissions of the Conservancy, its officers, employees and agents.

12. The laws of the State of Nevada shall be applied in interpreting and construing this Grant Agreement.

13. The illegality or invalidity of any provision or portion of this Grant Agreement shall not affect the validity of the remainder of the Grant Agreement. The recitals shall be an integral part of this contract.

14. All written notices under this Grant Agreement shall be delivered to the following officials at the addresses stated:

Douglas County Manager
Post Office Box 218
Minden, Nevada 89423

The Nature Conservancy
1 East First Street, Suite 1007
Reno, Nevada 89501

IN WITNESS WHEREOF, the parties have caused this Grant Agreement to be executed this 5th day of June, 2008.

THE NATURE CONSERVANCY,
a District of Columbia non profit corporation

By: Kathleen Landreth
Title: State Director

DOUGLAS COUNTY BOARD
OF COUNTY COMMISSIONERS

By: Kelly D. Kite
Kelly D. Kite
Chairman

ATTEST:

Douglas County Clerk

EXHIBIT 1

DOC # 0727359
07/23/2008 04:06 PM Deputy: DW
OFFICIAL RECORD
Requested By:
DC/COUNTY MANAGER

Douglas County - NV
Werner Christen - Recorder
Page: 1 Of 114 Fee: 0.00
BK-0708 PG- 4972 RPTT: 0.00

Assessor's Parcel Number: N/A

Date: JULY 21, 2008

Recording Requested By:

✓ **Name:** LISA GRANAHAN, CO MANAGERS OFFICE

Address:

City/State/Zip:

Real Property Transfer Tax: $ N/A

CONTRACT #2008.166
(Title of Document)

This page added to provide additional information required by NRS 111.312 Sections 1-2. (Additional recording fee applies)
This cover page must be typed or legibly hand printed.

APPROVED ITEM #20 JULY 17, 2008
BOCC

A Funding Agreement Between the State of Nevada Acting By and Through Its Division of State Lands and the Conservation and Resource Protection Grant Program

(Grantor)

901 S. Stewart St., Suite 5003, Carson City, NV 89701

phone: (775) 684-2720

fax: (775) 684-2721

And

Douglas County

(Grantee)

P.O. Box 218, Minden, NV 89423

phone: (775) 782-6268

fax: (775) 782-6255

And

The Nature Conservancy,
A District of Columbia non profit corporation

(Recipient)

through its Nevada Field Office located at

One East First Street, Suite 1007, Reno, NV 89501

phone: (775) 322-4990

fax: (775) 322-5132

FILED
2008 JUL 21 AM 9:45
BARBARA J. GRIFFIN
CLERK

FOR THE PURPOSES OF restoring the River Fork Ranch wetlands;

WHEREAS, at the general election on November 5, 2002 Nevada's voters approved a conservation initiative generated by Assembly Bill 9, Statutes of Nevada, 17th Special Session of the 2001 Nevada State Legislature, Chapter 104, referred to as Question 1, and authorized the issuance of general obligation bonds in the face amount of $200,000,000 to carry out this program; and

WHEREAS, the Nevada legislature authorized the State Land Registrar to establish a conservation and resource protection grant program and administer the issuance of general obligation bonds in the face amount of $65,500,000; and

WHEREAS, $10,000,000 of the above $65,500,000 is allocated for grants to enhance and restore the Carson River corridor;

WHEREAS, the State Land Registrar has determined this project is both necessary and in the best interests of the State of Nevada;

NOW, THEREFORE, in consideration of the aforesaid premises, the parties mutually agree as follows:

1. REQUIRED APPROVAL. This Funding Agreement shall not become effective until and unless approved by the State Land Registrar and the governing bodies of Douglas County and The Nature Conservancy.

2. DEFINITIONS. "Grantor" means the State of Nevada and the Division of State Lands, its officers and employees. "Grantee" means the Douglas County Board of Commissioners. "Recipient" means The Nature Conservancy. "Parties" means the Grantor, Grantee, and Recipient.

3. FUNDING AGREEMENT TERM. This Funding Agreement shall be effective from January 1, 2008 to December 31, 2010, unless sooner terminated by either party as specified in paragraph 10 herein.

4. NOTICE. All notices or other communications required or permitted to be given under this Funding Agreement shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile with simultaneous regular mail, or mailed certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other parties at the addresses specified above.

5. INCORPORATED DOCUMENTS. The parties agree that the responsibilities and duties of each party as well as the scope of the project shall be specifically described; this Funding Agreement incorporates the following attachments in descending order of constructive precedence;

ATTACHMENT A: Question 1 Adopted Regulations
ATTACHMENT B: Project Summary and Special Conditions
ATTACHMENT C: Scope of Work
ATTACHMENT D: Project Budget
ATTACHMENT E: Preliminary Project Design Information
ATTACHMENT F: Operations and Maintenance Plan
ATTACHMENT G: DCNR General Requirements

6. COST: Grantor agrees to provide a maximum of 34.60 percent of the total project cost (the amount actually expended and necessary for the construction and completion of the described project), not to exceed a total grant amount of $500,000.00, contingent upon Grantee's and Recipient's compliance with all of the terms and conditions herein. See Attachment B hereto, for description. Recipient is required to provide a minimum of 65.40 percent of the $1,445,000.00 total project cost as its local share.

7. ASSENT. The parties agree that the terms and conditions listed on incorporated attachments of this Funding Agreement are also specifically a part of this Funding Agreement and are limited only by their respective order of precedence and any limitations specified.

8. INSPECTION & AUDIT.

a. Books and Records. Grantee and Recipient agree to keep and maintain under general accepted accounting principles (GAAP) full, true and complete records, contracts, books, and documents as are necessary to fully disclose to Grantor, or its authorized representatives, upon audits or reviews, sufficient information to determine compliance with all state and federal regulations and statutes.

b. Inspection & Audit. Grantee and Recipient agree that the relevant books, records (written, electronic, computer related or otherwise), including, without limitation, relevant accounting procedures and practices, financial statements and supporting documentation shall be subject, at any reasonable time with written notice, to inspection, examination, review, audit, and copying at any office or location of Grantee and Recipient where such records may be found by Grantor's designated representative.

c. Period of Retention. All books, records, reports, and statements relevant to this Funding Agreement must be retained a minimum of six years. The retention period runs from the date of Grantor's last Funding Agreement payment, or from the date of termination of the Funding Agreement, or from the end of the state fiscal year in which the project was completed, whichever is latest. Retention time shall be extended when an audit is scheduled or in progress for a period reasonably necessary to complete an audit and/or to complete any administrative and judicial litigation which may ensue. Additional retention requirements are defined in Attachment F, DCNR General Requirements.

9. FUNDING DISTRIBUTION: Grantee requested that the Recipient convey a conservation easement to the Bureau of Land Management over the property that will be improved with Question 1 funds, and this conservation easement was conveyed as of June 15, 2007. Question 1 funding in an amount not to exceed $500,000.00 shall be disbursed to Grantee, in the form of an advance or reimbursement(s), for direct distribution to the Recipient. Disbursement of funds from Grantee to the Recipient shall take place within 15 working days of receipt of funding by Grantee from the Grantor. Original invoices, or a request for an advance, shall be submitted by Grantee to the Grantor to receive funds. Grantee invoices or advance requests shall include a copy(ies) of Recipient invoices or advance requests to be paid by Grantee.

10. FUNDING AGREEMENT TERMINATION. Grantor may only terminate this project agreement as specified in section 16 of the incorporated Attachment B; or if any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Grantee or Recipient to provide the goods or services required by this Funding Agreement is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or if Grantee or Recipient becomes insolvent, subject to receivership, or becomes voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; or if it is found by the State that any quid pro quo or gratuities in the form of money, services, entertainment, gifts, or otherwise were offered or given by Grantee, or any agent or representative of Grantee, to any officer or employee of the State of Nevada with a view toward securing a Funding Agreement or securing favorable treatment with respect to awarding, extending, amending, or making any determination with respect to the performing of such Funding Agreement, then this Funding Agreement may be immediately terminated by the Grantor.

a. Time to Correct. Termination upon a declared default or breach may be exercised only after service of formal written notice as specified in paragraph 4 above, and the subsequent failure of the defaulting party within 30 calendar days of receipt of that notice to provide evidence, satisfactory to the aggrieved party, showing that the declared default or breach has been corrected.

b. Winding Up Affairs Upon Termination. In the event of termination of this Funding Agreement for any reason, the parties agree that the provisions of this paragraph survive termination:

i. The parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this Funding Agreement. Neither party may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination;

ii. Recipient shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if so requested by the Grantor;

iii. Grantee shall execute any documents and take any actions necessary to effectuate an assignment of this Funding Agreement if so requested by the Grantor.

c. Grantor Notification: Recipient may terminate this Funding Agreement upon 10 days' written notice to Grantor and Grantee if any one of the following occurs: (i) Grantor and/or Grantee fail to timely approve any element of the Project which requires their approval; (ii) Recipient shall be unable to obtain subcontracts after all best efforts and grantor notification; and (iii) Recipient cannot obtain any permit necessary for the Project. In the event of Recipient's termination of the Funding Agreement, Recipient shall promptly return any unexpended funds to Grantor.

11. REMEDIES. Except as otherwise provided for by law or this Funding Agreement, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including, without limitation, actual damages, and to a prevailing party reasonable attorneys' fees and costs. It is specifically agreed that reasonable attorneys' fees shall include without limitation $125 per hour for State-employed attorneys. The State may set off consideration against any unpaid obligation of Grantee to any State agency.

12. LIMITED LIABILITY. The State will not waive and intends to assert available NRS chapter 41 liability limitations in all cases.

13. FORCE MAJEURE. No party shall be deemed to be in violation of this Funding Agreement if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of the Funding Agreement after the intervening cause ceases.

14. INDEMNIFICATION. To the fullest extent permitted by law, Grantee and Recipient shall indemnify, hold harmless and defend, not excluding the State's right to participate, the State from and against all liability, claims, actions, damages, losses, and expenses, including, without limitation, reasonable attorneys' fees and costs, arising out of any alleged negligent or willful acts or omissions of Grantee or Recipient, its officers, employees and agents.

15. WAIVER OF BREACH. Failure to declare a breach or the actual waiver of any particular breach of the Funding Agreement or its material or nonmaterial terms by any party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.

16. SEVERABILITY. If any provision contained in this Funding Agreement is held to be unenforceable by a court of law or equity, this Funding Agreement shall be construed as if such provision did not exist and the nonenforceability of such provision shall not be held to render any other provision or provisions of this Funding Agreement unenforceable.

17. ASSIGNMENT. Neither Grantee nor Recipient shall assign, transfer or delegate any rights, obligations or duties under this Funding Agreement without the prior written consent of the State.

18. PUBLIC RECORDS. Pursuant to NRS 239.010, information or documents received from Grantee and Recipient may be open to public inspection and copying. The State will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests.

19. FEDERAL FUNDING. In the event federal funds are used for match of all or part of this Funding Agreement:

a. Grantee and Recipient certifies, by signing this Funding Agreement, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp. 19160-19211), and any relevant program-specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.

b. Grantee and Recipient shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations.

c. Grantee and Recipient shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulations, and shall not discriminate against any employee or offer for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap condition (including AIDS and AIDS-related conditions.)

20. PROPER AUTHORITY. The parties hereto represent and warrant that the person executing this Funding Agreement on behalf of each party has full power and authority to enter into this Funding Agreement. Grantee and Recipient acknowledge that as required by statute or regulation this Funding Agreement is effective only after approval by the Division of State Lands Administrator and only for the period of time specified in the Funding Agreement. Any services performed by Grantee or Recipient before this Funding Agreement is effective (i.e., prior to the funding agreement term stated in Paragraph 3) or after it ceases to be effective are performed at the sole risk of Grantee or Recipient.

21. GOVERNING LAW; JURISDICTION. This Funding Agreement and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. Grantee and Recipient consent to the jurisdiction of the Nevada district courts for enforcement of this Funding Agreement.

22. ENTIRE FUNDING AGREEMENT AND MODIFICATION. This Funding Agreement and its integrated attachment(s) constitute the entire agreement of the parties and such are intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Funding Agreement specifically displays a mutual intent to amend a particular part of this Funding Agreement, general conflicts in language between any such attachment and this Funding Agreement shall be construed consistent with the terms of this Funding Agreement. Unless otherwise expressly authorized by the terms of this Funding Agreement, no modification or amendment to this Funding Agreement shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto.

IN WITNESS WHEREOF, the parties hereto have caused this Funding Agreement to be signed and intend to be legally bound thereby.

Pamela B. Wilcox Grantor Signature	6/27/08 Date	Administrator/State Lands Registrar Grantor's Title
Grantee Signature Kelly Kite	7/17/08 Date	Chairman, Board of Commissioners Grantee's Title
Kathryn Landreth Recipient's Signature	7/7/08 Date	Nevada State Director, The Nature Conservancy Recipient's Title

ATTACHMENT A
Question 1 *Adopted* Regulations

(See 17 Page PDF Document Attached)

ATTACHMENT B
Project Summary & Special Conditions

Project Summary:

Project Title and Identification Number:
River Fork Ranch Wetlands Restoration , DO-CR-05020

GRANTOR:.....Nevada Division of State Lands
GRANTEE:.....Douglas County
RECIPIENT:.....The Nature Conservancy
GRANT PROGRAM:.....Question 1

Project Type: Carson River Corridor
Question 1 Funding Source: Carson River Corridor

Period Covered By This Funding Agreement (Term):
January 1, 2008 to December 31, 2010

Proposed Project Cost Sharing Estimates (Match Amount)

Grantee's (Douglas County) Share of Project Cost	65.40% of Project Cost	$945,000.00
Grantor's (State Lands) Share of Project Cost	34.60% of Project Cost	$500,000.00
Estimated Total Project Cost		$1,445,000.00

GRANTEE has represented that a match exceeding the minimum required will be provided, which promoted the project's ranking by the Administrator, therefore **GRANTEE is responsible for a minimum of 65.40% of the ACTUAL costs** of the project, currently estimated to be $945,000.00.

GRANTOR is responsible for a maximum of 34.60% of the ACTUAL costs of the project, not to exceed $500,000.00, unless the funding agreement is amended by the State. Based on the estimated costs, the **GRANTOR** will reimburse **GRANTEE** for administrative costs incurred by the **GRANTEE** and **RECIPIENT** at a maximum rate of 5% of the total project cost.

Project Scope
The purpose of the project is to restore and enhance riparian wetlands on the Carson River at River Fork Ranch, owned by The Nature Conservancy, a non-profit organization,. The Bureau of Land Management is the holder of a conservation easement on the property. A preliminary restoration plan has been prepared. Project objectives include restoration of lost wetlands and meadow habitat, realignment of previously modified river channel, the recovery of hydrologic and geomorphic function, and allowance of natural channel processes including flooding and channel migration.

The above objectives will be accomplished primarily by recreation of channel geometry, re-contour of floodplain areas, and revegetation of disturbed areas. The project is to be designed to not impact flood risk or downstream water users.

This project is a component of a larger project that includes public access and development of recreational trails and educational facilities.

Special Conditions:

In addition to the terms and conditions listed on pages 1-5 of this Funding Agreement, the GRANTOR, GRANTEE, and RECIPIENT mutually agree to perform this Funding Agreement with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps and assurances attached hereto and hereby made a part hereof.

1. The GRANTEE and RECIPIENT hereby promise, in consideration of the promises made by the GRANTOR herein, to execute the project described above in accordance with the terms of the Funding Agreement.

2. The project shall be operated and maintained by the RECIPIENT or its transferee or assignee, upon prior GRANTOR approval, for at least 20 (twenty) years after project completion. The GRANTOR may require repayment by the RECIPIENT of a pro-rata share of the Funding Agreement amount for any period of time that the project will not perform within design criteria and specifications due to a lack of maintenance.

3. Work performed after July 1, 2000 may be eligible for matching contributions provided:

   a. The GRANTEE and RECIPIENT provide documentation detailing the work performed;
   b. The GRANTEE and RECIPIENT provide documentation that the work performed related directly towards project implementation;
   c. The work performed is considered eligible for reimbursement per NAC regulations, Chapter 321, Sections 2 to 35, inclusive; and
   d. The total State Share specified in the Funding Agreement does not increase.

4. The GRANTOR shall receive a site plan and other relevant project plans and specifications, completed by the RECIPIENT, if applicable, showing all facilities and structures constructed as part of the project including summary report with information requested by the GRANTOR.

5. A request for funds exceeding $500,000.00 requires an amendment to this agreement and must be approved by the State Lands Registrar.

6. Question 1 funding in an amount not to exceed $500,000.00 shall be disbursed to GRANTEE in the form of an advance or reimbursement(s) for direct distribution to the RECIPIENT. Original invoices, or a request for an advance, shall be submitted by GRANTEE to the GRANTOR to receive funds. GRANTEE invoices or advance requests shall include a copy(ies) of RECIPIENT invoices or advance requests to be paid by GRANTEE.

7. Payments are on a reimbursement basis and can be advanced in certain circumstances. Requests for reimbursements or advances must contain the necessary information identified in the "Outlay Report and Request for Reimbursement and/or Advance" form, or equivalent form provided by the GRANTOR. All reimbursements or advances must include supporting documentation, including, but not limited to, invoices, receipts and details outlining the basis for the expenditures, and the signature of the official responsible for approving the expenditures. The GRANTOR reserves the right to request any additional information, related to project expenses, or a request for an advance, that the GRANTOR determines is necessary to process a payment.

8. The GRANTOR may audit project records or its designee. All records must be retained a minimum of 6 (six) years (see Attachment F) after the completion of work on the Project. The GRANTOR reserves the right to require that the records be kept for a longer period of time.

9. The GRANTOR, GRANTEE, and RECIPIENT will be invited to attend all major project issue meetings.

Grantor: Nevada Division of State Lands
Attn: Kevin Hill, Question 1 Program Coordinator
901 S. Stewart Street, Suite 5003
Carson City, NV 89701
(775) 684-2747

Grantee: Douglas County
Attn: Lisa Granahan, Assistant to the County Manager, Douglas County
P.O. Box 218
Minden, NV 89423

Recipient: The Nature Conservancy
Attn: Duane Petite, Carson River Project Director
One East First Street, Suite 1007
Reno, NV 89501

10. The GRANTOR will be notified immediately of any material changes regarding the cost of the project or the scope of work.

11. The RECIPIENT is responsible for obtaining all permits, easements and other private and governmental agency approvals required for the project prior to the commencement of construction.

12. To the fullest extent permitted by law, the GRANTEE and RECIPIENT agree to indemnify, hold harmless and defend the State of Nevada, its officers, employees, agents and invitees from and against all liabilities, claims, actions, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of any alleged negligent or willful acts or omissions of the GRANTEE and RECIPIENT, its officers, employees and agents.

13. The failure of all parties to enforce any provision of the Funding Agreement shall not be construed as a waiver of limitation of that party's right to subsequently enforce and compel strict compliance with every provision of this Funding Agreement.

14. This Funding Agreement may be modified or amended if the amendment is made in writing and is signed by all parties.

15. If any provision of this Funding Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of the Funding Agreement is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

16. Termination

The GRANTOR may terminate this Funding Agreement for reason of default by the GRANTEE and/or RECIPIENT. Any of the following events described in subparagraphs a through f inclusive shall constitute default:

a. Termination of the grant by reason or fault of the GRANTEE and/or RECIPIENT;
b. Failure by the GRANTEE and/or RECIPIENT to observe any of the covenants, conditions, or warranties of this Funding Agreement and its incorporated provisions;
c. Failure by the GRANTEE and/or RECIPIENT to make progress on the project within the Period covered by this Funding Agreement;
d. Failure of the GRANTEE to directly distribute funds received from the GRANTOR to the RECIPIENT within 15 working days;
e. Unsatisfactory financial conditions of the GRANTEE and/or RECIPIENT which endanger the performance of the grant; and/or
f. Delinquency by the GRANTEE and/or RECIPIENT in payments to contractors, except for those payments to contractors which are being contested in good faith by the GRANTEE AND/OR RECIPIENT.
g. Conditions in the Event of Default:

   i. If the Project is not completed, the GRANTEE and/or RECIPIENT is required to reimburse the GRANTOR for funds expended for those portions of the Project that will not stand on their own, as determined by the GRANTOR.
   ii. The GRANTOR shall give notice to the GRANTEE and/or RECIPIENT if the GRANTEE and/or RECIPIENT is in default in the performance of any of the duties of the GRANTEE and/or RECIPIENT described in this Funding Agreement. The GRANTEE and/or RECIPIENT shall have 30 days from receipt of notice to remedy the default, or to commence to remedy the default if the default is not reasonably curable within such 30-day period, and if the GRANTEE and/or RECIPIENT does not remedy, or commence to remedy, the default within such period of time, the GRANTOR may terminate this Funding Agreement. The right of the GRANTOR to terminate this Funding Agreement shall not impair any other rights or remedies at law or equity the GRANTOR may have against the GRANTEE and/or RECIPIENT under this agreement or under the law. No waiver of any default by the GRANTOR under this contract shall be held to be a waiver of any other subsequent default by the GRANTEE and/or RECIPIENT. All remedies afforded under this Funding Agreement are cumulative; this is in addition to every other remedy provided therein or under the law.

h. Grantor Notification: Recipient may terminate this Funding Agreement upon 10 days' written notice to Grantor and Grantee if any one of the following occurs: (i) Grantor and/or Grantee fail to timely approve any element of the Project which requires their approval; (ii) Recipient shall be unable to obtain subcontracts after all best efforts and grantor notification; and (iii) Recipient cannot obtain any permit necessary for the Project. In the event of Recipient's termination of the Funding Agreement, Recipient shall promptly return any unexpended funds to Grantor.

17. The RECIPIENT will furnish progress reports and such other information as the GRANTOR may require. Progress reports will be required *no more than* quarterly. At a minimum, the GRANTOR will require notification and an opportunity to review project design and construction at the following project milestones:

- Project initiation date after grant award
- Final design, including report, prior to advertisement* and award of construction contract
- Completion of 25%, 50%, and 75% of construction
- Project completion prior to release of contractor

*Grantor shall be provided 5 working days notice prior to advertisement.

18. The GRANTEE and/or RECIPIENT will provide and maintain competent and adequate engineering supervision and inspection at the construction site to insure that completed work conforms to the approved plans and specifications.

19. The GRANTEE and RECIPIENT must receive written notice to proceed from the GRANTOR prior to advertisement of bids and commencement of major construction.

20. The Grantee shall post an appropriate sign at the project site acknowledging the project's funding source(s).

21. The laws of the State of Nevada shall govern this Agreement.

ATTACHMENT C
Scope of Work

Project Name: River Fork Ranch Wetlands Restoration
Project Number DO-CR-05020

Grantor: Nevada Division of State Lands
Grantee: Douglas County, NV
Recipient: The Nature Conservancy

The purpose of the project is to restore and enhance riparian wetlands on the Carson River at River Fork Ranch, owned by The Nature Conservancy, a non-profit organization. The Bureau of Land Management is the holder of a conservation easement on the property. .

A preliminary restoration plan has been prepared. Project objectives include restoration of lost wetlands and meadow habitat, realignment of previously modified river channel, the recovery of hydrologic and geomorphic function, and allowance of natural channel processes including flooding and channel migration.

The above objectives will be accomplished primarily by recreation of channel geometry, re-contour of floodplain areas, and revegetation of disturbed areas. The project is to be designed to not impact flood risk or downstream water users.

This project is a component of a larger project that includes public access and development of recreational trails and educational facilities.

ATTACHMENT D
Project Budget

Project Name: River Fork Ranch Wetlands Restoration
Project Number DO-CR-05020

Grantor: Nevada Division of State Lands
Grantee: Douglas County, NV
Recipient: The Nature Conservancy

River Fork Ranch Wetlands Restoration

Question 1 Project Budget

			Funding Source		
Project Task/Item	Question 1 Request	Match, Cash provided by Recipient	Match, Inkind	Other Non-Qualifying Costs	Subtotal
Purchase of the Property	$0.00	$0.00	$0.00	$1,530,000.00	$1,530,000.00
Conceptual Level Restoration Planning	$0.00	$60,000.00	$0.00	$0.00	$60,000.00
Required Assessments	$0.00	$60,000.00	$0.00	$0.00	$60,000.00
Engineering Level Planning and Permitting	$0.00	$150,000.00	$0.00	$0.00	$150,000.00
Earthwork / Materials	$415,000.00	$625,000.00	$0.00	$0.00	$1,100,000.00
Re-Vegetation / Weed Control	$0.00	$50,000.00	$0.00	$0.00	$50,000.00
Administrative Costs	$25,000.00	$0.00	$0.00	$0.00	$25,000.00
Project Management	$60,000.00	$0.00			
Subtotal	$500,000.00	$945,000.00	$0.00	$1,530,000.00	
				Total Project Cost	$2,975,000.00
				Total Qualifying Project Cost	$1,445,000.00
Percent of Total, Qualifying Costs	34.60207612	65.39792388	0		
Total Match Percentage			65.39792388		
Percentage Total (100?)			100		
Total Match			$945,000.00		
Total Q1 Request			$500,000.00		
Total Qualifying Project Cost			$1,445,000.00		

ATTACHMENT F
Operations and Maintenance Plan

Project Name: River Fork Ranch Wetlands Restoration
Project Number DO-CR-05020

Grantor: Nevada Division of State Lands
Grantee: Douglas County, NV
Recipient: The Nature Conservancy

Operations and maintenance activities will be the responsibility of the land owners, currently The Nature Conservancy (TNC). The restoration project is designed to be a self-sustaining system. Intensive management of the river and wetlands is not anticipated, however, TNC has established a Carson River stewardship fund to provide resources for needed and ongoing maintenance.

The Nature Conservancy is partnering with the University of Nevada at Reno (UNR) to monitor the project at River Fork Ranch. Long term monitoring needs will be identified by TNC and UNR. More specific operation and maintenance requirements will be detailed in the Final Restoration Plans and in a Conservation Easement to be placed on the property in the near future. The operation and maintenance tasks may be assigned to another entity only upon written consent of the parties to this funding agreement, such consent not to be reasonably withheld.

ATTACHMENT G
DCNR General Requirements

Project Name: River Fork Ranch Wetlands Restoration
Project Number DO-CR-05020

Grantor: Nevada Division of State Lands
Grantee: Douglas County, NV
Recipient: The Nature Conservancy

Regarding the eligibility of in-kind services, materials, and equipment offered by the Recipient to meet its match requirement, as well as other matters necessary to administer funding, the parties mutually agree as follows:

Definitions:

Eligible expenses: Expenses that are directly related to the project.

Cash reimbursement: Direct payment to the Recipient in cash for eligible expenses incurred after execution of the funding agreement.

Bond Cash on Hand: Bond proceeds held, as unexpended, by the Recipient during any stage of a covered project.

Terms and Conditions:

1. Recipient will bear the full responsibility of properly administering funds allocated under Assembly Bill No. 9 (AB9), which defined the act that was presented to a vote of the people and ultimately created the Question 1 Resource Bond Funding Program.. This responsibility includes complete and accurate accounting of all funds, both bond and matching; ensuring expenditures and procurement activities are in compliance with the enabling legislation, Generally Accepted Accounting Principles, and all other applicable laws and regulations.

2. This requirement also applies to the Recipient's contractors and their subcontractors. Prevention of project overruns/shortfalls is the responsibility of the Recipient. The Grantor, its Department of Conservation and Natural Resources, and the AB 9 program administered under this agreement will not be obligated to supplement project funds, beyond the approved project budget, due to cost overruns, shortfalls, unforeseen circumstances, or any other reason.

3. Advances may be requested by the Recipient, but the requested advance amount must be based on realistic expenditure projections and must be liquidated within 90 days from receipt. The Administrator retains discretion to grant advances.

4. Cash reimbursements to the Recipient will be by payment to the Recipient via the Grantee for eligible expenses incurred after execution of the funding agreement.

5. Advances and cash reimbursements are subject to the following conditions:

   a) If the Recipient requests an advance, the Outlay Report must be submitted on a quarterly basis until all advance amounts are spent;
   b) Requests for reimbursements may not outpace currently available bond proceeds specifically designated for their project(s);
   c) Requests for reimbursements/advance may not exceed the total amount approved (bond share) for the project(s);
   d) Funds will not be disbursed to any entity for the purpose of simply accruing interest; and
   e) Recipient should not commingle AB 9 expenditures/funds with non-AB 9 related expenditures and must separately account for these expenditures and revenue sources.

The above policies for cash management apply to not only the primary recipient of the bond funds, but also their contractors and subcontractors.

Bond Cash on Hand, Excess Balances:

1. Cash on hand, including amounts received as advances, must be spent within 90 days. The DCNR may require repayment of any unspent advance amount at the end of the 90-day period.

2. The above policies for cash management apply to not only the primary recipient of the bond funds, but also their contractors and subcontractors.

Retention and Record Keeping:

1. Recipient agrees to maintain all records relevant to its AB 9 project for which funds were allocated in accordance with NRS chapter 239. Additionally, recipient must keep records at least six (6) years from the date of Grantor's last Funding Agreement payment, or from the date of termination of the Funding Agreement, or from the end of the state fiscal year (July- June) in which the project was completed, whichever is latest.

2. If any litigation concerning the project is begun before the expiration of this six (6) year period, the individual file must be retained for six (6) calendar years from the date of resolution of the litigation; and

3. Before any files are destroyed, the Recipient must contact the Grantor to obtain and verify final disposition instructions. This requirement also applies to the Recipient's contractors and any subcontractors.
4. Examples of records subject to retention provisions are (list is not intended to be all inclusive): all fiscal/accounting records and reports; all drawings, blueprints, renderings, architect and/or engineering reports, financial estimates, fee schedules, site proposals, photos, maps, copies of easements, copies of building permits, copies of inspections, related correspondence; and all procurement activities, including contractors proposals and rates.

Other:

1. Recipient may be subject to audit and must allow access to applicable AB 9 records, if so directed by the Grantor. If any audit finding reveals that either an overpayment was made, or ineligible costs were incurred (either match or bond proceeds), the overpayment or the ineligible expense must be repaid to the AB 9 Fund, DCNR, Carson City, Nevada.

2. It is the policy of the Board of Examiners and the DCNR to restrict contractors, as well as all other recipients of public funds, to the same (or less) travel rates and procedures allowed State employees. This requirement also applies to the recipient's contractors and any subcontractors.

Certain disbursements will not be paid unless agreed to in advance. These include:

1. Secretarial or word processing services (normal, temporary, or overtime);

2. Any other staff charges, such as filing, proofreading, regardless of when incurred;

3. Photocopy expenses of more than 15 cents per page;

4. Photocopy expenses in excess of $2,000.00 for a single job;

5. Computer time.

6. Equipment purchased for the project

The State will not reimburse expenses for the following:

1. Local telephone expenses or office supply costs;

2. The costs of first-class travel;

3. Grant administration costs in excess of 5 percent of the total project costs, and any undocumented administrative costs.

ADOPTED REGULATION OF THE ADMINISTRATOR

OF THE DIVISION OF STATE LANDS OF THE STATE

DEPARTMENT OF CONSERVATION

AND NATURAL RESOURCES

LCB File No. R186-03

Effective April 22, 2004

EXPLANATION – Matter in *italics* is new; matter in brackets [~~omitted material~~] is material to be omitted.

AUTHORITY: §§1-35, section 2 of chapter 6, Statutes of Nevada 2001 Special Session.

A REGULATION relating to natural resources; providing a program for persons to apply for and receive proceeds from the sale of general obligation bonds to protect, preserve and obtain the benefits of the property and natural resources of this state; and providing other matters properly relating thereto.

Section 1. Chapter 321 of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 35, inclusive, of this regulation.

Sec. 2. ***As used in sections 2 to 35, inclusive, of this regulation, unless the context otherwise requires, the words and terms defined in sections 3 to 28, inclusive, of this regulation have the meanings ascribed to them in those sections.***

Sec. 3. ***"Acquisition" means the securing of the right of public use of real property by the purchase or donation of an interest in that real property.***

Sec. 4. ***"Administrator" means the Administrator of the Division.***

Sec. 5. *"Carson River corridor" includes, without limitation, the 100-year floodplain of the Carson River, land adjacent to the 100-year floodplain of the Carson River, sloughs or ponds of the Carson River and old meanders and oxbows of the Carson River.*

Sec. 6. *"Conservation and Resource Protection Grant Program" or "Program" means the conservation initiative that was created by chapter 6, Statutes of Nevada 2001 Special Session, and approved by the voters.*

Sec. 7. *"Construction" means those activities directly related to the creation of a new recreational trail or to improvements made to an existing recreational trail that cause the trail to comply with a desired standard as determined by the Administrator.*

Sec. 8. *"Division" means the Division of State Lands of the State Department of Conservation and Natural Resources.*

Sec. 9. *"Easement for conservation" has the meaning ascribed to it in NRS 111.410.*

Sec. 10. *"Greenbelt" means an open area of real property that is cultivated or maintained in a natural or seminatural state and used:*

1. As a buffer between land uses;

2. To mark the edge of an urban or developed area, or a natural feature, such as a stream or lake; or

3. To create a linear corridor for the provision of trails or other amenities.

Sec. 11. *"Habitat conservation plan" means a plan to protect or enhance a wildlife habitat for an endangered species or other species that needs special protection, or a plan to protect or enhance essential habitat for biodiversity. The plan may include a procedure for compliance with the Endangered Species Act of 1973, 16 U.S.C. §§ 1531 et seq.*

Sec. 12. *"Historic or cultural resources" means any surviving evidence that relates to the history of the use of the land from the earliest human occupation to recent historical activities. Surviving evidence may include, without limitation, sites, structures, districts, objects, artifacts and historic documents associated with or representative of peoples, cultures, and human activities and events from any period of time, including, without limitation, the present.*

Sec. 13. *"Matching contribution" includes money or anything of value, including, without limitation, the use of personnel, materials or equipment that is expended on a project.*

Sec. 14. *"Municipality" means an incorporated city, an unincorporated town created pursuant to chapter 269 of NRS or a general improvement district created pursuant to chapter 318 of NRS.*

Sec. 15. *"Nonprofit conservation organization" means a nonprofit organization that has as part of the mission of the organization the acquisition of property for conservation purposes.*

Sec. 16. *"Nonprofit organization" means an entity or organization that is exempt from federal income taxation pursuant to 26 U.S.C. § 501(c)(3).*

Sec. 17. *"Open-space plan" means an inventory of undeveloped and semideveloped land or resources with a plan for the long-term preservation and conservation of that land. The plan may include a provision for dispersed recreational opportunities on the land.*

Sec. 18. *"Project" includes, without limitation, preparation of an open-space plan, preparation of a habitat conservation plan, acquisition of an interest in land or water for the purposes of protection or enhancement of a wildlife habitat, protection of sensitive or unique vegetation, protection of historic or cultural resources, protection of riparian corridors or*

wetlands, construction of a recreational trail, enhancement and restoration of the Carson River corridor, development of the path system in the Lake Tahoe area and other environmental activities.

Sec. 19. *"Public benefit" means the outcome of a project or acquisition that obtains, protects or preserves the benefits of property or natural resources within the State of Nevada for the public.*

Sec. 20. *"Recreational facility" means a facility for the use and enjoyment of an outdoor recreation area that provides an opportunity for the observation, interpretation or enjoyment of natural resources.*

Sec. 21. *"Recreational trail" means a trail, pathway or similar area for walking, hiking, bicycling, horseback riding, exercising, paddling, swimming or any other recreational activity if the activity does not have an adverse impact on a threatened or endangered species, wetland, riparian corridor, wildlife habitat, sensitive or unique vegetation or other important natural resource.*

Sec. 22. *"Riparian corridor" means land related to or located on the bank of or adjacent to a natural or artificial waterway, including, without limitation, a river, an intermittent or permanent creek or stream, a gully where surface water collects, a wetland, a lake or a ditch, if the land exhibits plant types unique to areas with periodic or perennial water sources of a magnitude greater than the surrounding uplands.*

Sec. 23. *"Sensitive or unique vegetation" means any species, cluster of species or type of habitat designated as sensitive or unique vegetation by an appropriate federal or state agency, any species of vegetation in a declining trend, any species of vegetation that has*

characteristics that have been identified as worthy of special consideration or any species of vegetation that is highly restricted in distribution or that occurs only in a very specialized habitat.

Sec. 24. *"State agency" means any agency, department or division of the Executive Department of this state and includes the University and Community College System of Nevada.*

Sec. 25. *"Urban park" means land located in a community of any size that provides an opportunity for casual recreational activity and includes, without limitation, any natural area, area of scenic value, area of physical or biological importance, wildlife area, land that provides outdoor community space and land that provides a connection to another public area.*

Sec. 26. *"Wetland" means land having a water table at, near or above the land surface, or land that has been saturated with water for a period of time long enough to promote wetland or aquatic processes indicated by hydric soil, hydrophytic vegetation and other biological activity adapted to a wet environment.*

Sec. 27. *"Wildlife habitat" means a diverse area with a combination of necessary resources and environmental conditions that promotes a population of at least one wildlife species and allows that species to flourish and reproduce.*

Sec. 28. *"Wildlife species" means any species of animal, including, without limitation, insects, amphibians, reptiles, and other vertebrates and invertebrates.*

Sec. 29. *1. The Division will award grants of money from the sale of general obligation bonds of this state to counties, municipalities, state agencies or nonprofit organizations, or any combination thereof. The money will be distributed as follows:*

(a) Not more than $7,250,000 to a state agency, county, municipality or nonprofit organization, or any combination thereof, for the construction of recreational trails. A recreational trail constructed with money awarded pursuant to this paragraph may include signs, markings, access points, staging areas, trailheads and directly related improvements such as restrooms and shade structures. Such a recreational trail may also include landscaping or revegetation with any associated irrigation equipment but only in an area around an improvement that requires landscaping or revegetation for slope stabilization as a direct result of the construction of the improvement.

(b) Not more than $5,000,000 to a state agency, county, municipality or nonprofit organization, or any combination thereof, for the acquisition of land and water or interests in land and water for urban parks or greenbelts.

(c) Not more than $3,000,000 to a state agency, a county whose population is less than 100,000 or a municipality within a county whose population is less than 100,000, or any combination thereof, for the development of habitat conservation plans.

(d) Not more than $250,000 to a county whose population is less than 100,000 or a municipality within a county whose population is less than 100,000, or any combination thereof, for the development and adoption of open-space plans.

(e) Not more than $20,000,000 to a county or a municipality within a county, or any combination thereof, for the acquisition of land and water or interests in land and water to protect and enhance wildlife habitat, sensitive or unique vegetation, historic or cultural resources, riparian corridors, wetlands and other environmental resources pursuant to an adopted open-space plan.

(f) Not more than $10,000,000 to Churchill County, Douglas County, Lyon County, Carson City or a municipality located within those counties, or any combination thereof, to enhance and restore the Carson River corridor. Money awarded pursuant to this paragraph must be used to:

(1) Acquire and develop land and water rights;

(2) Provide recreational facilities;

(3) Provide access to and along the Carson River, including, without limitation, parking areas; or

(4) Restore the Carson River corridor.

(g) Not more than $5,000,000 to Douglas County, Washoe County, Carson City or a municipality located within those counties, or any combination thereof, to enhance and develop the path system in the Lake Tahoe area.

2. The Division may enter into contracts or agreements with nonprofit conservation organizations in an amount not to exceed $15,000,000 to acquire land and water or interests in land and water for the public benefit to protect and enhance wildlife habitat, sensitive or unique vegetation, historic or cultural resources, riparian corridors, floodplains and wetlands and other environmental resources.

3. The Administrator may use advisory committees to make recommendations for grants awarded pursuant to subsection 1 or contracts or agreements entered into pursuant to subsection 2.

4. The Administrator will coordinate with the Division of State Parks of the State Department of Conservation and Natural Resources for any grant awarded pursuant to paragraph (b) of subsection 1.

5. The Administrator will coordinate with the Department of Wildlife and the Nevada Natural Heritage Program for any grant awarded pursuant to paragraph (c) of subsection 1.

6. The Administrator will determine the boundaries of the Carson River corridor for any grant awarded pursuant to paragraph (f) of subsection 1.

7. An urban park for which land and water or an interest in land and water was acquired pursuant to paragraph (b) of subsection 1 must be open to the public.

Sec. 30. *1. The Administrator will periodically:*

(a) Solicit applications from counties, municipalities, state agencies and nonprofit organizations for grants of money from the sale of general obligation bonds issued pursuant to chapter 349 of NRS;

(b) Solicit applications from nonprofit conservation organizations to carry out contracts or agreements; and

(c) Establish deadlines for the submission of applications solicited pursuant to paragraphs (a) and (b).

2. An application for a grant, contract or agreement pursuant to subsection 1 or 2 of section 29 of this regulation must be submitted to the Administrator and must include, without limitation:

(a) A completed application on a form provided by the Administrator;

(b) The total projected cost of the project, including, without limitation, as appropriate, the estimated costs for planning, design, acquisition and construction, and a description of the manner in which each estimated cost was calculated;

(c) The amount of money requested for the project;

(d) A detailed description of the project and the manner in which the project meets the intent of the Program;

(e) Documentation that the project was commenced on or after July 1, 2000;

(f) A proposed schedule for the project that must include the planned phasing and implementation of the project;

(g) Documentation of the qualifications of the nonprofit organization, if applicable;

(h) A detailed description of matching contributions that will be provided by the applicant;

(i) Proof that the applicant has title to, or a lease or easement on, land that is required to carry out the project or a letter of intent between the property owner and the applicant concerning the acquisition of the property by the applicant;

(j) Proof that the applicant is willing to sell or donate land and proof that there is a person who is willing to purchase or receive the land, if applicable;

(k) If the application is submitted by a nonprofit conservation organization and includes the acquisition of land or water or an interest in land or water, the most current financial statement of the organization and specific details concerning the manner in which the money of the State will be secured by an interest in the property;

(l) A map of the location and a plan of the site of the project indicated in an appropriate scale;

(m) A statement from an appropriate local, regional, state or federal agency that the project conforms to all applicable local, regional, state and federal plans;

(n) Documentation and a statement by the applicant that the applicant notified all property owners within a 1-mile radius of the subject property boundary or the closest 10 property owners, whichever number of property owners is less, about the proposal before the submission of the proposal to the Division, unless the Administrator requires different information on a case-by-case basis;

(o) A statement from any local jurisdiction affected by the proposal that details any issues or concerns about the proposal and whether the local jurisdiction supports or opposes the proposal;

(p) A completed Environmental Impacts Checklist on the form provided by the Division and, if applicable as a result of a potential adverse impact to the environment, a summary of a proposed plan to mitigate the potential impact of the project on the environment; and

(q) A summary of the proposed plan for operation and maintenance of the project for a period of not less than 20 years, including, without limitation, the identity of the person who will operate the project and provide the maintenance.

Sec. 31. *Before a county, municipality, state agency or nonprofit organization submits an application for a proposed project, the county, municipality, state agency or nonprofit organization may submit a preapplication to the Division for an initial determination of the eligibility of the project for a grant under the Program. In making a determination of the eligibility of a project, the Administrator will consider, without limitation, the following criteria:*

1. Whether the county, municipality, state agency or nonprofit organization is eligible to apply for a grant;

2. Whether the proposed project is eligible pursuant to section 29 of this regulation; and

3. Whether the proposed project provides a public benefit as determined by the Administrator.

Sec. 32. *1. The Administrator will rank applications made pursuant to section 30 of this regulation in order of their importance. The Administrator will award grants for projects or acquisitions that, based on the application, are most appropriate for the receipt of a grant within the overall purpose of the Program. The Administrator will use a point system as outlined in the Administrative Guidelines of the Division to rank each application. The Administrator will award points based on the following factors:*

(a) The extent of environmental significance of the project and the degree of conservation and protection of natural resources, including, without limitation, the preservation of a natural, scientific, cultural, archaeological, agricultural, paleontological or historical site, or a wetland or riparian resource;

(b) The extent of the public benefit, including, without limitation, an overall advancement in the conservation and protection of the natural resources of the State, an enhancement to recreational opportunities, increased public access to lands and waters and the achievement of goals identified in adopted open-space plans;

(c) The objectives of the project are clearly stated in the proposal, and the applicant has the ability to carry out those objectives;

(d) The detail and design of the project is adequate and includes a detailed plan for management of the project that specifies the manner in which the project will be maintained and the manner in which the project will remain consistent with the purpose of the Program;

(e) The projected budget and associated costs of the project are reasonable and detailed, the amount and sources of matching contributions are listed and the project will meet the stated objectives in a cost-effective manner;

(f) The fact that the project is a cooperative effort with other agencies, organizations or persons and the extent of the support for the project from counties, municipalities and other public entities; and

(g) Any other factor that the Administrator considers to be important in the ranking process, including, without limitation:

(1) The urgency of the need for the project;

(2) That the applicant provides for matching contributions that exceed the matching contributions required in section 33 of this regulation;

(3) The application for acquisition of land includes the acquisition of water rights or another interest that will remain with the land in perpetuity;

(4) The existence of a local need for the project that warrants special attention for the project due to a lack of similar opportunities in the local area; and

(5) If the project does not include the acquisition of fee simple title to land, the applicant proposes an easement for conservation or a remainder after a life estate.

2. The factors of environmental significance, as described in paragraph (a) of subsection 1, and public benefit, as described in paragraph (b) of subsection 1, are worth more points than the other factors in subsection 1.

3. The Administrator may use an advisory committee to review applications and make recommendations to the Administrator. The Administrator may consider a recommendation by an advisory committee when awarding points pursuant to subsection 1.

4. The decision of the Administrator is final. An application that is not selected by the Administrator to receive a grant may be resubmitted for a grant to be awarded at a future date.

Sec. 33. *1. To receive a grant pursuant to the Program, an applicant must provide for an eligible matching contribution as follows:*

(a) For a grant awarded pursuant to paragraph (a) or (b) of subsection 1 of section 29 of this regulation, not less than 25 percent of the total cost of the project;

(b) For a grant awarded pursuant to paragraph (c) or (d) of subsection 1 of section 29 of this regulation, not less than 5 percent of the total cost of the project;

(c) For a grant awarded pursuant to paragraph (e) of subsection 1 of section 29 of this regulation:

(1) In a county whose population is 100,000 or more, not less than 50 percent of the total cost of the project; or

(2) In a county whose population is less than 100,000, not less than 25 percent of the total cost of the project;

(d) For a grant awarded pursuant to paragraph (f) or (g) of subsection 1 of section 29 of this regulation, not less than 50 percent of the total cost of the project; and

(e) For a grant awarded pursuant to subsection 2 of section 29 of this regulation, not less than 50 percent of the cost of the acquisition.

2. A matching contribution is eligible for the purposes of this section if the matching contribution is for a project initiated on or after July 1, 2000, if it is directly related to the project or acquisition and if it includes:

(a) Cash;

(b) Planning, labor, including volunteer labor, appraisals, equipment rental and material costs;

(c) Federal contributions;

(d) Any costs associated with required environmental information for the project or acquisition, the documentation of which must be submitted with the application;

(e) Costs incurred for the establishment of a monitoring program to monitor the success of a project;

(f) Any other matching contribution not listed in subsection 3, subject to the approval of the contribution by the Administrator; or

(g) Any combination of paragraphs (a) to (f), inclusive.

3. The following matching contributions, without limitation, do not qualify as eligible matching contributions for the purposes of this section:

(a) Costs associated with the preparation of the application;

(b) In-kind services that do not relate to the project or the purpose of the Program;

(c) Money expended before the initiation of the project, or July 1, 2000, whichever is later;

(d) Other money granted pursuant to the Program; and

(e) Any other matching contribution that the Administrator determines is an inappropriate matching contribution.

Sec. 34. *The Division and the recipient of any money pursuant to a grant, contract or agreement made pursuant to section 29 of this regulation shall enter into an agreement that:*

1. Authorizes the recipient to use the money from the grant, contract or agreement to pay for:

(a) All expenses related directly to the project or acquisition, including, without limitation, expenses related to the planning, design and construction of the project which must be calculated based on actual costs; and

(b) The documented administrative costs of the project, not to exceed 5 percent of the total cost of the project.

2. Prohibits the recipient from using the money from the grant, contract or agreement to pay for:

(a) Any planning activity that is not directly related to the design and engineering of the project;

(b) The purchase of new equipment, unless the Administrator has determined that the new equipment is necessary as a one-time purchase specific to the project;

(c) Any work required by a public agency as mitigation or as a condition of the approval of any other project;

(d) Any component of the project that the Administrator determines does not benefit the public;

(e) Any project or portion of a project that has already been completed; or

(f) Any other expenses that the Administrator determines are not necessary to carry out the purposes of sections 2 to 35, inclusive, of this regulation, or that are not in compliance with the intent of the Program.

Sec. 35. *The Division and the recipient of any money pursuant to a grant, contract or agreement pursuant to section 29 of this regulation shall enter into an agreement that requires the recipient to:*

1. Provide a matching contribution of not less than the amount specified in section 33 of this regulation.

2. Provide a plan for the operation and maintenance of the project for not less than 20 years after the project is completed.

3. Agree to:

(a) Ownership of a full or partial interest in any property that is necessary for the project;

(b) Include pertinent nonrevocable deed restrictions and appropriate reversionary clauses to ensure that at all times the land is maintained in a manner consistent with the purpose of the Program; and

(c) Include a stewardship statement that addresses maintenance, monitoring and enforcement of weed control, dust control and other related issues.

4. Agree to any additional conditions that the Administrator determines are necessary to carry out the purposes of sections 2 to 35, inclusive, of this regulation or the intent of the Program, including, without limitation, the posting of a performance bond by the recipient.

5. Obtain such easements for conservation or other interests in land in perpetuity, or as otherwise approved by the Administrator, as are necessary to carry out the project. The

Administrator must approve the easements. The Administrator may require that the easement for conservation or other interest in land be held by the State.

6. Acknowledge that any interest in land or water acquired by the State or a nonprofit organization pursuant to the Program must:

(a) Be acquired and held by the Division pursuant to chapter 321 of NRS; and

(b) Not be acquired by condemnation or the power of eminent domain.

7. Maintain an accurate accounting of all expenditures made from money received pursuant to the Program and allow the Division to review the accounting upon request.

8. If the recipient requests that the entire amount of the grant or a portion thereof be provided in advance, demonstrate an extraordinary need and enter into an agreement with the Division that delineates the specific reporting methods that will be used, including, without limitation, quarterly expenditure reports and a project status report that details the timeliness of the project.

9. Provide the Division with detailed invoices on a consistent basis as agreed upon by the Division and the recipient to ensure timely and accurate disbursement of grant money.

ATTACHMENT E, PART 2

River Fork Ranch

A Preliminary Public Access and Ecosystem Restoration Plan

Prepared For

The Nature Conservancy of Nevada
One East First Street
Suite 1007
Reno, NV 89501

Prepared By

Otis Bay Ecological Consultants

110 Mule Deer Dr.

Reno, NV 89523

Otis Bay
Specializing in River, Spring and Landscape Restoration

May 10, 2007

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1. BACKGROUND

1.1 Historic Changes in the River Fork Ranch Ecosystem

The ecosystem of the River Fork Ranch, located at the confluence of the East and West Forks of the Carson River near Genoa (Figure 1.1-1), has significantly changed during historic times, including 1) modification of the Carson River's hydrology, 2) reduction of floodplain connection, 3) channelization of the Carson River system (digging the river straight, wide, and deep), 4) re-routing of the river channel, 5) draining of wetlands, and 6) decline of water quality (Figure 1.1-2 photo showing ranch boundaries). As a result, the Carson River ecosystem, including River Fork Ranch, has been negatively impacted.

1.1.1 Changes in the River Channel

Modification to the river channel began with Caucasian settlement in the 1850s. Agriculture and urban development resulted in substantial negative ecological impacts to the river channel pattern. These changes resulted in a river channel that was straighter, wider, and entrenched, and had shallower water depth during ordinary flow conditions. These imposed conditions, in turn, resulted in significant ecological impacts, including elimination of wetlands and riparian forest areas, elimination or reduction of many fish species, and substantial decline of riparian/wetland birds, amphibians, and reptile.

As land was cleared for agriculture, the river was dammed and diverted to irrigate fields. Eventually development ensued near the river and infrequent flooding began to damage developed property. After heavy rains in December 1964, flooding and declaration of a State of Disaster by President Johnson and Nevada's Governor Sawyer, the United States Bureau of Reclamation (BOR) was directed to proceed with flood rehabilitation work on the Carson River. As a result, the BOR developed the Carson River Flood Rehabilitation Program of 1964 and 1965. Surprisingly, the BOR's flood frequency analysis showed that the December flood of 1964 was equal to only a ten year flood on the East Fork Carson River and only an eight-year flood on the Carson River (BOR, 1965). The BOR's project report indicates that the extensive damage caused by a flood of "less than record proportions" was a result of "developments, values, and conditions" within the river's channel and floodplain, and they projected that the condition would worsen as the population increased. The flood damage rehabilitation consisted of channelizing (widening and straightening) the East Fork of the Carson River to a bottom width of 120 feet and channelizing the Carson River to a bottom width of 110 feet. The channel would be made to contain at least the "dominate discharge of about 3,800 c.f.s." and channel banks would be protected at "critical points" with 16-inch stones so as to resist the flow velocities of the 50 and 100-year magnitude floods.

River Fork Ranch

Location -River Fork Ranch in the Valley

Base Map-National Agricultural Imagery Program (NAIP)
Douglas County-NV
http://keck.library.unr.edu/

Figure 1.1-1

River Fork Ranch

Ranch Boundaries

Figure 1.1-2

River Fork Ranch Boundary

The Bureau recognized that the work performed "unavoidably had some adverse effects on the fishery habitat" and stated that fisheries improvement or damage mitigation was not permitted under their authority. The local Nevada Fish and Game representative expressed concerns over the project and BOR arranged meetings with the State Fish and Game director, where the BOR agreed to implement some of the Fish and Games recommendations. These minor mitigation measures did little however to avoid the overall negative ecological impacts.

According to the scientific literature (Brookes, 1988), river channelization has several adverse ecological and hydraulic results:

1. Moderate to low magnitude peak flows are disconnected from the floodplain, thereby removing an important ecological process.

2. River stage (i.e., the surface elevation of flowing water) is lowered in a wider, deeper channel, thereby drying the upper banks and lowering the riparian water table and eventually resulting in a botanical shift to a dryer community type.

3. The complexity and diversity of aquatic hydraulic habitat types are destroyed as structure (riffles, pools, gravel bars, undercut banks, snags, logs, etc.) is removed (Figures 1.1-3 and 1.1-4).

4. Flow velocity increases, thereby making conditions less suitable for the aquatic fauna.

5. Stream power is increased as the floodplain is disconnected and more flow is contained in a steeper, oversized channel, thereby increasing erosion, scour, and incision.

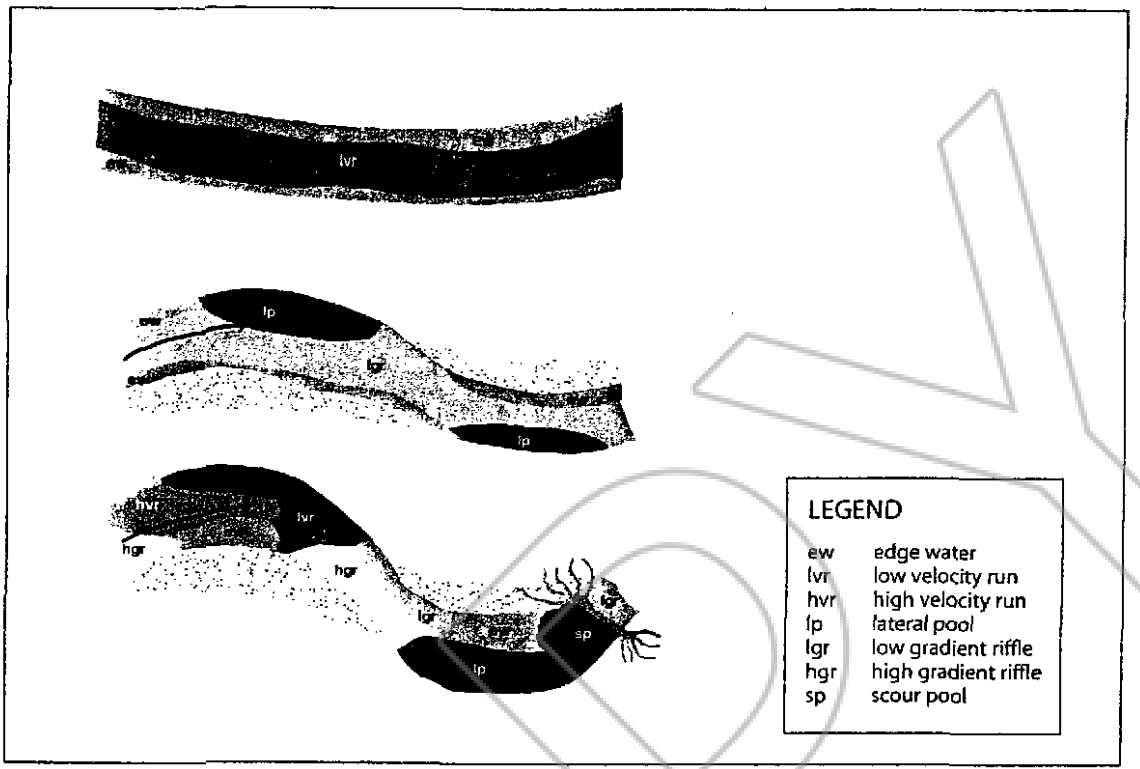


Figure 1.1-3. Well developed meandering pool and riffle sequence produces diverse hydraulic habitats.

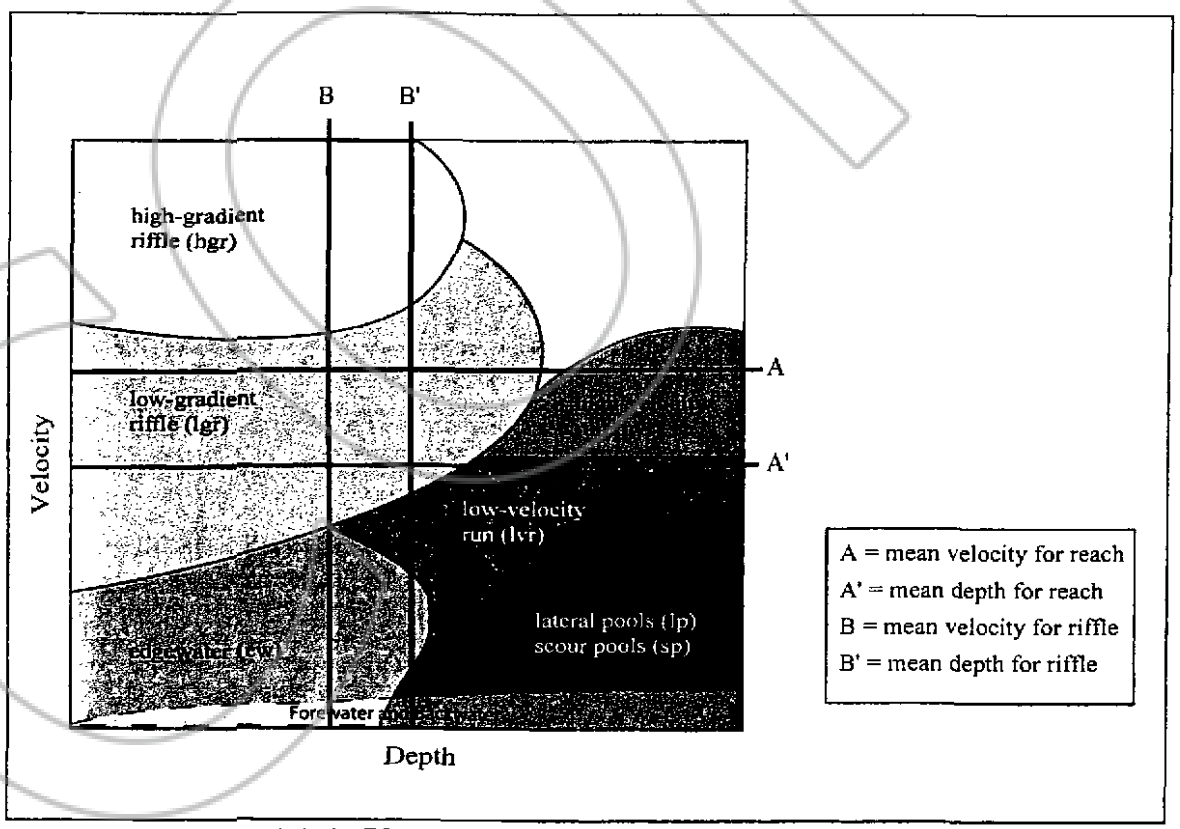


Figure 1.1-4. Plot of hydraulic habitats for stream channels.

The modified channel pattern and channel entrenchment continues to negatively impact the River Fork Ranch ecosystem. Ecological restoration will work to lessen these impacts.

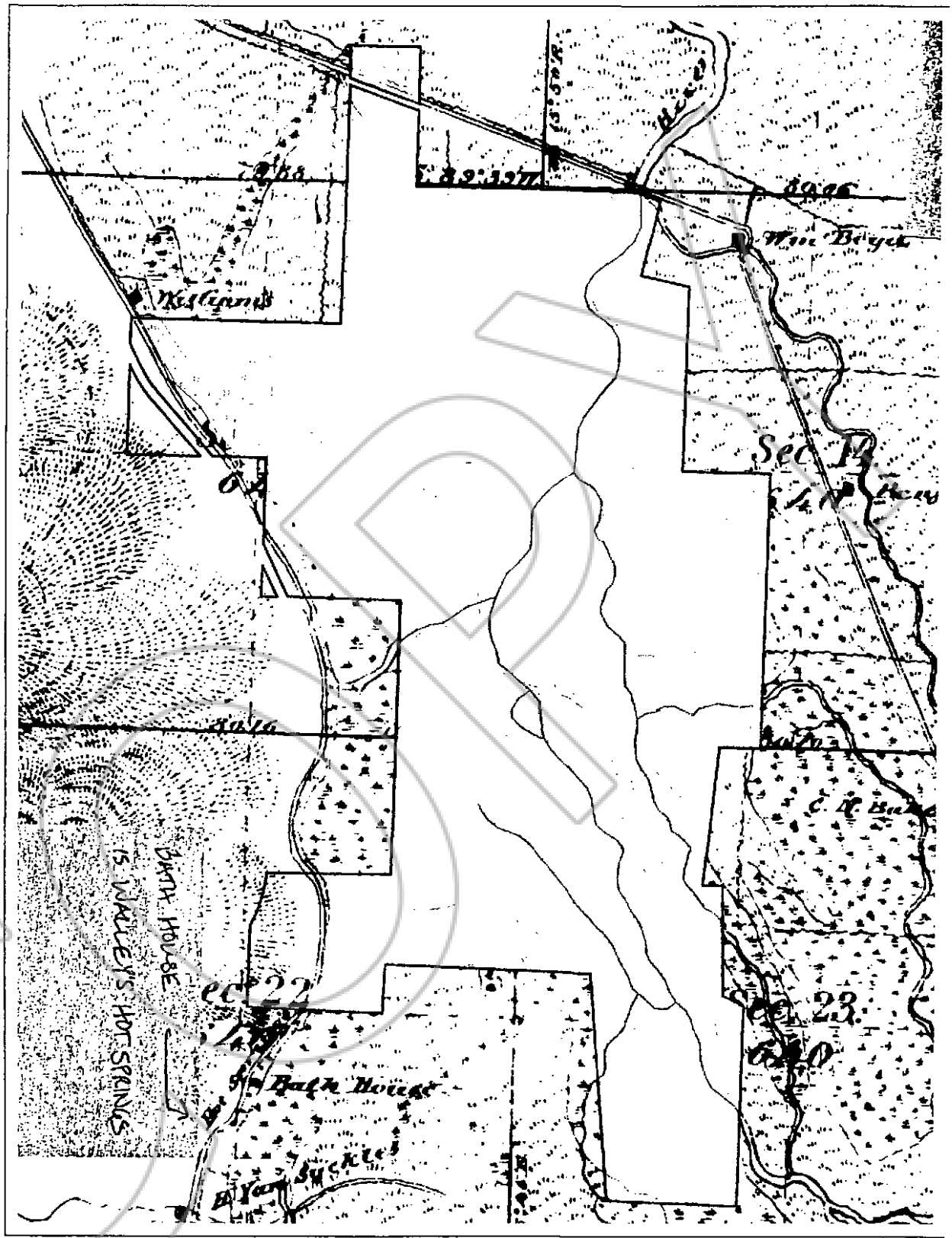
1.1.2 Changes in the Hydrology

Downstream from Gardnerville, the flow regimens for the East, West, and Main Carson Rivers have been changed from the natural flow regime. The only significant impact is during base flow (low flow), during summer months when agricultural diversions substantially dewater the river. River Fork Ranch is within the river reach that is impacted by these diversions. The low flows in the summer create lethal conditions for many species of native wildlife: water temperatures are too high, suitable habitat is lacking, and dissolved oxygen levels are too low. These conditions can be improved by reconnecting the river to the floodplain, narrowing the channel, and increasing summer flow level.

1.1.3 Changes in Vegetation at River for Ranch

The vegetation at River Fork Ranch has been highly altered over the past 150 years. Much of the change in vegetation at the Ranch is consistent with changes seen over the entire Carson River. The Carson River watershed is comprised of numerous plant community types which vary according to natural elements such as elevation, climate, aspect, and soils. Human alterations of the river channel, diversions, development, and wild horse and livestock grazing within the riparian corridor and adjacent uplands have significantly changed vegetation community distribution and species composition along a majority of the Carson River ecosystem. In general, native riparian forest, riparian shrublands, and wet meadow and emergent marsh wetland vegetation community type distributions along the middle Carson River have been reduced as floodplain terraces have been converted to agricultural lands and urban and industrial developments.

Historical accounts and aerial photograph interpretation of the Carson River riparian corridor indicate structurally complex, mixed age stands of Fremont cottonwood (*Populus fremontii*) were prominent along migrating channels and channel scars throughout the greater Carson Valley. Riparian shrublands and emergent and wet meadow wetlands most likely existed as healthy, dynamic ecosystems comprised of native willows, rushes, sedges, and other aquatic species along a multitude of large and small channels and depressional areas. Larger, deep, emergent open water wetlands and a valley teeming with wet meadow and vegetated drainage swales would have been supported by historical water levels prior to agricultural diversions and river channelization.



River Fork Ranch

Historic Wetlands and Channels

Otis Bay

Base Map-Cadastral Map

Surveyed-1861

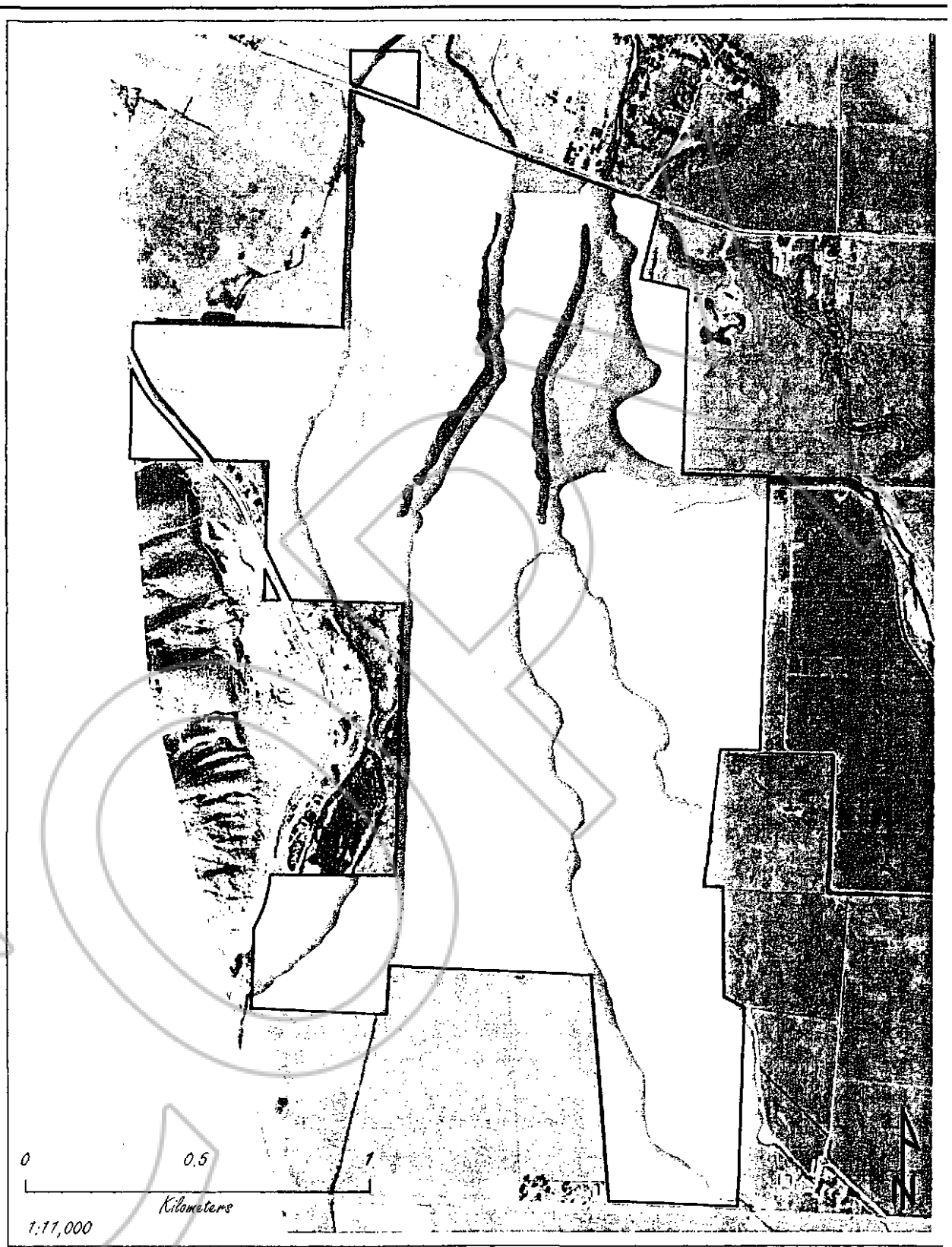
Figure 1.1-5

The 1861 cadastral survey shows approximately 420 acres of wet meadow and 300 acres of emergent wetland at River Fork Ranch (Figure 1.1-5). These plant communities would have typically occurred as seasonally or semipermanently flooded wetlands associated with oxbow and backwater areas within close proximity to active channels. Dominant species include common cattail (*Typha latifolia*), hardstem bulrush (*Scirpus acutus*), Olney's bulrush (*Scirpus americanus*), three-square bulrush (*S. pungens*), creeping spikerush and Baltic rush (*Juncus balticus)*. The 700 acres of wetland and wet meadow habitat has been reduced to approximately 150 acres (Figure 1.1-6 veg map). Much of what was wetland or wet meadow has been converted into irrigated, mixed grass grazing pastures.

The aerial extent of riparian forest has been reduced to a few stands of mature cottonwoods with silver buffalo berry and wild rose mid canopy and a creeping wild rye grass understory. Historically along the Carson River, tall deciduous tree-dominated riparian forests of lower canyons and valleys were mainly comprised of old riparian forest and mixed age forest. Dominant tree species include Fremont cottonwood and black cottonwood. Dominant understory species include red willow (*Salix laevigata*), sandbar willow (*Salix exigua*), yellow willow, Wood's rose, big sagebrush (*Artemisia tridentata*), rubber rabbitbrush (*Chrysothamnus nauseosus*), greasewood (*Sarcobatus vermiculatus*), Torrey saltbush (*Atriplex lentiformis* ssp. *torreyi*), and creeping wildrye (*Leymus triticoides*).

Willow and nonwillow shrub-dominated riparian areas have been reduced greatly across the Ranch through time. Nonwillow dominated plant communities occur mainly within abandoned oxbows disconnected from the active channel where large well developed stands of buffaloberry (*Shepherdia argentia*) are evident. Sandbar willow and Wood's rose are typical understory subdominants. Tall willow-dominated riparian shrublands are prominent immediately adjacent to the active channel and along sandbars, gravel bars, pointbars, and newly exposed streambanks. Dominant species include red willow, sandbar willow, yellow willow, and golden currant (*Ribes aureum*). Young Fremont cottonwood, black cottonwood, and tamarisk (*Tamarix ramosissima*) plants may be present in low quantities. Forbs and grasses such as false Solomon's seal (*Smilacina stellata),* Baltic rush, and creeping spikerush *(Eleocharis macrostachya)* are common understory species.

According to the 1861 cadastral survey, there was little upland habitat suitable for sagebrush, greasewood and rabbitbrush on the Ranch. The establishment and increase in this vegetation type is primarily due to lowering of the water table as the east and west forks of the Carson River were channelized and incised.



River Fork Ranch

Vegetation Map

Berm/Upland
Disturbed/Weedy
Emergent Marsh/Wetland
Equipment Storage/Homesite
Mixed Grass/Grazed
Moist Meadow
Riparian/Water Diversion
Sagebrush/Greasewood Upland
Wet Meadow/Seasonally Inundated
River Fork Ranch Boundary

Otis Bay

Figure 1.1-6

1.1.4 Changes in Wildlife

A comparison between the historical and contemporary fauna inhabiting the waters and adjacent riparian belt on the Carson River reveals parallel changes among multiple faunal groups, from communities that were once more specialized and adapted to a more natural, connected riverine landscape, to more generalist communities that are better able to survive in a landscape that over time has become more disturbed and fragmented. Today, species that are adapted to the historical conditions of the Carson River, that is, cold flowing seasonal snowmelt floods and a lush cottonwood willow corridor interspersed with extensive oxbow wetlands, marshes and meadows created by actively meandering river channels, are on the decline. A few examples include Lahontan cutthroat trout (currently federally listed as threatened), mountain whitefish, northern leopard frogs, western pond turtles, western bluebirds, and long-billed curlews. These species were all once considered "common" within the Carson and Truckee river systems (NDOW, 2002; Hitchcock, 2001; Linsdale, 1940; Ridgway, 1877). Species commonly found in the area today, such as the common carp, bullfrog, brown-headed cowbird, and European starling, are species that can better tolerate warmer water, and disturbed open woodlands. Several of these species have been introduced to the area and cause even more competition and predation stress on the native species communities. As the riparian habitat has been altered over time, the species communities have responded, and specialist species that are associated with large wetland/marsh complexes and a cottonwood gallery forest have become restricted to remnant patches of habitat, while generalist species that can tolerate disturbed landscapes have become much more common.

However, important relict patches of wetlands and marsh still exist on the River Fork Ranch today, and not surprisingly, some of the declining species mentioned above may still be found on this section of river. For instance, northern leopard frogs and western pond turtles are still seen in the Carson Valley and have been observed on surveys at the River Fork Ranch. Bird species of interest that occur in the Carson Valley reach of the Carson River, include white-faced ibis, and many wetland specialists, such as sora, Virginia rail and American bittern. Although they are more common as visitors during migration, a few greater sandhill cranes are known to also breed in this area. These and other wetland-associated species likely constitute relict populations of once-widespread larger populations that encompassed much of Carson Valley. The Carson Valley is the only section along the middle Carson River where opportunities for habitat protection and expansion exist for these wetland specialist species, and equally importantly, for migrant populations of other wetland specialists, such as the long-billed curlew, willet, and marbled godwit.

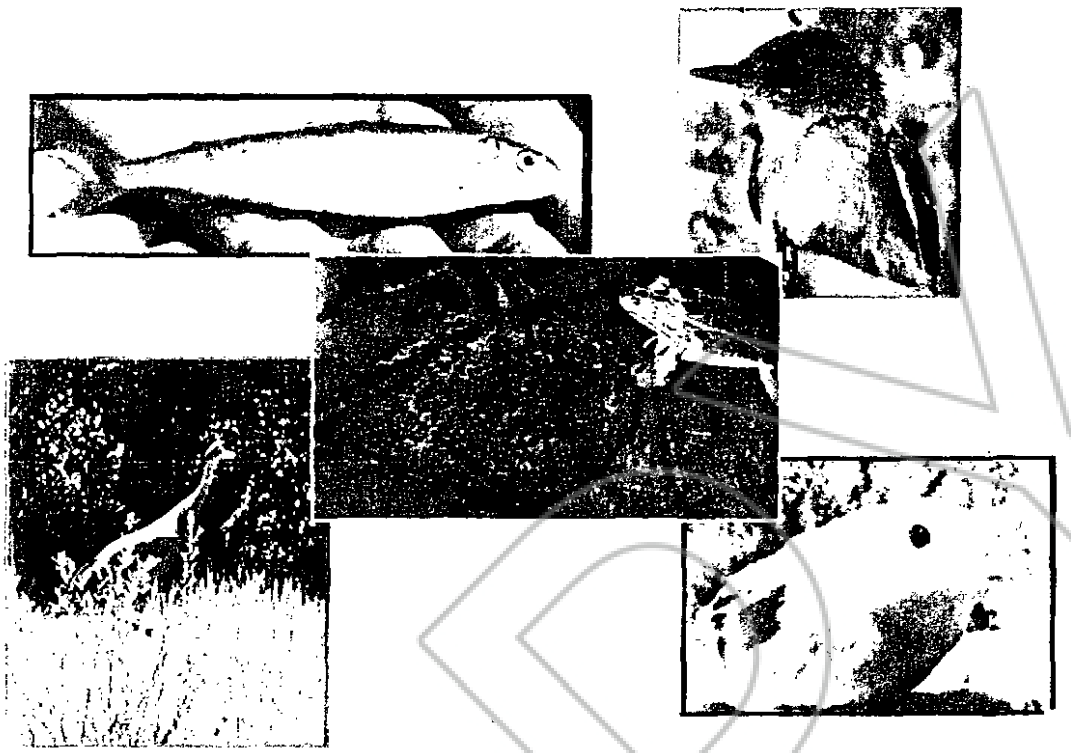


Figure 1.1-7. Photos of species native to the upper Carson River that may benefit from riparian and wetland restoration at the River Fork Ranch. Clockwise from upper right: willow flycatcher, northern leopard frog guarding an egg mass, yellow warbler, greater sandhill crane, mountain whitefish.

While agricultural lands support a variety of wet-meadow species, such as white-faced ibis, savannah sparrow, long-billed curlew, and probably some butterflies, such as the Carson Valley wood nymph, the loss of other wetland and riparian habitats has likely negatively affected other species, such as the willow flycatcher, yellow-breasted chat, western bluebird, native amphibian species, and the western pond turtle. Wet meadows on the River Fork Ranch were found to contain host plants for the larval stages of the Carson Valley silverspot, a butterfly that is on the decline and has been confined to isolated populations on the upper Carson River (The Nature Conservancy, 2007), thus the ranch contains potential habitat that could be enhanced for this species. Because the River Fork Ranch is already host to a diversity of native species that are declining from habitat loss, restoration and enhancement efforts to restore a landscape mosaic would be most beneficial on this section of river, to preserve and expand the remnant populations that still exist in the area. The expansion of wetland, meadow, and forest habitat would also likely attract declining species that may be found just outside the ranch boundary, such as the Carson Valley silverspot, greater sandhill crane, or tree swallow, to name a few examples, by expanding suitable habitat for these species (Figure 1.1-7).

2. OPPORTUNITIES AND GOALS OF ECOSYSTEM RESTORATION

Eight restoration elements are needed to enhance River Fork Ranch riverine\wetland ecosystem:

1. ***Legal Protection***. Legal protection must be in place to conserve land and water resources for the benefit of the ecosystem. Currently, a large, important area of high-value habitat is protected by property and water rights acquisition. Expanding the protected land area and additional water would greatly enhance benefits to the ecosystem.

2. ***Space.*** Channel migration, avulsion, erosion, scour, and flooding are natural processes and are part of ecosystem processes. As a society we can continually work to control nature, at great financial and ecological costs, or we can learn methods to accept these natural processes. To manage a river system to sustain the ecosystem and our biological heritage, a river must have adequate space to allow natural dynamics. In addition, this space provides a buffer to shield riparian habitats and wildlife from urban and developed areas.

3. ***Natural Hydrologic Patterns.*** Organisms inhabiting riverine systems have adapted to and are frequently dependant upon flow patterns that have existed for a protracted time period in a drainage system. Significant alteration to magnitude, timing, frequency, duration, and rate of change might have negative consequences for these organisms. To maintain the native ecosystem, river managers must work to mimic the key attributes of the natural river.

4. ***Continuity.*** Healthy rivers must have some degree of physical continuity up and down the river corridor. Continuity is broken by dams, diversions, concrete walls, and other structures that obstruct the ability of organisms to migrate up and down the river.

5. ***Connectivity***. In the western United States, rivers, in part, support approximately 80% of the areas biodiversity, but comprise only 1.5% of the area. To sustain this contribution to the areas ecology, it is necessary to sustain the connection between the river, riparian areas, floodplain, upland-transition, uplands and other habitat types. Urban, highway, and other developments act to cutoff and fragment riverine habitat types from other types, thereby reducing the ecological benefits of the river. To restore and preserve our biological heritage, connection between different habitat types is critical.

6. ***Dynamic.*** Rivers are systems that natural experience high levels of disturbance. They are systems that transport water and sediment down slope, and are driven by gravity. In a variable climate, the level of disturbance from year to year is also variable, but persistent. Therefore, the biota within the system has adapted to and sometimes dependent on the disturbance regime.

7. ***Water Quality.*** Rivers have some capacity to clean and purify water, yet in some cases water pollution is introduced at a level that exceeds the river's cleaning capacity. Water

quality is and important element of the ecosystem in that it can cause severe damage to plants, birds, fish, and all aquatic life.

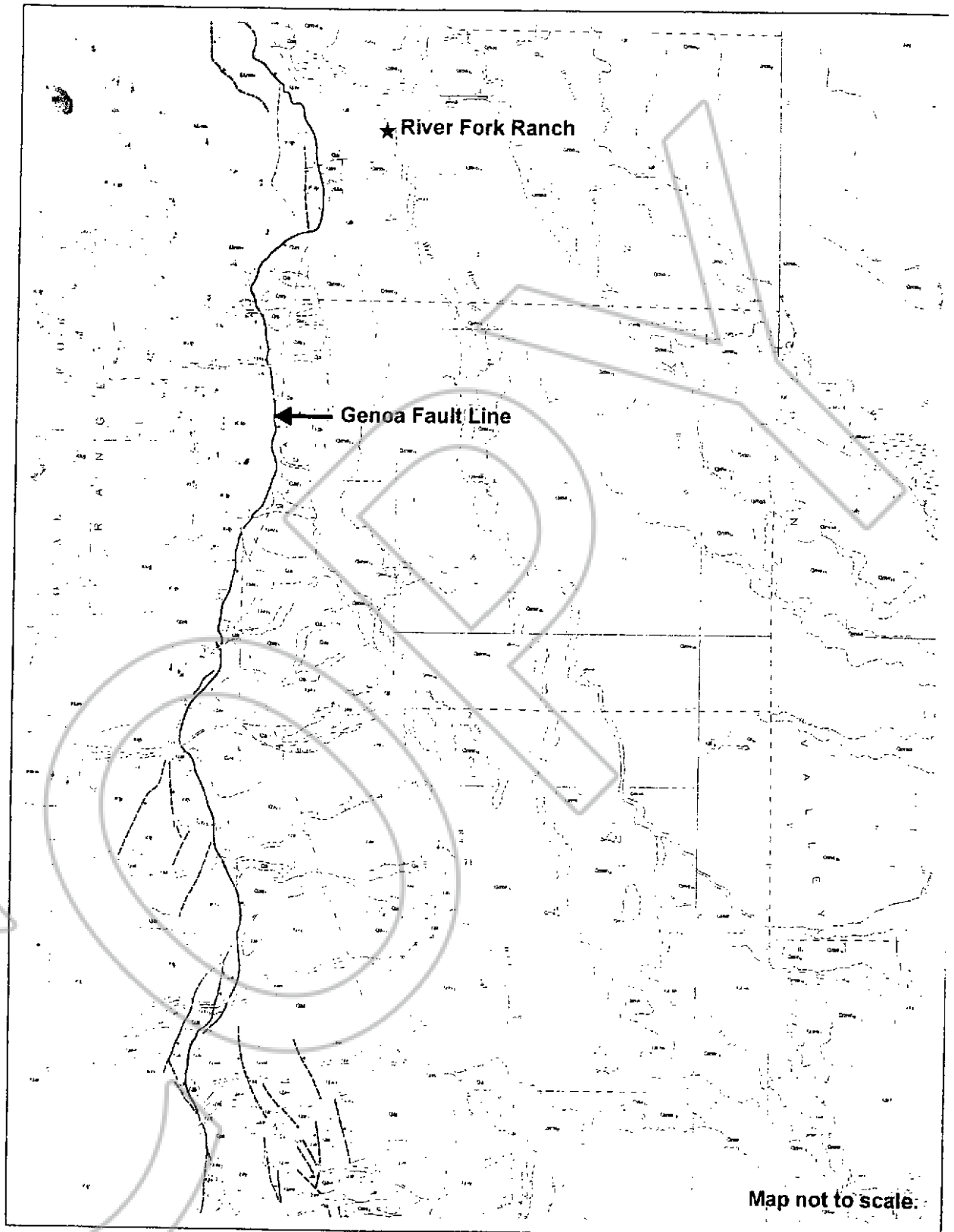
8. ***Complexity***. Dynamic and intact riverine ecosystems are a mosaic of complex habitat types. The aquatic environment is a series of riffles, pools, chutes, runs, undercut banks, woody debris, roots, rocks etc. This complexity provides a diversity of habitat types that supports an abundant and rich biological aquatic community. The same conditions exist in the terrestrial environment; that is, the dynamic system results in multiple age classes of trees, shrubs, grasses, and forbs. It also creates complex abiotic conditions such as a gradient of soil moisture from wet to dry, changing depth to ground water level—shallow near the river and deeper away from the river—and different soil types that range from cobble-gravel-sand to silt and clays. These abiotic gradients create diverse and complex habitat types that support a rich and abundant terrestrial community.

The objective of the River Fork Ranch restoration was to determine the geomorphic processes that drive the system and created the rich, abundant habitat types that support a biological community and work toward restoring these processes. OBEC used a historic approach to determine the natural, functioning river pattern and processes and hence used this information to formulate a restoration plan.

2.1 Restore Anastomosing River Channel Pattern

The River Fork Ranch reach of the Carson River and tributaries have historically exhibited an anastomosing river pattern. This pattern is primarily due to the Genoa Fault (Figure 2.1-1), which was active in recent times (last two measured events occurred approximately 550 and 2100 years before present) and has one of the highest slip rates in the Basin and Range Province (2 – 3 mm/yr) (Ramelli et al., 1999). The highly active fault has created a low area along the Genoa Fault and a flat, low energy environment in the River Fork Ranch reach of the Carson drainage. After a faulting event, the river and tributaries avulsed toward the fault, which lies just west of the ranch. As a result, the East Fork, West Fork, and Brockliss Slough converge and divide into many sinuous channels in the area of River Fork Ranch (Peakall, 1998) (Figure 1.1-5).

Over historic time, flood hazard reduction, transportation, and agricultural activities have worked to change the river through River Fork Ranch. These changes are described in section 1.1 of this report. Designers will work to restore the divided, anastomosing channel system that once existed on River Fork Ranch.



River Fork Ranch

Genoa Fault Lines

Base Map-Preliminary Geologic Map of the Minden Quadrangle, Nevada

http://www.nbmg.unr.edu/

Figure 2.1-1

2.2 Reconnect the Stream Channels to the Floodplain

Designers will formulate plans to undue the channel entrenchment which was due to dredging of the channel. Also, they will work to reconnect the river channels to the floodplain.

2.2.1 Raise channel beds

River channel beds can be raised by adding fill, and in particular placing grade control structures (cobble-gravel size rock), at select locations along the existing channels. The fill will narrow the channels bring the bed level to a point where flood water flows overbank and spreads across the floodplain. The grade control structures will prevent down cutting on the channel.

2.2.2 Remove earthen berms

Dredge piles along the West Fork and East Brockliss Slough act as dikes and prevent some moderate-level flows from going onto the floodplain. These berms should be removed to reconnect the channels to the floodplain. The soil in these berms could be used to fill the channels or make special habitat types.

2.3 Increase Diversity and Area of Wetlands

The loss of spatial extent and diversity of wetlands and other habitat types across the Ranch has likely resulted in the loss of species diversity. Channelization of the Carson River for the purposes of creating cattle pasture and agricultural production resulted in a decrease in acreage of habitat for native birds, mammals and plants. Restoring diversity of habitats across the Ranch will result in increased habitat quantity, habitat quality and greater species diversity. A variety of studies have shown that there is a positive relationship between increasing complexity and diversity of vegetation and increasing richness and diversity for birds (MacArthur and MacArthur, 1961; Tomoff, 1974; Hurlbert, 2004), reptiles (Hadden and Westbrooke, 1996; Driscoll, 2004), mammals (August, 1983) and invertebrates (Kennedy et al., 2002).

Wetlands and features enhanced during restoration will contribute to overall habitat diversity and provide critical ingredients for healthy ecosystems. The decline of wetland and riparian birds such as the willow flycatcher and amphibians such as the leopard frog are a direct result of riparian forest and wetland loss (Ohmart, 1994). Restoration of complex riparian habitat types has been shown to substantially increase populations of wetland dependent species. For example, restoration of the Provo River wetlands resulted in a doubling of Columbia spotted frog egg masses (Utah Division of Wildlife Resources, 2005 unpublished data).

2.4 Increase Diversity and Area of Riparian Shrub and Tree Community

As with wetlands, the reduction of spatial extent and quality of riparian habitat types across the Ranch has likely resulted in the loss of species diversity. Along riparian corridors the highest quality habitat is provided by complex, diverse vegetation with multiple tree and shrub canopy layers and ground cover comprised of a species rich graminoid and forb community. In desert riparian areas, trees provide important canopy cover, nesting, perching and foraging habitat for birds, and a comparison study of various

desert riparian vegetation associations found cottonwood-willow forests to support the highest diversity of bird species throughout the year (England et al., 1984). Studies of breeding birds show nest density to be greater in structurally complex habitats populated by plants such as water birch (*Betula occidentalis*), black oak (*Quercus kelloggii*), big sagebrush (*Artemisia tridentata*), willows (*Salix exigua, S. laevigata, S. lasiolepis* or *S. lucida*), black cottonwood (*Populus trichocarpa*) and Jeffrey pine (*Pinus jeffreyi*) (Heath and Ballard, 2003). In contrast bird species tend not to favor single-canopy, monotypic stands of vegetation such as saltcedar (*Tamarix* spp.) or arrowweed (*Pluchea* spp.) (Meents et al., 1984).

2.5 Improve Health, Diversity and Vigor of Vegetation Communities

At River Fork Ranch, much of the diverse habitats have been converted to cattle grazing pastures. Removing cattle grazing will be a first step to restoring vegetation communities to an ecologically healthy state. Cattle grazing results in the removal of young willows, forbs and grasses and from plant communities and ultimately a reduction in species diversity will follow.

Critical to the success of restoration projects is the implementation of active revegetation efforts. There is much discussion in the restoration science community concerning 'passive' restoration where the hope is that if some biological situation is repaired, such as rewatering a spring, then the native vegetation will simply grow. This suggestion is based upon ideas that vegetation succession is an orderly, linear process and that management actions will result in predictable plant assemblages (Clements, 1916; Dyksterhuis, 1949). Current work in plant community ecology shows that plant community dynamics may be unpredictable and simply removing a disturbance or rewatering a spring may not reverse changes in vegetation (Laycock, 1991; Turner et al., unpublished data). The introduction of aggressive nonnative weeds and animals, the extirpation of native plants and animals and the removal of natural disturbance regimes all contribute to unpredictable and sometimes undesirable outcomes of passive restoration.

2.6 Weed Treatments

Prior to implementing restoration plantings, vigorous efforts should be made to eliminate or reduce weed populations to acceptable levels which will help insure successful revegetation. Plant species such as saltcedar (*Tamarix ramosissima*), Russian knapweed (*Acroptilon repens*) and other noxious weed species need to be controlled and habitat restoration efforts will benefit from these control efforts. While it may not be possible to eliminate some weedy species such as reed canary grass (*Phalaris arundinacea*) and cheatgrass (*Bromus tectorum*), their presence may be controlled and kept at an acceptable level.

3. CONCEPTUAL ECOSYSTEM RESTORATION PLAN

The conceptual ecosystem restoration plan calls for modifying the East Brockliss Slough and moving a section of the West Fork (Figure 3.0-1). These modifications will help restore the historic channel pattern and floodplain wetlands.

In concert with exploring, selecting, and implementing various channel restoration and wetland features, the design team must incorporate any constraints identified in an evaluation of Ranch water rights, irrigation agreements, and goals identified for the living ranch components of the Ranch. When initial layouts are identified, the concepts should be vetted to insure compliance with State Engineer, Federal Water Master, local Ditch Masters, local conservation districts, NRCS, COE, and neighboring ranch and farming operators. Engineering studies likely will be required to demonstrate that no adverse impacts will result. The NDOT District II staff, as well as the NDOT Carson City hydrologist/hydraulic staff should be invited to review potential impacts on Genoa Lane. Permit requirements should be investigated and incorporated into designs and schedules

3.1 Changes in the West Fork Channel and East Brockliss Slough

Repeated dredging has resulted in an entrenched and straight West Fork channel through River Fork Ranch. The preliminary restoration plan calls for excavating the floodplain on the property's south side, to make an entrenched floodplain. This will allow for overbank flooding and a riparian zone along the river. Toward the north, the West Fork channel will be turned into a relict channel. The abandoned channel segment will be partially filled to create a hollow and short sections will not be filled, and will be left as oxbow wetlands.

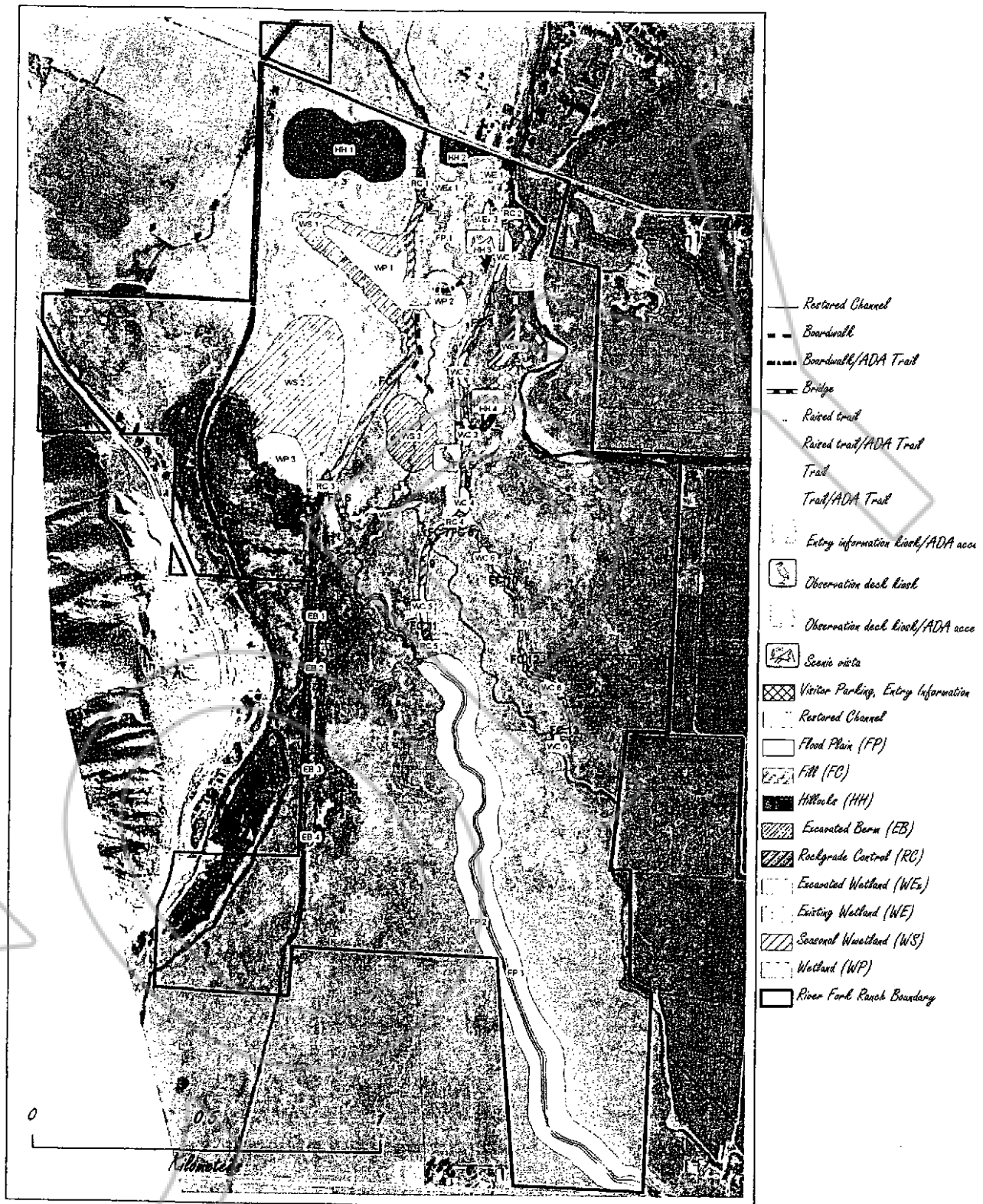
The East Brockliss is not entrenched and thus is connected to the floodplain; however, the channel has been dredged straight, with a dredge pile deposited on the west side. The existing excavated channel is over wide. OBEC recommends using the dredge pile to narrow the channel and form a meandering channel.

3.2 Enhancement to Wetlands

Wetland enhancement will include excavating two areas to create the elevation to expand the seasonal wetlands. The West Fork and East Brockliss will supply seasonal water to these wetlands. Other constructed wetland types will include excavated oxbows and open, abandoned channels that create oxbows.

ATTACHMENT E
Preliminary Design Information

(See 31 page Conservation Action Plan, September, 2007 &
42 page Preliminary Public Access and Ecosystem Restoration Plan, attached)



River Fork Ranch

Preliminary Restoration Design

Otis Bay

Figure 3.0-1

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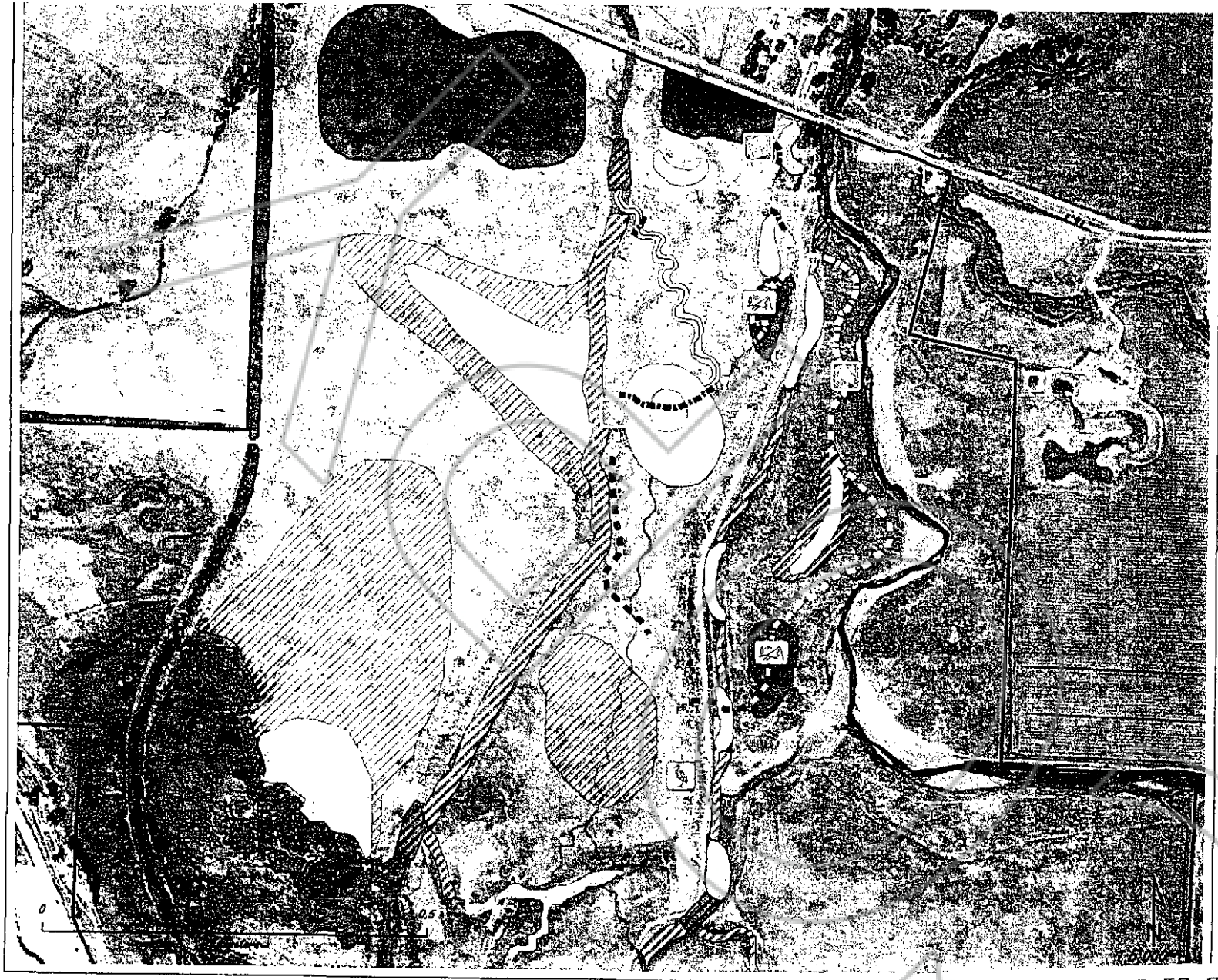

River Fork Ranch

Preliminary Restoration Plan

Trails and Lookouts

- Restored Channel
- Boardwalk
- Boardwalk/ADA trail
- Raised trail
- Raised trail/ADA trail
- Trail
- Trail/ADA trail
- Entry information kiosk/ADA accessible
- Observation deck kiosk
- Observation deck kiosk/ADA accessible
- Scenic vista
- Visitor parking entry information
- Flood Plain
- Hillocks
- Excavated wetland
- Existing wetland
- Seasonal wetland
- Wetland
- Rockgrade Control
- Fill
- Restored Channel
- Island
- River Fork Ranch Boundary

Otis

4. CONCEPTUAL ADMINISTRATIVE AND VISITOR FACILITIES PLAN

4.1 General Background, Planning and Permitting

4.1.1 Background Data

The site is situated within the jurisdiction of Douglas County. Various planning and permitting requirements will apply to all non-farm activities. Initially the design team specialists will investigate the various planning and development standards that apply to this location. Title covenants and water rights data must be investigated since both will aid in identification of opportunities and constraints. All record plans regarding the existing residence and appurtenances will be secured and evaluated. All FEMA data will be secured and evaluated. NDOT staff will be engaged to learn of any pending changes to Genoa Lane, and their anticipated requirements for an access encroachment permit. All servicing utilities will be contacted to secure confirmation of existing and alternatives for various services. TNC should define their administrative/maintenance goals. For example, is permanent office space desired? Is a full-time maintenance staff anticipated? This background guidance will guide the design team in their development of alternatives.

4.1.2 Client & Stakeholders Goals

After all background data and applicable standards have been investigated by team specialists, it is recommended that a design charette be convened. In addition the TNC and their design team, all interested stakeholders should be invited to participate. The several objectives of the design charette include achieving consensus on the fundamental elements of a Master Plan and the associated architectural theme. Implementation phasing goals are also critical. These evolve as functions of technical feasibility, funding, and management objectives.

Based upon our earlier involvement, we anticipate continued interest in a ranching theme consistent with local styles. Decisions are needed regarding contemporary vs. historical themes. If historical, choices are required as to what specific period. A Master Plan may be expected to evolve as client/stakeholder goals are woven with agency planning. Additional phase-specific charettes likely will be warranted.

4.1.3 Douglas County Requirements

After background data is evaluated and goals are identified, it is necessary to engage Douglas County Planning to ascertain their requirements. These may be expected to include a partial zone change, compliance with their existing planning for the area, Special Use Permits, and associated public meetings etc. County grading and building permit requirements will also apply.

4.2 Crawford Ranch Facilities

4.2.1 Building Code Issues

Utilization of the residence for other than residential occupancy likely will require permitting by Douglas County. It is possible that the county would grant an exemption from commercial code standards, however, this is unlikely. Private fire and liability

insurance coverage could also trigger commercial code compliance. An economic analysis is recommended to compare costs of mitigation of the existing residence vs. sale, removal, and tailored construction of desired improvements.

To comply with Douglas County requirements, an architect should be included on the design team. The scope of these services will depend on the County requirements relative to changing the use of the residence to commercial office and/or visitor center. The County likely has considerable discretion. Requirements could include fire safety and ADA compliance. Additionally, should stakeholders wish to continue support for a more classic historical Douglas County working ranch architectural theme, the architect could evaluate and provide alternatives for façade modifications. Again, an economic analysis is suggested for any related actions. Comparisons should include the full spectrum including mitigation and façade vs. sale and removal of the structures, and construction of tailored themed alternates.

4.2.2 Flood Exposure

It is clear that flood exposure mitigation must be included in any future plans for either mitigation of the Crawford Ranch facilities and/or replacement or supplemental facilities. The Crawford residence is a recently constructed, two-story frame structure. During two recent flood events, floodwater invaded the ground floor elevations. It is possible that FEMA has made a formal designation. If not, a technical study should be performed to determine the elevation of the 100-year flood event at this location (Figure 4.2-1). Local Building Code requirements will apply. Common practice requires that the residence ground floor elevation should be at least one-foot above the 100-year flood elevation. Raising the structure, without raising the general leveled pad serving the residence, detached garage, and outbuildings is likely not practical. It is believed that the structure would need to be elevated at least five feet to achieve reasonable flood protection. Raising the structure alone will increase wind loadings and likely increase earthquake exposure. The attached garage is apparently slab-on-grade construction and therefore must be detached and then re-attached on a new slab.

River Fork Ranch

Topography

Otis Bay

Figure 4.2-1

1:9,000

The detached garage is constructed either on a perimeter footing and/or piers, or on a thickened-edge slab. In either event, the garage would need to be detached from footings, and a temporary steel or timber frame fabricated to allow removal and relocation at the new grades. A cost analysis should be done to compare reconstruction vs. salvage.

4.2.3 County/FEMA Requirements

Raising the full pad serving the improvements, all of which lie within the flood zone, will require a study and report demonstrating that such action would raise the existing 100-year flood elevation by less than one-foot. This would require Douglas County approval and could. In a worst case, a FEMA LOMR would be required (a technically supported petition for formal FEMA Letter of Map Amendment).

4.2.4 Sewer/Water

Investigate the domestic water source and sewage disposal method. It is possible that the residence is served with commercial water and sewer mains along the adjacent Genoa Lane. If so, it is likely that these services comply with code.

If the residence is served with an adjacent private water well and leach field, they do not comply with health codes (both must be above the 100-year flood elevation). If there is a domestic private well and on-site sewage disposal system, raising the entire zone likely would allow modification of the well to meet code. It is also likely that the sewage system could be replaced onsite as well. Another alternative would be investigating connection to a possible public sewer force main along Genoa Lane. If commercial code compliance is required, mitigations issues for the existing residence would include fire and health code. An ADA restroom could be required. An ADA rated visitor restroom likely will be required adjacent to visitor parking. After investigation of alternatives, choices can be made as to whether water is provided for fountains and/or the restroom. The restroom location, size, configuration, and sewage disposal method will evolve with the Master Plan and Preliminary Design process.

4.2.5 Other Utilities

Power, telephone, Internet, and heating services must be investigated as to present conditions, alternatives, and selected adaptations and/or upgrades.

4.3 Access and Parking

NDOT will require a formal access encroachment permit on Genoa Lane. Normally NDOT would ask for a minimal traffic report describing anticipated traffic peak count, types of vehicles, and known activity time concentrations. Douglas County may accept such a report or impose other requirements in support of planning, zoning, and/or permits. Parking issues include code compliance for commercial conversion of the residence for use either as an administrative field office and/or Visitor Center, as well as accommodation of visitors. Both include ADA compliance. Contemporary parking requirements to serve visitors include accommodation for buses and RVs. Actual space count, by type, may be determined as the Master Plan evolves and as may be dictated by the County.

4.4 Ranch Maintenance Facilities

Facilities are required for storage and maintenance of Ranch service and operational vehicles. Additionally, storage facilities are necessary for various Ranch supplies. All facilities should be designed for year-round use and conform to the chosen architectural theme for the Ranch. These facilities should be concentrated and separated from the visitor access and parking area for safety and security reasons. If warranted, a maintenance field office may be needed.

4.5 Ranch Trail System

All trails, bridges, and boardwalk should be designed to comply with the various codes relative to visitor safety. Additionally, trail width, curve radii, grades, and structures should be designed to serve Ranch service and maintenance vehicles. These are commonly a combination of quads with trailers, golf-cart units, etc. Access should also be provided and planned for the occasional use of tractors and similar heavier operational and maintenance equipment.

4.6 Interpretive Plan for Visitors

A trail head should be situated adjacent to the visitor parking. A kiosk with comprehensive signage should be placed at the trailhead. Alternatively, a modest visitor center could be used. The exhibits, in either case, should include a full site map with 'you-are-here' notations, descriptions of the various features and experiences available at the Ranch. Brochures should be provided for a site map, and others to describe details of plants and animals visitors may encounter on a visit. Historic ranching equipment could be integrated as static exhibits. The popular Bartley Ranch in Reno is an example of a roughly similar concept. Throughout the trail system, durable placards should be used to identify specimen plants. At habitat viewpoints, similar details should be provided to describe the various bird and animal life that visitors may anticipate encountering. If the 'living ranch' or 'working ranch' concept is incorporated into the Master Plan, interpretive displays can be provided to comprehensively describe the process in the various seasons. Similar opportunities exist to interpret 'living river', 'aquatic habitat', etc.

The evolving content of a client-team-stakeholder generated Master Plan will provide direction and specifics for the full array of improvements and visitor accommodations.

4.6.1 Trails

The trail heads begin at the parking area adjacent to the visitor center. The trails are designed as nested loops with viewing opportunities of different habitat types along the way. Structural features will enhance opportunities by providing hillock vista, raised trails, boardwalks, decks, and a viewing tower.

5. OBJECTIVES OF VISITOR USE PLAN

River Fork Ranch provides an opportunity for the public to learn about the ecology of Carson Valley and the Basin and Range. The ranch harbors many species of birds, amphibians, and reptiles that are not common in the region. In addition, the restored ranch could exhibit special habitat types such as ox bow wetlands, anastomosing channels, wet meadows and tule marsh; therefore the primary recreation objectives are as follows:

1. Provide an opportunity for environmental education.
2. Explain the Ranch's history purpose and ecosystem.
3. Make available an ADA nature trail loop that will exhibit the main ecosystem features.
4. Connect a longer nature path that is available for more adventurous people.
5. Align the trail so visitors can view wet meadows, dry meadows, ox bow wetlands, perennial cattail/ bull rush wetlands, open water wetlands, river channel, slough channel, riparian tree forest, riparian shrub forest, hillocks, and area vistas.
6. Provide a trail with interesting and educational viewing opportunities. These include earthen trails, raised trails, vista from hillocks, bridges, boardwalks, viewing desk, viewing tower, and information kiosks.

5.1 Driveway and Parking

Visitors will enter near the driveway of the existing house and pull into a parking lot. On one side of the lot will be a visitor center and on another side will be the maintenance headquarters.

5.2 Entry and Reception

As visitors leave the parking lot they have two choices: 1. enter the visitor center, or 2. walk to the trailhead kiosk. The kiosk will contain information about River Fork Ranch, the trail, and the ecology.

5.3 Education

Recreation development provides many opportunities for outdoor education. The visitor center can act as a gathering place for individuals and groups to collect literature and receive briefings. As visitors start on the trail, TNC can provide informational kiosks, panels, and signs. In addition, on the decks and tower, information panels can educate visitors about the ranch's history, geography, geology, geomorphology, and ecology.

5.4 Trails

Designers worked to concentrate ecological features along the ADA-compliant short loop, thereby giving visitors who use the ADA loop an opportunity to experience the full range of landscape elements that occur on the ranch. The ADA short loop will also include a boardwalk bridge to the east where visitors can view the East Fork River channel. This arm of the ADA trail will be the first section of a the longer nature trail; however, disabled visitors will only travel out and back to the observation deck.

OBEC designers used a combination of on-grade earthen trails, raised earthen trails, and boardwalks to allow visitors to experience the ranch's landscape elements in a controlled, safe fashion. The trail system consists of two nested loops: a short ADA-compliant loop and a longer rustic nature loop. Along these loops, designers planed for three types of viewing opportunities: 1. Viewing tower (one); 2. Observation decks (two); and 3. Scenic vistas (two). OBEC also plans for educational information along the trail system such as kiosks, information panels, and signs.

6. MONITORING RECOMMENDATIONS

6.1 Introduction

Monitoring in the context of restoration is critical for a variety of reasons. Judging relative success of a project may only be done if monitoring data have been collected prior to and after the restoration treatments have been applied. Understanding what remedial actions or adaptive management strategies need to be implemented in order to correct situations requires that rigorous data have been collected. Tracking and following population trends for species of interest such as the northern leopard frog and willow flycatcher require that statistically valid and well thought out monitoring plans are implemented.

Monitoring protocols should be implemented using the most recent methods accepted by professionals from the particular field. Statistical rigor should be at the core of all designs so that future projects and adaptive management strategies may benefit from restoration activities at River Fork Ranch.

Details are presented below for a variety of plants and animals. Some baseline information has been collected at River Fork Ranch. Prior to implementation of restoration activities, full inventories of all species and groups should be performed.

6.2 Biological Monitoring

6.2.1 Birds

6.2.1.1 Summary

A substantial avian data set starting in 2002 for River Fork Ranch has been created and maintained by the Great Basin Bird Observatory (GBBO). Otis Bay routinely participates in avian monitoring at River Fork Ranch and will continue this participation. This present proposal is for funding needed to supplement efforts by GBBO with monitoring efforts that are tailored to address the results of river restoration. Baseline avian monitoring will be completed within River Fork Ranch. In addition, post-restoration monitoring will be continued within River Fork Ranch. Data from multiple years of monitoring can be used to determine trends in avian populations over time as restoration efforts progress.

The primary elements of avian monitoring include:

- Point count surveys for breeding birds to determine baseline species composition will be conducted within River Fork Ranch, following methods outlined in the Nevada Bird Count Protocol by the Great Basin Bird Observatory (GBBO). Additional transects along the Carson River may also be counted to monitor non-restoration sites.
- Intensive area searches and mapping of breeding bird territories over a smaller area, using methods outlined in GBBO's Area Searches and Spot Mapping protocol, to monitor active restoration efforts at River Fork Ranch.
- Data entry, GIS creation, and summary report.

6.2.1.2 Methods

Point Count Surveys

- A transect for River Fork Ranch has been established.
- The transect will be completed by a point counter experienced in point count protocol during the breeding bird season (June).
- Completed transect counts should be replicated 2-3 times during the season.
- All bird species seen and heard will be recorded, and breeding evidence will be noted.

Area Searches

- This survey is to be completed by an observer that is not conducting point counts to avoid observer bias.
- Searches for bird nests and maps of breeding bird territories will be generated over 8-10 visits to the area search plots on restoration sites Over time, breeding bird territory size and numbers can be compared to monitor effects of riparian restoration activities at these sites.

6.2.2 Mammals

6.2.2.1 Summary

Riparian restoration would increase vegetation coverage which provides microhabitat suitable for increased small mammal populations. However, no studies have been completed to verify the effects due to restoration on small mammal populations. Baseline monitoring at River Fork Ranch will provide information critical to small mammal population deficiencies and may inform the restoration design process by identifying habitat needs and design requirements necessary for increasing small mammal populations. In general, the primary elements of small mammal monitoring include:

- Coordination with a mammologist to determine suitable field studies.
- State permit application.
- Identification of sampling habitats (e.g. agricultural field, cottonwood corridor, wetland meadow, upland shrub habitat, etc.).
- Implementation of field study before and after restoration to monitor how small mammal populations are responding to the restoration effort.
- Data entry and summary report.

6.2.2.2 Methods

Capture, mark and release surveys

- Develop a study protocol with a trained mammologist. Elements of the study design should include the identification of sampling habitats, choice of the trap grid design (e.g. circular, rectangular, or linear), determination of trap type and number to be used per grid, determination of the number of sample habitats to trap in per restoration site so that a statistically significant sample size will be generated, choice of marking method (if any), season of survey, and data sheet design.
- Training of field crew in safe animal handling techniques and survey methods.
- All species caught in traps will be identified, possibly marked for a recapture study, released, and data will be recorded.

Track plates and camera monitoring

- In addition to trapping, track plates can also be used to note the presence/absence of mammals in an area. Areas may be baited to attract animals, and the plate can be located in such a way that any approaching animal will walk on the plate, thus leaving its track marks behind. Track plates are a relatively non-invasive way of surveying, as no animal handling is needed, but not all tracks may be identified down to species level or individuals.
- Motion and/or heat activated cameras may be used with track plates to try and capture photos of any animals using the area.
- All data should be recorded once the mammal tracks/photos have been identified.

6.2.3 Bat Monitoring

6.2.3.1 Summary

Little is known about bat species use along the Carson River. Wetland habitats created from restoration projects likely will provide good forage sites for multiple bat species. Monitoring of bats at River Fork Ranch will be used to catalogue the bat species using the river corridor. Multiple survey techniques will be used so that bat species that remain elusive with particular survey methods may still be documented. Coordination with a current bat biologist (e.g. with NDOW) will be necessary for study design creation and implementation. Necessary permits may need to be obtained from NDOW.

The primary elements of bat monitoring include:

- Coordination with a qualified bat biologist.
- Safety training in animal handling techniques.
- Mist-netting or harp netting along streams or wetlands where bats are likely to fly low for forage.
- Passive detection of bat species by their unique echolocation calls using ultrasonic bat detection equipment and associated software programs such as Anabat or Sonobat.
- Recordings of bat species detected by survey method, with notes on local climate conditions and habitats where bats were found.
- Data entry and creation of a spreadsheet and summary report.

6.2.3.2 Methods

Mist-netting

- Identification of net sites along streams or wetlands that can be monitored yearly.
- Nets should be set at least 30m apart.
- Mist-net sessions are run at night, from just past sunset and for 5-6 hours after.
- Mist-nets should be located near water, in darker areas hidden by moonlight.
- Nets are checked every 20 minutes.
- Caught bats are removed from the nets and identified to species. Data generated may include gender, reproductive status, forearm length, presence of parasites, direction of flight, etc. A marker (e.g. necklace with a bird band) will be put on the bat, and the bat will be released.
- A minimum of 3 net sessions at each location should be completed each year.

Harp Net Surveys

- Field protocol follows the mist net protocol with some notable exceptions outlined below.
- These nets may be checked every 30 minutes (where bat captures are numerous) or every 2 hours (at slow sites).
- This trap cannot be set over water, as mist-nets can.
- This trap likely covers smaller areas than mist-nets can, however documentation suggests that capture success is higher with harp traps because bats may more easily detect mist-nets and avoid flying into them.

Passive ultrasonic bat detection

- This survey technique can be conducted concurrent with bat mist-netting activities.
- Standard sites where the ultrasonic bat detector will be used may be set up, so that these sites can be revisited from year to year.
- Foraging bats emitting echolocation calls within the range of the bat detector will be recorded using specialized software programs.
- This survey technique does not interfere with natural bat behavior and movements.

6.2.4 Herpetofauna

6.2.4.1 Summary

Baseline monitoring within River Fork Ranch is necessary in order to quantify and support future restoration actions. Visual encounter surveys for amphibians and the western pond turtle were conducted during the spring and summer of 2002 and 2003. Any trapping or collection studies require a current scientific collection permit with the state of Nevada.

The primary elements of herpetological monitoring include:

- Visual encounter surveys using aerial photos to map observation locations.
- Auditory night surveys for choruses at breeding ponds.
- Pit/funnel trapping to monitor adult movements around ponds during both the breeding season (spring/early summer) and post-metamorph dispersal (late summer/fall).
- Tadpole dipnet surveys at breeding ponds.
- Collection of any dead amphibians encountered to send to the National Wildlife Health Center for disease analysis.
- Data entry, creating a GIS, and summary report.

Multiple survey methods are employed to give a complete set of species data, since single survey methods alone may be biased towards certain species (e.g. auditory surveys may generate data for chorus frogs, but not toads). All surveys will generate relative abundance data that can be compared over the years as wetland restoration activities progress.

6.2.4.2 Methods

Visual Encounter Surveys

- These surveys should be completed during spring emergence (mid-March through April) when frogs such as the northern leopard frog and Pacific chorus frog are actively breeding and may continue through May for late breeders such as the western toad. Surveys in the late summer and early fall may be completed to note metamorph and adult dispersal patterns to hibernation sites.
- Individual frogs and egg masses will be located, counted, and documented.
- Wetlands and river edges will be the areas of focus.

Auditory Night Surveys

- These surveys should be completed during the breeding season for vocal chorusing species (e.g. Pacific chorus frog, leopard frog, Great Basin spadefoot toad). This survey technique is useful for gathering data for secretive species such as chorus frogs and spadefoot toads, which may be difficult to detect visually due to their nocturnal habits.
- Wetlands and river edges will be visited a minimum of 3 times each year and all singing frog species will be identified and given estimated abundances (singing males only). Tape playback may be used to encourage calling.
- Nighttime road surveys may also be conducted in addition to auditory surveys during warm rains. All amphibians seen crossing the road near wetlands on designated transects will be identified and recorded on data sheets.

Pit-trap/Funnel Traps

- Pit-traps may be set up around identified wetland restoration sites to monitor terrestrial habitat use by adult frogs and their relative abundances before and after wetland creation.
- Trap times should coincide with the two main periods of dispersal to and away from ponds, including spring breeding and fall juvenile frog dispersal.
- Descriptions of terrestrial habitats where frogs are trapped may be useful for future wetland restoration designs.

Dipnet Surveys

- Randomized sampling sites will be set up prior to surveys in wetlands and river edges.
- Triple replicate standardized net sweeps may be used to sample for tadpoles, which will be identified and counted to give a relative abundance estimate.

Dead Amphibian Collection

- Amphibian diseases, such as chytrid, are still being mapped out for this state. If two or more dead frogs of one species are found, they may be sent to the National Wildlife Health Center in Wisconsin for disease screening.
- Copies of laboratory reports will be sent to NDOW and coordinating agencies.

6.2.5 Fish

6.2.5.1 Summary

Aquatic habitat types beneficial for fish will be created in the Carson River channel during the first phase of restoration at River Fork Ranch. As new meanders are added and instream habitats including riffles, pools, and slow backwater areas with variable substrates are added or evolve over time with restoration efforts, native fish populations are expected to increase. Fish monitoring, coordinated with a federal (FWS) or state (NDOW) agency that is qualified to conduct fish surveys will be completed to monitor relative fish abundances by species and age class to note any fish population changes at River Fork Ranch.

The primary elements of fish monitoring include:

- Coordination with FWS and/or NDOW and state fish monitoring protocols.
- Safety training.
- Electroshock surveys of fish inhabiting stream waters.

6.2.5.2 Methods

Electroshock Surveys

- Identification of representative stream reaches to survey, which include a variety of instream habitats (e.g. stream, pool, and riffle segments).
- Use of nets or naturally occurring physical barriers (e.g. riffles) within the stream to bound the survey reach.
- Use of an electroshocker to temporarily stun fish within the sampled reach.
- Capture of stunned fish for data processing (e.g. species identification, length and weight measurements, etc.).
- Return of fish to the stream.
- General bank habitat descriptions (e.g. canopy cover, woody debris, bank slope, bank stability, substrate, etc.).
- Equipment used may include: chest waders, rubber gloves, nets with insulated handles, seines, electroshock equipment, boat, buckets, scale, ruler, polarized sunglasses, field guides, jars and labels for voucher specimens, 10% buffered formalin, tape measure, GPS unit, and waterproof data sheets/notebook.

6.2.6 Invertebrates

6.2.6.1 Summary

Aquatic invertebrate species composition in directly related to water quality and aquatic habitat quality. Continued habitat restoration along the Carson River is expected to result in an increase in aquatic habitat quality. Macroinvertebrate samples were collected by Otis Bay during the summer of 2003 along the middle Carson River, including River Fork Ranch. The collection of pre-restoration aquatic invertebrate data at River Fork Ranch will provide data necessary to verify this assumption and will also guide future restoration efforts. This data will assist in the determination of missing components of the riparian ecosystem food chain and inform future restoration design by providing information needed to determine target aquatic habitats, target aquatic species, and, channel design parameters. Post-restoration aquatic invertebrate data obtained from the

River Fork Ranch section of the Carson River will aid in quantifying the effects of restoration

Wet meadows on the River Fork Ranch were found to contain host plants for the larval stages of the Carson Valley silverspot, a butterfly that is on the decline and has been confined to isolated populations on the upper Carson River (The Nature Conservancy, 2007), thus the ranch contains potential habitat that could be enhanced for this species. Although species specific surveys for the Carson Valley silverspot have been completed by University of Nevada, Reno, general baseline terrestrial invertebrate surveys for River Fork Ranch have yet to be completed. The creation of suitable habitat for the Carson Valley silverspot and other sensitive insect species through restoration may be monitored through baseline and post-restoration terrestrial invertebrate surveys.

6.2.6.2 Methods

Aquatic Macroinvertebrate Sampling

- Kick net or Surber sampling.
- Channel and bank sweep sampling.
- Artificial substrate sampling.

Terrestrial Invertebrate Sampling

- Malaise Traps
- Ultraviolet light trap surveys
- Spot netting

6.2.7 Plants

General maps of existing major vegetation types have been created for River Fork Ranch as part of initial ecological assessments. Finer resolution surveying will be required to establish proper monitoring of the vegetation change through time during and after restoration activities.

6.2.7.1 Methods

- Permanent sampling locations will be established within River Fork Ranch for the purposes of vegetation sampling. GPS locations will be recorded for each sampling location.
- Aerial photography, field visits and ArcGIS will be used to establish sampling locations.
- Density plots, line transects and ocular estimation will be used. Cover and abundance will be estimated for each species.
- Photo points should be established and marked and revisited 2-3 times each season
- Distribution of weedy plants should be noted separately from native plants as special treatments may be required to reduce their cover.
- All plants will be identified to species.
- Sufficient sampling will be performed to allow for statistical analyses.

6.3 Physical Monitoring

6.3.1 Introduction

Effective monitoring programs are increasingly considered integral components of the success of restoration projects (Wohl, et al., 2005). Researchers have observed a conspicuous lack of project assessment (Kondolf and Micheli, 1997; Bash and Ryan, 2002). Bernhardt et al. (2005) compiled a database of over 37,000 stream restoration projects carried out within the US since 1990. Only about 10% of the projects in this database incorporated monitoring in their restoration efforts. The absence of monitoring in ecological restoration creates a situation in which restoration professionals are unable to quantify the fulfillment of project goals, or the success of a given restoration design (Giller, 2005; Palmer et al., 2005). Here we propose a physical monitoring program for ecological restoration of the Carson River. Implementation of this, or a similar program, can provide rigorous scientific data to guide project design and adaptive management of the Carson River system. Specific monitoring protocol should be tailored to quantify impairment, set project goals, and measure success. This implies long-term monitoring of physical variables at multiple spatial and temporal scales beginning in the planning phase of the project.

6.3.2 Timing of Physical Monitoring

Deliberate and specific sequencing of monitoring activities is required in order to capture relevant information, and produce timely results.

6.3.2.1 Pre-Project Monitoring

Measuring physical variables prior to restoration establishes baseline data that quantitatively characterizes the impaired system. This sets the stage for informed goal setting, and channel and floodplain design.

6.3.2.2 Post-Project Monitoring

Monitoring of physical variables should begin immediately following restoration, and continue on a planned periodic schedule for the long-term life of the project. In this way, the response of the system to restoration efforts can be tracked, fulfillment of goals can be assessed, and management strategies can be adjusted accordingly.

6.3.3 Scale of Physical Monitoring

In order to enhance the evaluation of monitoring data, it may be necessary to take measurements at a variety of scales. If monitoring only occurs at the scale of the river reach, then the interpretation of that data takes place in a vacuum. By expanding the scale of monitoring, trends at the watershed or river segment scale can provide context for analyzing site specific data from within the project area. Managers will then have the most comprehensive information on which to base restoration decisions.

6.3.4 Proposed Physical Monitoring Activities

6.3.4.1 Watershed Scale

Watershed Land-Use Activities and Geomorphic Processes

Construct a GIS database of land use activities, soil types, known slope instabilities, precipitation patterns, and active faults throughout the basin. Periodically update and track land use changes. Use this data to establish cause and effect relationships for observed responses within the restoration area

Reference Sites

Establish reference reaches throughout the basin, both up and downstream of the restoration area, in pristine and impaired regions. Measure channel geometry, develop stage discharge relationships, and gather stream chemistry and temperature data. Use these measurements to characterize the range of geomorphic expression in the system, analyze at-a-station and downstream hydraulic geometry, and establish trends in physical variables at a broad scale.

6.3.4.2 River Segment Scale

Repeat Aerial Photography

Periodically fly high-resolution digital aerial photography in order to establish a time series of channel response to restoration. Variables to be tracked through this activity would be planform geometry, spatial adjustments of the channel such as meander migration, and the development of floodplain features such as secondary channels, ponds, etc.

Floodplain Trenching

This would primarily be a pre-restoration activity that would establish a historical context for channel migration and floodplain sedimentation. Trenches would ideally be excavated with earth moving equipment in parallel and perpendicular directions to the current course of the river.

Sediment Transport
Monitoring sediment transport at the segment scale would involve construction of a sediment budget. Monitoring sites would be established at feasible locations above, below, and within the restoration area. Samples of bedload and suspended load in transport would be collected throughout a hydrograph in order to develop sediment rating curves, quantify inputs and outputs, and locate potential sources and sinks.

Channel/Floodplain Hydrologic Interactions
The surface and groundwater connectivity of the channel and floodplain would be monitored using a variety of techniques. Grids of monitoring wells distributed across the floodplain and in the channel to monitor head gradients spatially and temporally. Tracer experiments to delineate flowpath locations and lengths, travel times, and characterize surface water/ground water interactions. Inundation and flood flow across the floodplain could be observed through stage recorders in ponds, and pre-programmed digital photographs taken at timed intervals at fixed locations.

6.3.4.3 River Reach Scale
On Site Repeat Photography
Establish benchmarked locations and perform repeat photography. This activity would provide visual representation of on-the-ground changes taking place within the restoration area.

Detailed Channel Topography Surveys
Establish survey control points and monumented cross-sections to allow repeat measurements of cross-section form, longitudinal profile, and water surface elevations. The data could be used to develop stage/discharge relationships, model channel hydraulics, quantify scour and fill, monitor channel slope, pool depths, and longitudinal bedform migration.

Detailed Stream Bed Characterization
A variety of techniques would be employed at several temporal scales in order to characterize and track changes in the composition and distribution of sediment and bedforms in the channel. The methods employed to measure grain size distribution would include point counts of surface deposits, and sieving of subsurface deposits. The methods used to monitor the spatial evolution of bedforms could include total station survey, sonar survey, or other bathymetric measurement device. Sediment mobility at the bedform scale can be monitored using scour chains, tracer gravels, or submersible videography.

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APPENDICES

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River Fork Ranch
Cut and Fill

Feature	Cut (sq ft)	Cut Av. Depth (ft)	Cubic Yards			
Ox Bows	17700	8	5244			
	19400	8	5748			
	30800	8	9126			
Seasonal Wetlands	328000	2	24296			
	936000	2	69333			
	281000	2	20815			
Perenial Wetlands	227000	5.5	46241			
	151000	5.5	30759			
	172000	5.5	35037			
Excavated Floodplain	44200	3	4911			
	1684000	3	187111			
Channel	111000	4.5	18500			
	24600	4.5	4100			
Excavate Existing Berm	6300	3	700			
	10500	3	1167			
	13700	3	1522			
	9400	3	1044			
				4066600	**461222**	2306111

Feature	Fill (sq ft)	Fill Av. Depth (ft)	Cubic Yards			
Grade Control	18100	2	1341			
	6900	2	511			
	20200	2	1496			
	13500	2	1000			
	18500	2	1370	77200	5719	
Channel Fill	216100	4	32015			
	2600	4	385			
	22100	4	3274			
	7300	4	1081			
	13700	4	2030			
	13000	4	1926			
	13300	4	1970			
	11800	4	1748			
	25000	4	3704			
	16400	4	2430			
	4300	4	637			
	17600	4	2607			
	11500	4	1704			
Hillocks	635000	13	305741			
	103000	7	26704			
	46000	12	20444			
	68200	11	27785	1304100	**436185**	

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River Fork Ranch Restoration Site 5-11-2007

Construction Activities and Materials	Area (ft^2)	Depth (ft)	Cubic Yards (yds^3)	Days	Months
River Channel and Floodplain Cut	4066600	3.015	454,104	432.48	19.7
Grade Control	77200	2	5,719	6.81	0.3
Fill	1304100	9.1	439,530	418.60	19.0

Equipment	Quantity	Hrly Cst w\Oprtr	Monthly Cost	6 Months	
Paddle Wheel Scraper	2	$270.00	$95,040.00	$570,240.00	
Cat 345 Excavator (4 months)	1	$277.00	$48,752.00	$195,008.00	
988 Loader	1	$233.00	$41,008.00	$246,048.00	
D400 Articulating Dump Tr.	2	$290.00	$102,080.00	$612,480.00	
D7Dozer	1	$264.00	$46,464.00	$278,784.00	
4000 gal Water Truck	2	$113.00	$39,776.00	$238,656.00	
Service Truck\Forman	1	$135.00	$23,760.00	$142,560.00	
Cat 315 w/thumb	1	$180.00	$31,680.00	$126,720.00	
Skidsteer	1	$130.00	$22,880.00	$91,520.00	
Service Truck	3	$30.00	$7,920.00	$47,520.00	
Flatbed Truck & 4 labor	1	$150.00	$13,200.00	$26,400.00	2 Months
Total Equipment			**$472,560.00**	**$2,575,936.00**	

Implementation	Quantity	Cost/Unit		Total
Project Manager (Month)	6.5	$26,400.00		$171,600.00
Mobilization (Transported Equipment)	13	$4,500.00		$58,500.00
Construction Oversight (1.5 people/month)	6.5	$44,550.00		$289,575.00
Engineering and Design (L.S.)	1	$255,000.00		$255,000.00
TNC Administration (year)	1	$250,000.00		$250,000.00

Visitor Facilities	Quantity (ft)			Total
Earth Trail	3980	$15.00		$59,700.00
Raised Trail	2195	$15.00		$32,925.00
Boardwalk	1985	$55.00		$109,175.00

Materials	Amount	Cost /Unit		Total
Grade Control Rock (ton)	5,719	$16.00		$91,496.30
Trucking (ton)	5,719	$6.00		$34,311.11
Sediment Control (Month) (if needed)	5	$50,000.00		$250,000.00
Fencing (feet)	15000	$5.00		$75,000.00
Misc. Materials (L.S.)		$35,000.00		$35,000.00

Re-vegetation				
Land Steward and 1 crew (1 year salary)	$128,000	$128,000.00		$128,000.00
Re-vegetation (L.S.)	$660,000	$660,000		$660,000.00
Irrigation (L.S.)	$160,000	$160,000		$160,000.00
Subtotal				**$5,236,218.41**

Interest	Project Cost	Rate %		
Interest for 1 year @ 6 5/8%		0.0625		
Contingency (L.S. @35%)	$5,236,218.41	0.35		$1,832,676.44
Total First Cost				**$7,068,894.85**

Annual Cost for 3 Years	Amount	Cost/Unit		
Land Steward and 1 Crew (year)	3	$128,000.00		$384,000.00
Mics.Equipment (L.S.)		$35,000.00		$35,000.00
Remedial Re-Vegetation/Irrigation (15%/Year)	3	$123,000.00		$369,000.00
Weed Control (years @ $500/Acre)	3	$66,010.00		$198,030.00
Bull Frog Control (years)	3	$5,000.00		$15,000.00
TNC Administration	3	$250,000		$750,000.00
Subtotal				**$1,751,030.00**
Contingency (L.S.@ 15%)	$1,751,030.00	0.15		$262,654.50
Total Post Construction Annual Cost				**$2,013,684.50**

Total for Project **$9,082,579.35**

ATTACHMENT E, PART 2

CONSERVATION ACTION PLAN

for the

RIVER FORK RANCH

September 2007

Wetlands along the Carson River, at River Fork Ranch

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH

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Overview

The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Using a methodology called *Conservation by Design* (The Nature Conservancy, 2004), the Conservancy uses the best available scientific information and subjects it to a rigorous and explicit process to identify a clear vision for conservation action and hopefully, success.

The *Conservation Action Plan for the River Fork Ranch* applies the methods of *Conservation by Design* to identify a strategic vision and action plan for The Nature Conservancy's work at the River Fork Ranch in the year's ahead. The Nature Conservancy began working on the Carson River with the acquisition of the River Fork Ranch in 2000, and is now active in the community and on several tracts of land. The overall objectives for the Conservancy on the Carson River are captured in the *Conservation Action Plan for the Carson River* (The Nature Conservancy 2007).

The primary recommendations of this Conservation Action Plan are to:

- Remove dredge spoils and re-connect river to surrounding floodplain habitats in 2007. Develop plan for further restoration in 2008.
- Maintain cattle exclusion fencing to restore riparian corridors.
- Monitor bird community as indicator of success.
- Evaluate status of wetlands and develop plan for possible disturbance activity to maintain a mosaic of micro-habitat conditions (open water, mud, young growth, & dense stands).
- Study amphibians to determine how to maintain healthy wetland habitat for northern leopard frog. Consider impacts of bullfrogs and crayfish.
- Monitor surrounding hydrologic alterations from groundwater pumping and surface water diversions. Develop strategy as needed.
- Monitor and control invasive plants. Develop long term plans for both.

The Nature Conservancy is currently involved in a variety of activities to advance this Conservation Action Plan. The Nature Conservancy owns and manages the River Fork Ranch where multiple land uses are demonstrated or in development, including habitat conservation, livestock grazing, education, and public access.

Figure 1. Location of the Carson River Project and River Fork Ranch.

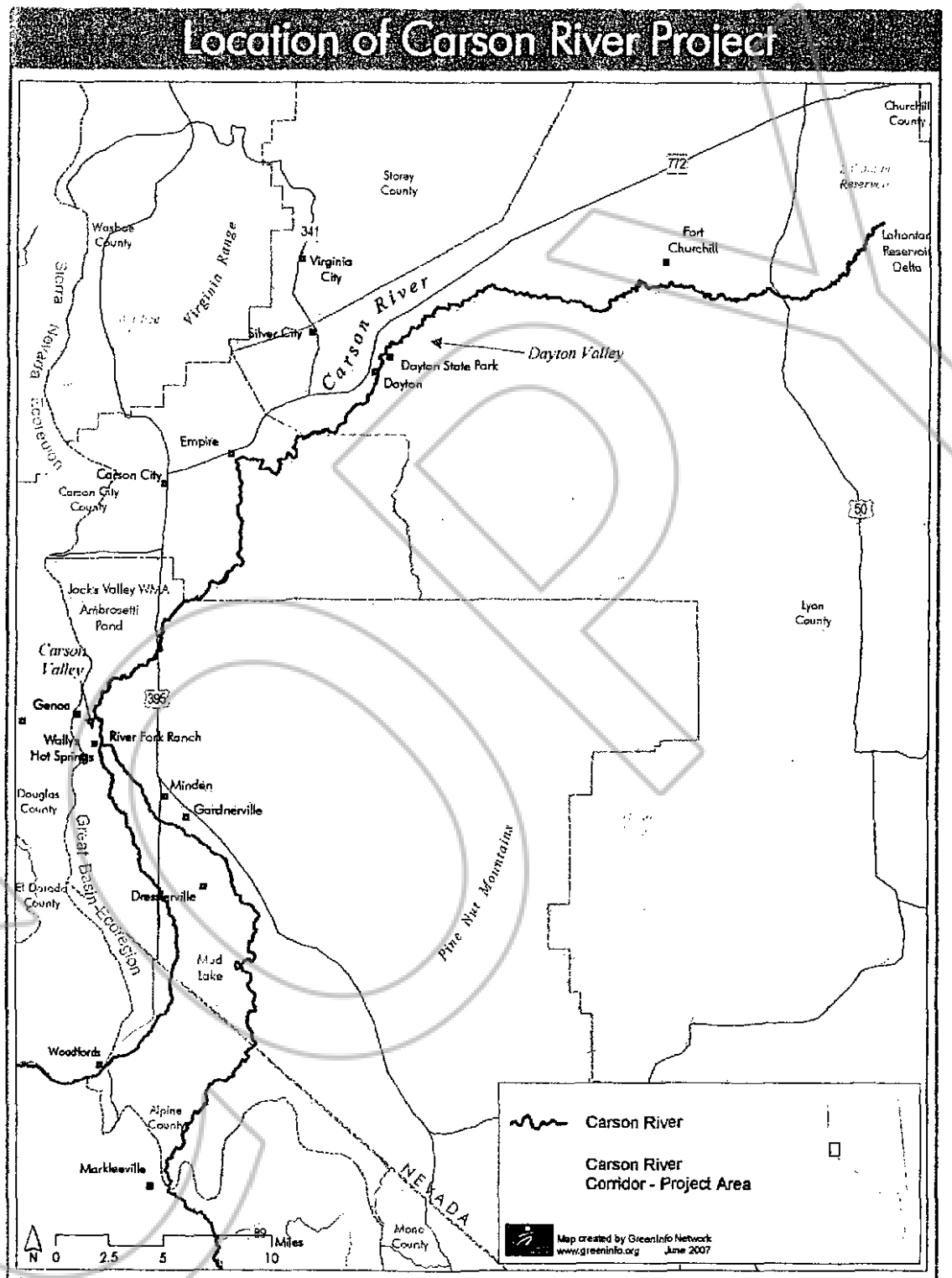


Figure 2. Land ownership of the Middle Carson River.

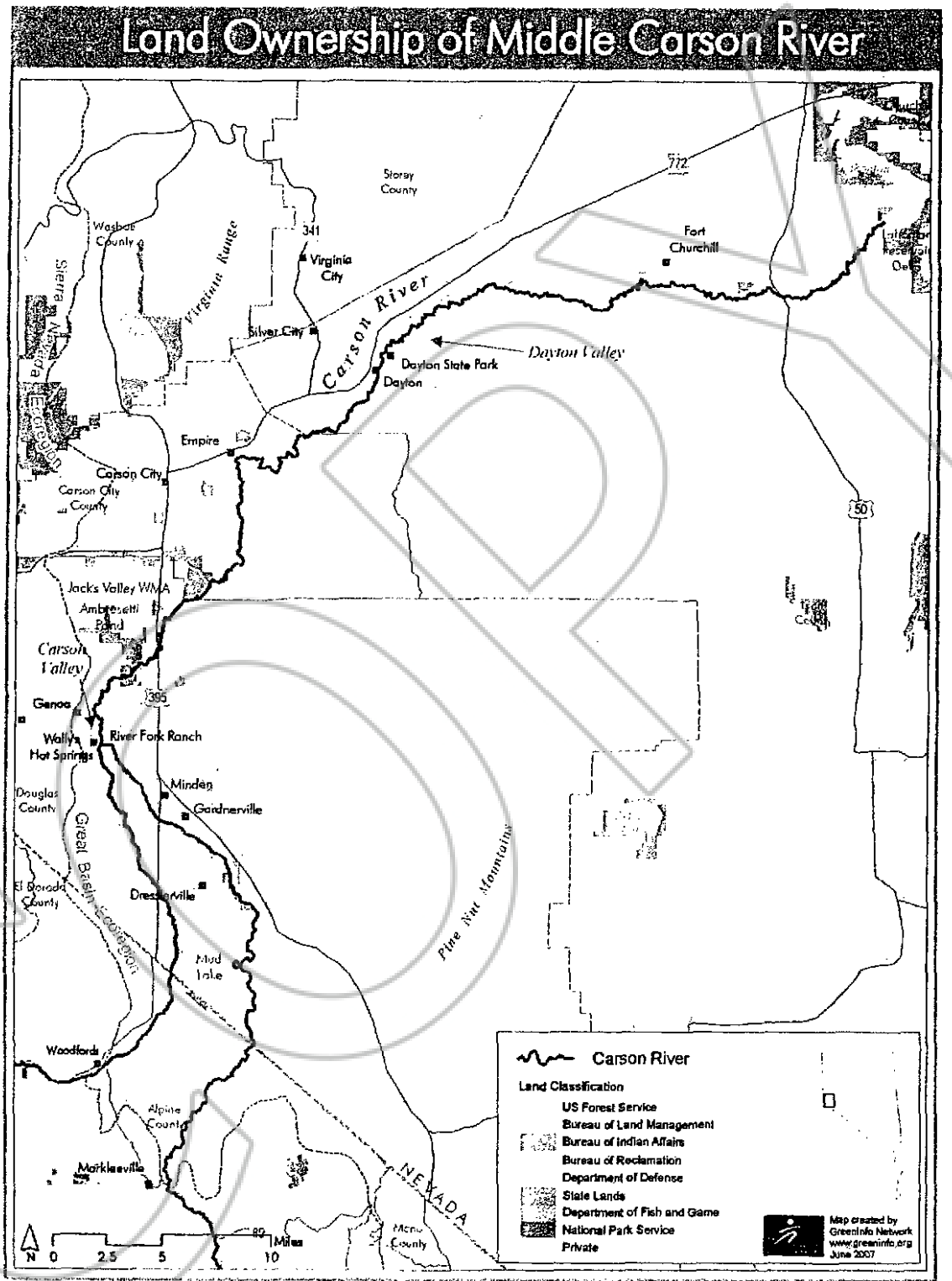
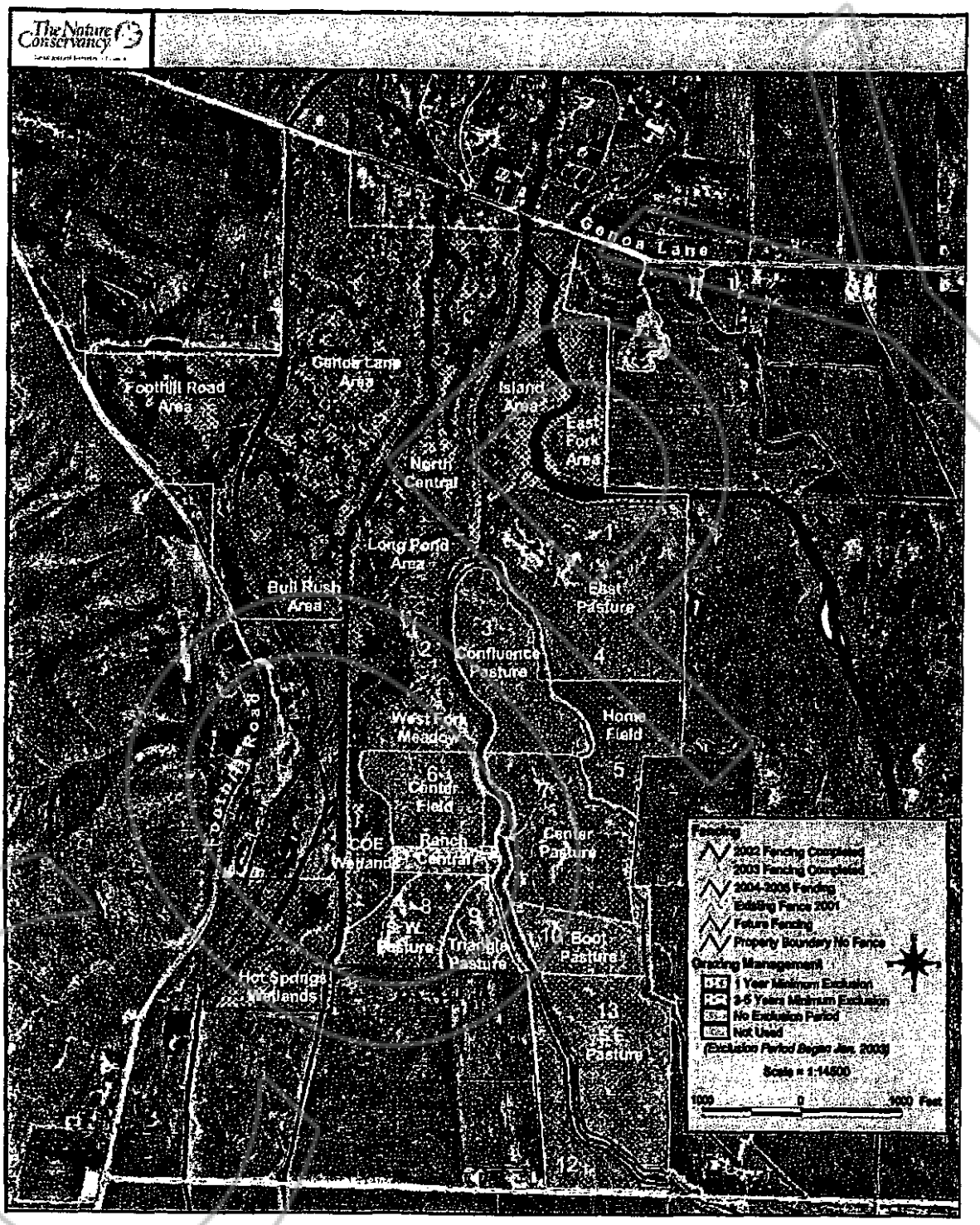


Figure 3. River Fork Ranch.



Conservation Targets

Cottonwood & Willow Riparian
Wet Meadows
Wetlands

Cottonwood & willow riparian, wet meadows and wetlands are conservation targets for the Carson River Project (The Nature Conservancy, 2007) and for the River Fork Ranch. Riparian habitats, wet meadows and wetlands require abundant water and are highly threatened within the arid Great Basin. Freshwater communities such as these have declined in spatial area and health due to numerous cumulative impacts, including water diversions, channelization of rivers, habitat conversion, agricultural development, residential development, and invasive species. Today, the Carson River still supports some of the best remaining examples of riparian, wet meadow and wetland habitat in the western Great Basin.

Riparian means pertaining to the banks and adjacent terrestrial environs of freshwater (Faber 2003) and most scientists use riparian only for the banks of moving freshwater in creeks, streams and rivers (e.g. Kondolf et al. 1996; Naiman et al. 2005). The edges of wetlands and bogs, in contrast, are generally not referred to as riparian habitats. In arid regions such as the Carson River Project, riparian zones generally consist of bands of habitat along waterways where high soil moisture permits the development of vegetation that is entirely dependent on such conditions, such as cottonwood and willow. The riparian vegetation in turn supports an aquatic and terrestrial fauna that collectively make up a riparian community.

The dominant tree in cottonwood riparian habitat along the middle Carson River is Fremont cottonwood (*Populus fremontii*), and the dominant shrubs are various species of willow (*Salix* spp). Cottonwood riparian habitat may occur as linear bands that parallel the river, or as dense and broad patches of habitat that may extend a considerable distance from the main river channel. Substrates are generally well-drained and coarse textured soils derived from alluvium (sediment that eroded from upstream areas and was deposited by flood waters). Cottonwood trees are dependent on annual or periodic flooding, followed by a gentle decline in water levels so that the roots of young seedlings can get established.

Cottonwood Riparian on the banks of the mainstem Carson River. At River Fork Ranch, cottonwood forest does not currently exist at this density. At this time, we do not know the full site potential of River Fork Ranch for cottonwood trees. The site may be more suitable to willow riparian.

Willow riparian habitat along the middle Carson River is dominated by willow shrubs (*Salix* spp). The same species of willow shrub may occur among and beneath cottonwood trees, so the primary distinction of willow riparian habitat is the lack of a cottonwood tree overstory. On the middle Carson River, it appears that some areas have a natural site potential for willow riparian habitat and they will not support cottonwood trees. The river immediately downstream of Cradlebaugh Bridge, along Highway 395, is one such area. A variety of physical differences may cause willow shrubs to dominate in some areas, such as: more finely textured soils with a higher clay component; soils that do not drain as quickly; and slower moving surface and subsurface water.

At the River Fork Ranch, willow riparian is the dominant and most common form of riparian. There are a few cottonwood trees growing at the far northern boundary of the ranch. At this time, we do not know the site potential of the River Fork Ranch for cottonwood trees. It could be that like the river below Cradlebaugh Bridge, the site conditions at River Fork Ranch are more suited to willow riparian.

Willow riparian on a slough to the East Fork Carson River, with graduate students from the University of Nevada at Reno collecting data on hydrology during a field trip

Wet meadow habitat consists entirely of low-growing vegetation on seasonally saturated to temporarily flooded areas. They are often found adjacent to riparian habitat and wetlands and fall within the river floodplain. Wet meadows are also found below seeps and springs that sometimes emanate from hills surrounding the Carson River, particularly on the flanks of the Sierra Nevada mountains. Dominant plant species include sedges (*Carex* spp.), rushes (*Juncus* spp.), and spikerushes (*Eleocharis* spp.). Soils are typically deep, fine textured loams and clays that may overlie coarse-textured alluvium. Along the middle Carson River, wet meadows are most abundant in the Carson Valley. Many wet meadows receive water from irrigation systems established to support livestock grazing through the summer months.

Wetlands are habitats that are permanently or seasonally inundated with water which generally creates oxygen-deficient conditions in the root zone, which in turn results in distinctive soils and plant associations (Kattelmann and Embury, 1996). Dominant plant species are bulrushes and tules (*Scirpus* spp.), and some cattails (*Typha* spp.). Associated species include sedges (Carex spp.), rushes (Juncus spp.) as well as water tolerant grasses and herbaceous plants. Soils are often deep and poorly drained muck that may overlie coarse-textured alluvium. Many wetlands along the middle Carson River form in abandoned river channels and oxbows. Other wetlands on the western edge of the Carson Valley, in the

vicinity of Genoa and Wally's Hot Springs, occur in a natural depression formed by ancient geologic events. Wetlands generally grade into wet meadow habitats, and willow riparian and cottonwood riparian are often in close proximity as well.

Wet meadow habitat at the River Fork Ranch, Carson Valley

Riparian habitats, wetlands and wet meadows are far more important biologically than the acreage they cover would suggest (Naiman et al., 2005). Riparian areas may be the single most critical habitat for protecting terrestrial bird populations in the western United States. In the Inyo National Forest of the Sierra Nevada, biologists determined that riparian vegetation provides habitat for up to 75% of local wildlife species, despite covering less than 0.4% of the land area (Kondolf et al. 1987). In the arid Great Basin, riparian vegetation occupies just 1 percent of the land the surface yet is inordinately important for sustaining the biodiversity of plants and animals (Chambers & Miller, 2004). Wet meadows and wetlands provide important bird and wildlife habitat, and a variety of ecosystem services such as groundwater re-charge, nutrient absorption, sediment trapping, water quality enhancement, and dissipation of flood water energy (National Research Council, 1995; Silk & Ciruna, 2004).

Wetland habitat on the River Fork Ranch, Carson Valley. Note the presence of early successional stages including bare mud, seedlings at the water's edge, patchy young tules, and open water.

Native amphibians such as the northern leopard frog did not emerge as a conservation target because we are not able to identity specific habitat requirements for these species that exceed our strategic objectives for riparian, wetland, and wet meadow habitat areas. We are using native amphibians as indicators of success for the conservation of wetlands and wet meadows.

Northern leopard frog at River Fork Ranch, Carson Valley. This frog has declined precipitously from historic population levels in western Nevada, and serves as an important indicator of healthy riparian, wet meadow, and wetland habitats. Today, the leopard frog is very rare along the Carson River.

Target Viability at River Fork Ranch

Cottonwood & Willow Riparian = FAIR
Wetland = FAIR
Wet Meadow = FAIR

Viability refers to the status or "health" of our conservation targets and indicates the ability of a target to recover from most natural or human-caused disturbances and thus to persist for many generations and over long time periods. Viability rankings are used to indicate the overall status and condition of the targets. Rankings of GOOD and VERY GOOD indicate that the target is conserved, and that the target exists within an acceptable range of variation. Rankings of POOR and FAIR indicate that the target is not conserved and exists outside of an acceptable range of variation. A POOR ranking reveals that the target may go extinct within 10 to 25 years if actions are not taken to restore, conserve, or abate threats to the target. A *FAIR* ranking reveals that the target is in a state of degradation, or may decline to a *POOR* rank if actions are not taken to enhance viability or abate threats.

Viability rankings are snapshots of current conditions and generally reflect the cumulative impact of past changes and disturbances. Viability rankings do not take into account future threats that may cause viability rankings to decline in the future. The overall viability ranks for the River Fork Ranch are based on detailed viability analyses presented below. Viability analyses and ranks are based on the professional judgment of staff at The Nature Conservancy, and are based on the input of technical experts and the best scientific information available.

Target	Key Ecological Attribute (KEA)	Indicator	Current Rank	Current Status	Desired Rank	Desired Status
Riparian	River - floodplain connectivity	Geomorphic profile of river channel to floodplain		River channel is entrenched & downcut. Dredge spoils isolate river from floodplain	GOOD	Re-connect floodplain to river by removing dredge spoils. Consider raising river bed.
Riparian	Channel sinuosity	Geomorphic plan view of sinuosity relative to site potential	FAIR	Sinuosity reduced compared to historic conditions	GOOD	Consider increase of sinuosity by 15%
Riparian	Late summer base flows	Late summer base flows	FAIR	Lower segments of river go dry every year	GOOD	Implement minimum flow regimes for each river segment
Riparian	Area of riparian habitat	Area & configuration of riparian	GOOD	X ac cottonwood riparian & Y ac willow riparian	GOOD	Increase?
Riparian	Plant community & dominance	Cover of native species relative to non-native	FAIR	Enter OBEC data	GOOD	
Riparian	Plant recruitment & stand structure	Juvenile recruitment and presence of multiple age classes		Young trees & shrubs are rare due to low recruitment	GOOD	Increase recruitment & abundance of multiple young age classes
Riparian	Bird community & dominance	Species richness & abundance for riparian-associates relative to disturbance-associates		Riparian associates rare & some local extinctions	GOOD	Increase abundance (by 200%) & species richness (by 2 spp) of riparian associates

Target	Key Ecological Attribute (KEA)	Indicator	Current Rank	Current Status	Desired Rank	Desired Status
Wet Meadow	River - floodplain connectivity	Geomorphic configuration & topography of channels, swales & fields for inundation and circulation.		Wet meadows are maintained by artificial irrigation. Adjacent river often disconnected.	GOOD	Reconnect wet meadows to adjacent river channels on X ac of wet meadow
Wet Meadow	Natural topography	Topography is undulating with small rises and low swales	GOOD	High percentage of wet meadow with natural topography	GOOD	High percentage of wet meadow with natural topography
Wet Meadow	Late summer base flows	Late summer base flows	FAIR	Lower segments of river go dry every year	GOOD	Implement minimum flow regimes for each river segment
Wet Meadow	Area of wet meadow habitat	Area & configuration of wet meadow	GOOD	X ac wet meadow get OBEC data	GOOD	X ac wet meadow
Wet Meadow	Plant community & dominance	Cover of native species relative to non-native	FAIR	Get OBEC data	GOOD	Get OBEC data
Wet Meadow	Bird community & dominance	Species richness & abundance for wet meadow-associates relative to disturbance-associates		Wet meadow associates present but uncommon	GOOD	Increase abundance (by 50%) of wet meadow associates

Target	Key Ecological Attribute (KEA)	Indicator	Current Rank	Current Status	Desired Rank	Desired Status
Wetland	River - floodplain connectivity	Geomorphic configuration & topography of channels, swales & ponds for inundation and circulation.		Wetland ponds are isolated from each other, & from river, by berms & high ground	GOOD	Reconnect ponds and river channels for X ac of wetland
Wetland	Late summer base flows	Late summer base flows	FAIR	Lower segments of river go dry every year	GOOD	Implement minimum flow regimes for each river segment
Wetland	Area of wetland habitat	Area & configuration of wetland	GOOD	X ac wetland get OBEC data	GOOD	X ac wetland get OBEC data
Wetland	Plant community & dominance	Cover of native species relative to non-native	GOOD	Field observations suggest low cover of non-native weeds	GOOD	Maintain low cover of non-native weeds
Wetland	Vegetation disturbance	Presence of all successional stages: open water, mud, patchy young growth, & dense tule stands		Wetlands are not disturbed & are dominated by dense tule stands	GOOD	Create all successional stages by disturbance: cattle, fire, &/or discing.
Wetland	Bird community & dominance	Species richness & abundance for wetland-associates relative to disturbance-associates	FAIR	Wetland associates present but uncommon	GOOD	Increase abundance (by 50%) of wetland associates
Wetland	Amphibian community & dominance	Species richness & abundance for native species relative to non-native		Northern leopard frogs rare & bullfrogs common	GOOD	Northern leopard frogs common & bullfrogs rare

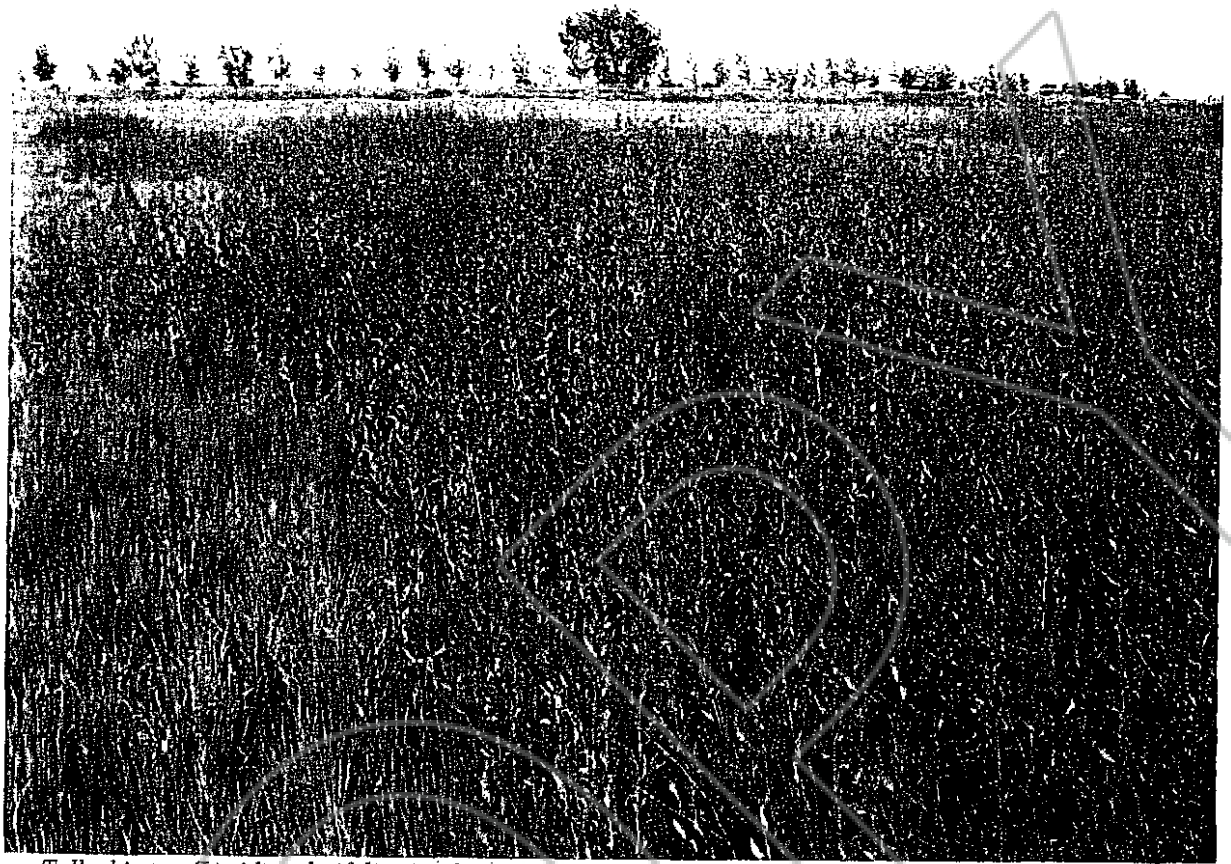
Threats at River Fork Ranch

Threats = Sources of Stress	Riparian	Wet Meadow	Wetland	Overall Threat to Targets
Hydrologic alteration from surface diversions	HIGH	HIGH	MEDIUM	HIGH
Hydrologic alteration from groundwater pumping on surrounding properties	MEDIUM		HIGH	HIGH
Invasive plant species	HIGH	HIGH		HIGH
Invasive vertebrate & invertebrate species	HIGH	HIGH	HIGH	HIGH
Excavating & clearing river channels for passage to downstream water rights	MEDIUM	MEDIUM	MEDIUM	MEDIUM
Fire suppression & grazing exclusion			HIGH	MEDIUM
Real estate development				
Straightening, entrenching and armoring the river				
Levelling wet meadows for pasture & hayfields				
Inappropriate agricultural practices (grazing & herbicides)				
Converting wet meadow into agriculture (alfalfa, etc.)				
Filling & levelling wetlands	n/a	n/a		

Threats are current and future conditions that will damage the viability of targets. Threats are evaluated in terms of *STRESS* (such as habitat destruction) and *SOURCE* of stress (such as the residential development that causes habitat destruction).

Surface water diversions and groundwater pumping are HIGH ranked threats due to ever increasing levels of water utilization by people in Carson Valley for agriculture, industrial, and municipal uses. Water levels in the river are very low by late summer and early fall.

Invasive plant, vertebrate and invertebrate species are HIGH ranked threats at River Fork Ranch. Numerous invasive plants are a problem at the site, such as tall whitetop. Invasive bullfrogs and birds are threats to their respective taxonomic groups, and invasive crayfish are a threat to native amphibians and fishes.



Tall whitetop (Lepidium latifolium) at River Fork Ranch (on the right and in the center, with some yellow leaves). This non-native plant is highly invasive and threatens natural habitats and agriculture along the Carson River.

Situation Analysis

Situational factors are important influences on strategy and consist of the key cultural, economic, political and opportunity features of the landscape.

Situational factors affecting the River Fork Ranch include:

- Compatible Agriculture - The Nature Conservancy wishes to use the site as a demonstration project showing that livestock grazing and agriculture can be compatible with nature conservation. The River Fork Ranch contains irrigated hayfields and pastures, and the ground is leased for livestock grazing. These practices are expected to continue.
- Public Access – The Conservancy is planning to build a visitor's center and trail system that will allow the public to visit the site and learn about nature conservation and compatible agriculture.
- Conservation Education -
- Neighbors & the Community – The Conservancy intends to be a good neighbor in the community by respecting private property rights, respecting downstream water rights obligations, and blending with the cultural and economic trends in the region.
- Communications and Marketing - The River Fork Ranch has great potential as a communication, marketing, and fund-raising tool for the Conservancy in western Nevada.
- Scientific Research & Monitoring - The River Fork Ranch has great potential for long-term research on biodiversity trends, and for collaborative research with universities and non-profit groups.

Strategies

Good strategies should enhance viability and abate threats. The strategies should enhance viability for Key Ecological Attributes ranked POOR, and, abate threats ranked VERY HIGH or HIGH.

Viability Enhancement Strategies for KEAs ranked POOR

KEA = River - floodplain connectivity
TARGET = all
STRATEGY DESCRIPTION = in 2007 remove dredge spoils and contour surface to reconnect river channels to surrounding wet meadows and wetlands. Develop plan for restoration work in fall of 2008.
TIME = fall 2007

KEA = plant recruitment & stand structure
TARGET = riparian
STRATEGY DESCRIPTION = maintain cattle exclusion fencing along riparian corridors
TIME = 2007, 2008, and until it is deemed beneficial to return livestock to riparian corridors

KEA = bird community & dominance
TARGET = all
STRATEGY DESCRIPTION = the bird community is dominated by non-native and disturbance associated species. It is expected that habitat improvements will improve the bird fauna toward greater species richness and abundance of native species. GBBO shall monitor the bird community to assess trends.
TIME = 2007, 2008, 2009.

KEA = Vegetation disturbance
TARGET = wetland
STRATEGY DESCRIPTION = the wetlands are becoming uniform stands of cattail and tule, without open water, young stands, and exposed mud. The lack of habitat variation will decrease wetland suitability for biodiversity. Develop long term plan to monitor wetland vegetation composition, and implement disturbance.
TIME = 2007 & 2008.

KEA = amphibian community & dominance
TARGET = wetland
STRATEGY DESCRIPTION = the amphibian community is dominated by non-native bullfrogs. Northern leopard frogs are considered an excellent indicator of wetland health and integrity. We need to learn more about the biology of leopard frogs at River Fork, and we need census information on amphibian populations. Develop plan to do this research, and integrate it into our long term restoration and management activities. Hopefully, we can recruit a graduate student to undertake a study such as this.
TIME = 2007, 2008.

Threat Abatement Strategies for Threats Ranked VERY HIGH or HIGH

THREAT = Hyrdologic alteration from surface diversions.
TARGETS = all
STRATEGY DESCRIPTION = conduct outreach to experts to monitor this threat. Develop long term action plan.
TIME = 2007, 2008.

THREAT = Hyrdologic alteration from groundwater pumping on surrounding properties.
TARGETS = all
STRATEGY DESCRIPTION = conduct outreach to experts to monitor this threat. Develop long term action plan.
TIME = 2007, 2008.

THREAT = Invasive plant species
TARGETS = riparian and wet meadow
STRATEGY DESCRIPTION = Evaluate Provencher vegetation survey data to determine role of this data in strategy development. Work with county to continue weed spraying. Develop strategy for monitoring plant community composition in relation to weed invasion and spread. Develop strategy for weed abatement.
TIME = 2007, 2008.

THREAT = Invasive vertebrate & invertebrate species
TARGETS = all
STRATEGY DESCRIPTION = Overlaps well with KEA on this subject. See above.
TIME = see above.

Other Strategies Driven by Situational Factors

Objective: Foster enduring multi-organizational partnerships for long-term stewardship. Increase community understanding of river health issues leading to public policies that conserve the river corridor and surrounding habitats.

Strategic Actions:

- Develop a Nature Center and interpretive trail system at River Fork Ranch which engages the community in biodiversity conservation.
- Participate in community outreach and environmental education programs.
- Continue grazing livestock and agriculture and demonstrate compatibility to public.

Measures of Success

The strategies section includes action to evaluate measures of success. This narrative provides more information on the subject.

"Measures of success" consists of the monitoring programs that The Nature Conservancy intends to implement in order to gauge success toward our strategic objectives. Monitoring allows for adaptive management and changes to our strategies as we learn what is working, and what is not working. Monitoring also helps the Conservancy adapt to unforeseen and changing circumstances, such as climate change, new invasive species, disease among plant or animal populations, new economic trends and forces, and any other unanticipated change to our work.

Geomorphology
Since geomorphology is one of the primary determinants of the distribution and condition of riparian, wet meadow and wetland habitats, it is important to document current conditions and changes to current conditions by natural processes and restoration. In general, geomorphic conditions can be assessed by looking from above (called a "plan view") and by looking from the side (called a "profile"). Plan view measurements can be achieved by taking aerial photographs, and by measuring topographic variation in the surface of the ground which can be done today with satellite imagery or with measurements from Global Position Systems (GPS). Profile measurements can be collected with transits and poles at different locations in the floodplain. The Conservancy recommends plan view and profile measurements for select areas in the river corridor.

Hydrology
Hydrology is another primary determinant of the distribution and condition of riparian, wet meadow and wetland habitats. We generally think of hydrology in terms of the surface waters we can see, yet it is important to acknowledge the water in subsurface flows and in the ground water table. Today, very little research has been conducted on the Carson River concerning the relationships between surface waters, geology, surface water diversions, and ground water pumping. This represents an important research need on the Carson River, and such research may recommend additional monitoring requirements that we are not yet aware of. Regarding surface flows, the USGS maintains gage stations at several locations on the Carson River, which record the volume of water passing by the gage. It is important that such monitoring continues and perhaps expands with more gauging stations, in the years ahead.

Vegetation Area
The spatial area of vegetation for out target communities is a very important measure of target viability. We need to know if the acreage of riparian, wet meadow, and wetland is increasing, staying the same, or decreasing. Monitoring spatial area of vegetation generally requires aerial photographs, delineating and measuring habitats, and field surveys to confirm that delineated habitats from aerials match actual habitats on the ground.

Vegetation Native Cover

The spatial area of vegetation does not tell us the condition of the vegetation. As mentioned in this report, in many locations willow riparian and cottonwood riparian habitat exist, but the habitat has low viability due to lack of regeneration, large numbers of invasive weeds, excessive livestock grazing, a drop in the water table, and other factors. The percent native cover, versus the cover of non-native plants, is an important indicator of habitat viability, and an important goal for monitoring.

Vegetation Structure & Disturbance

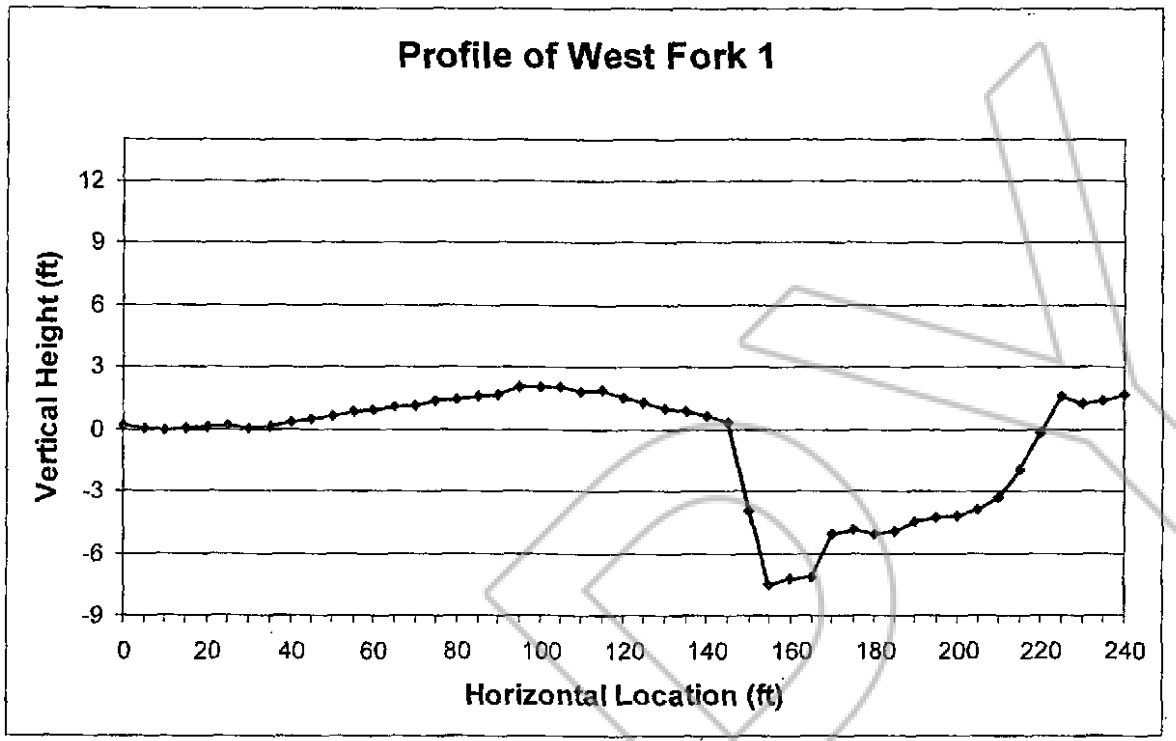
If willow and cottonwood plants are not re-generating then this will be revealed in the vegetation structure. In locations where appropriate conditions are not in place for germination and survival of young plants to adulthood, then we will not see young and medium-aged shrubs and trees. In fact, this is a very common condition on the Carson River today. It is a priority to monitor vegetation structure in the riparian habitat to see if the situation improves with restoration and management changes. Vegetation disturbance refers primarily to the wetland habitat which is adapted to regular disturbance events in order to maintain all the micro-habitats of wetlands which are essential to the maintenance of a diverse bird and wildlife population. Wetlands need to maintain open water, mud, young growth, and old dense stands of tules and growth. In the absence of disturbance, wetland plant diversity declines and on the Carson River tules become the dominant plant overtaking most others including open water. Historically fire was the dominant disturbance agent. Today, we can use fire, livestock, and agricultural equipment to create disturbance.

Bird & Amphibian Community

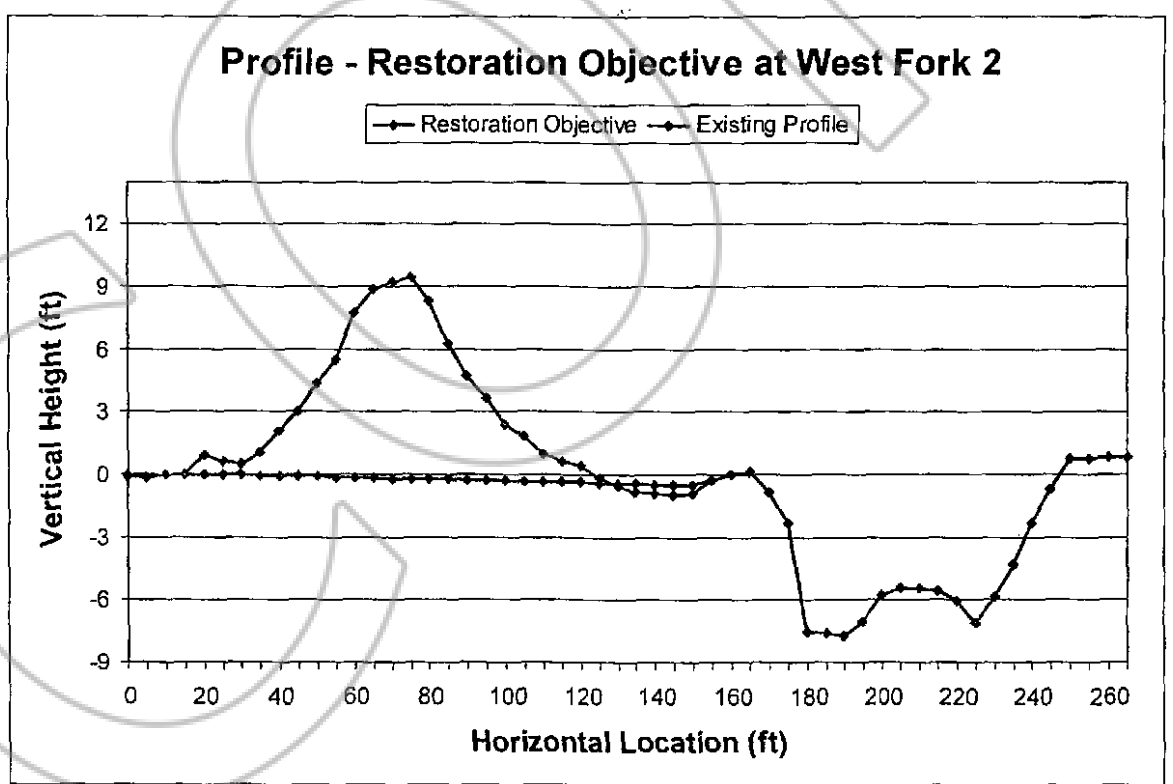
Birds and frogs are important indicators of the health and integrity of riparian, wet meadow, and wetland habitats. The Conservancy intends to monitor these taxonomic groups in order to assess current conditions, and to watch progress in restoration and management changes. A key parameter in the bird and amphibian communities is the relative abundance and species richness of native species versus non-native species. As discussed in this report, native birds and frogs have suffered local extinctions and great reductions in population sizes. In contrast, non-native species that were not found in Nevada historically, such as brown-headed cowbirds, European starlings, and bullfrogs, are extremely common and partially responsible for the decline in our native species. This issue will be a focus of our monitoring efforts in the future.

2007 Plan for Restoring River–Floodplain Connectivity

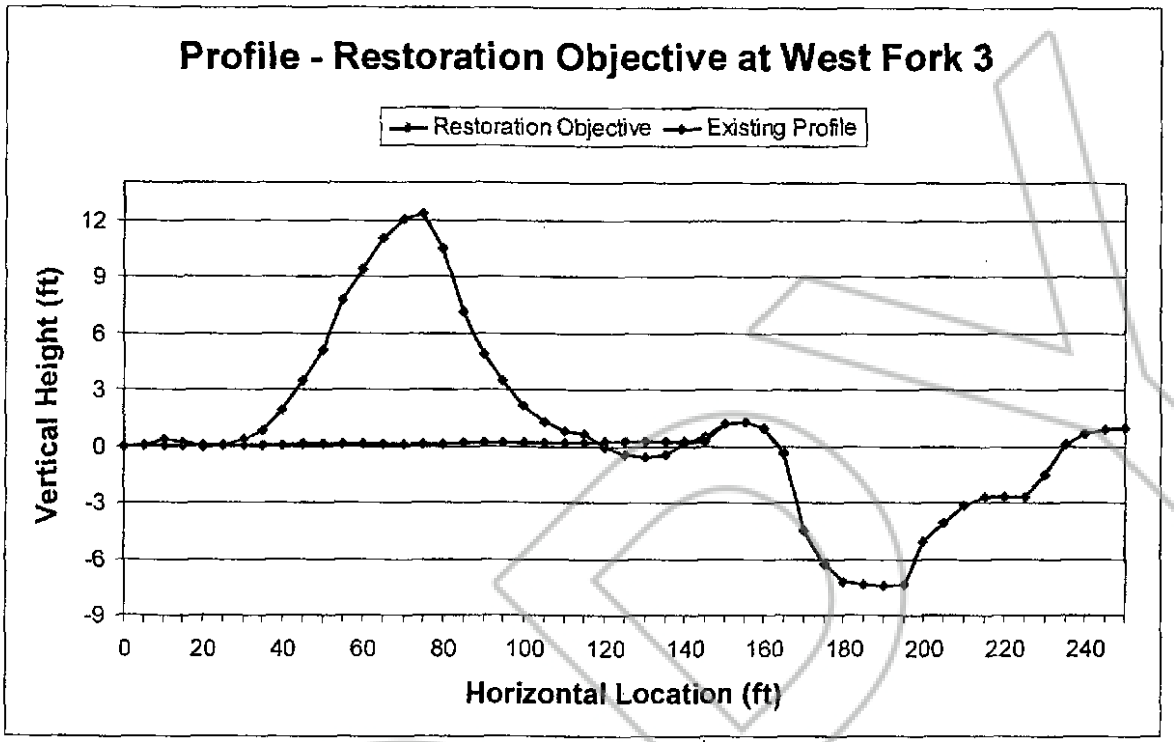
The 2007 plan for restoration is to remove dredge spoils along the West Fork Carson River and the Brockliss Slough. After dredge spoil removal the intent is to re-contour the land to match the adjacent natural floodplain of wet meadow and sagebrush. The goal of this work is to reconnect the river to the surrounding floodplain. We expect to recruit riparian, wet meadow and sagebrush habitat to the location of spoil removal and contouring. We expect that improved water circulation during spring high-flow events will improve native plant species richness, water quality (dissolved oxygen and temperature), aquatic invertebrate populations, and bird species richness and abundance. Other expected benefits to water quality and hydrology include the capture of sediments and pollutants, and the dissipation of flood-water energy.



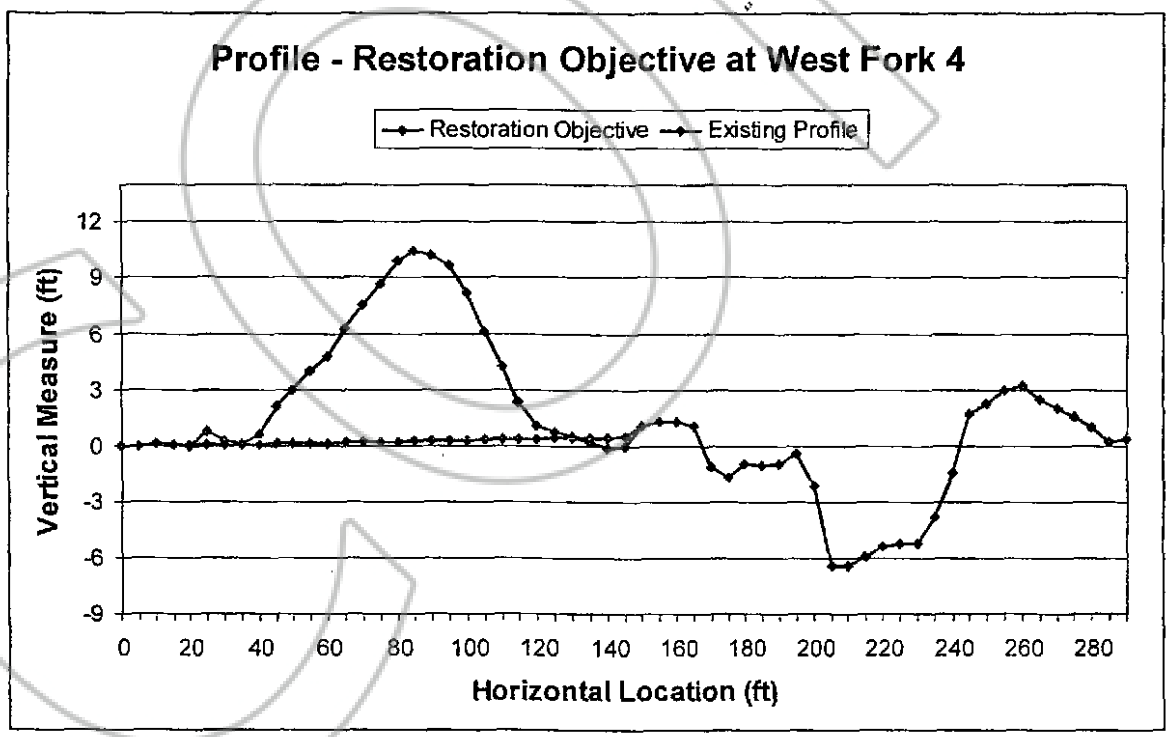
Profile at West Fork 1 where no dredge spoils are located. Gives rough indication of profile without dredge spoils, however, this should not be considered "natural" or "unaltered" or necessarily "desired."



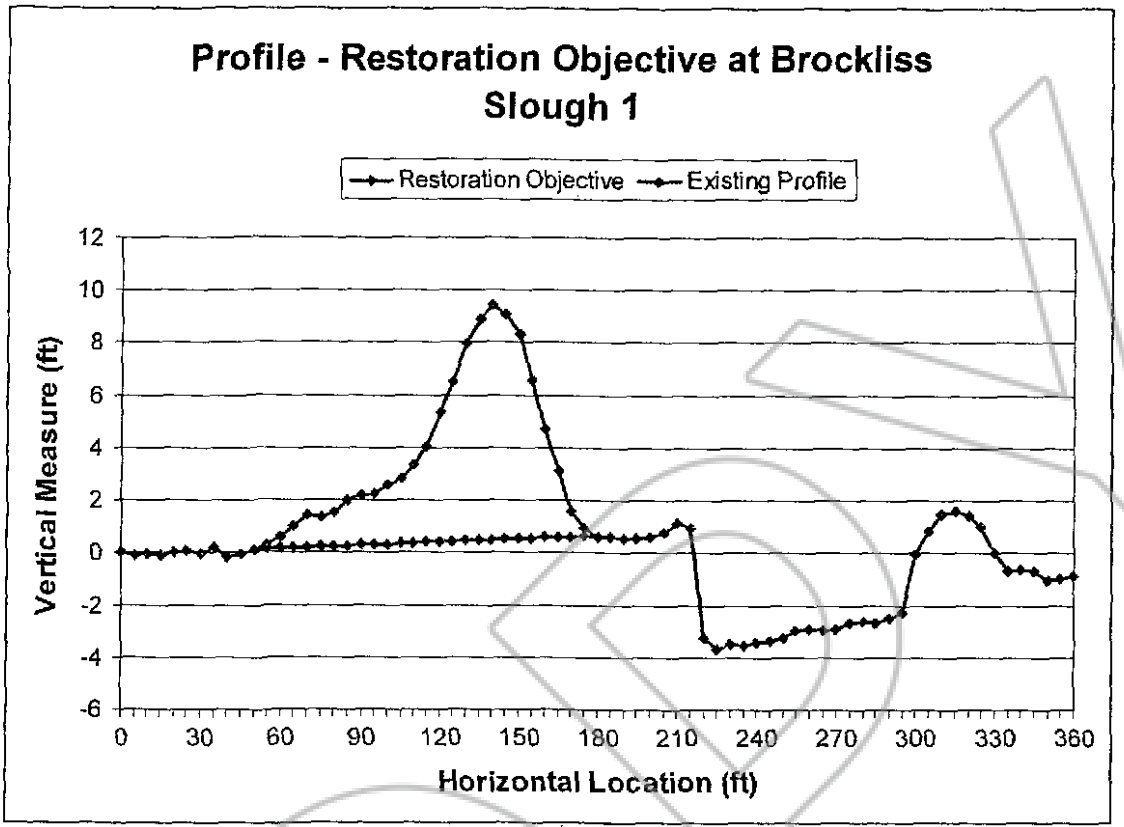
Profile of West Fork 2, showing existing profile and restoration objective.



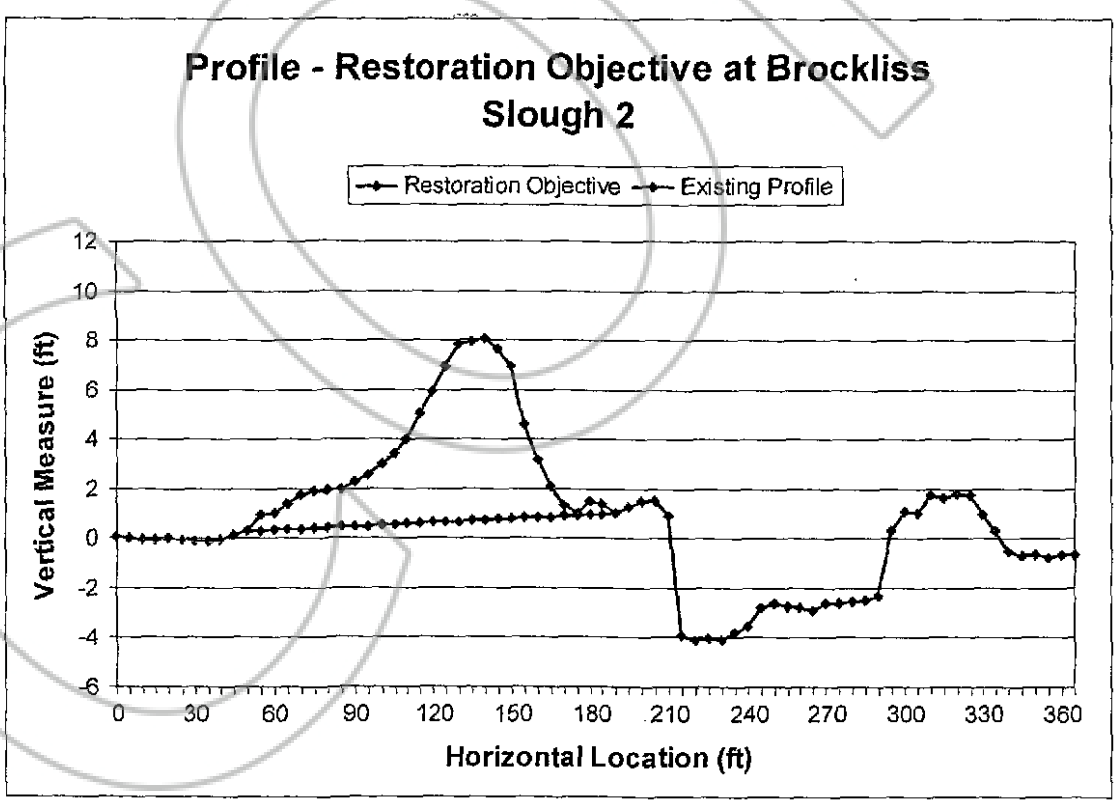
Profile of West Fork 3, showing existing profile and restoration objective.



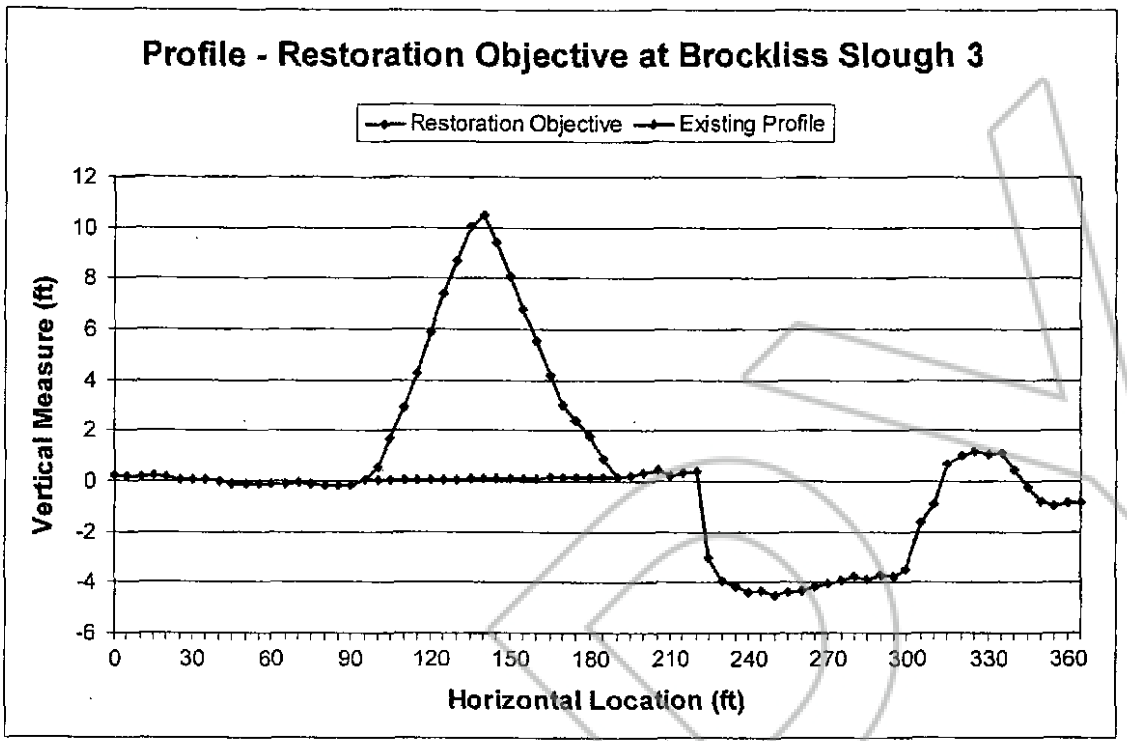
Profile of West Fork 4, showing existing profile and restoration objective.



Profile of Brockliss Slough 1, showing existing profile and restoration objective.



Profile of Brockliss Slough 2, showing existing profile and restoration objective.



Profile of Brockliss Slough 3, showing existing profile and restoration objective.

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The document to which this certificate is attached is a full, true and correct copy of the original on file and on record in my office.

DATE: Oct 10, 2008

Clerk of the 9th Judicial District Court of the State of Nevada, in and for the County of Douglas.

By Carla M Fuller Deputy