CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

In the matter of:	)	
	)	
	)	
City of Encinitas	)	**Order No. R9-2015-0047**
and	)	
USS Cal Builders, Inc.	)	**Settlement Agreement and**
	)	**Stipulation for Entry of**
Administrative Civil Liability	)	**Administrative Civil Liability Order**
Complaint No. R9-2013-0152	)	

Section I: Introduction

This Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order ("Order") is entered into by and between the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prosecution staff ("Prosecution Staff"), and the City of Encinitas ("City") (collectively the "Parties"). The Order is presented to the San Diego Water Board, or its delegee, for adoption as an order by settlement pursuant to Government Code section 11415.60, in reference to an adjudicative proceeding initiated by the issuance of Administrative Civil Liability Complaint No. R9-2013-0152, dated November 21, 2013 (the "Complaint").

Section II: Recitals

1. The City is the owner of the Hall Property Park, located at 425 Santa Fe Drive, Encinitas, California. The City is also the owner and operator of the municipal separate storm sewer system ("MS4") within the City of Encinitas.

2. The City's MS4 is subject to the requirements set forth in San Diego Water Board Order No. R9-2007-0001, NPDES No. CAS0108758, *Waste Discharge Requirements for Urban Runoff From the Municipal Separate Storm Sewer System (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority*, and subsequent revisions thereto.

3. The City submitted a Notice of Intent ("NOI") for coverage under State Water Resources Control Board ("State Water Board") Order No. 2009-0009-DWQ, NPDES No. CAS000002, *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities,* for construction of the Hall Property Park.

4. On December 13, 2012 and March 8, 2013 the City reported sediment discharges from the Hall Property Park construction project to Rossini Creek, upstream of San Elijo Lagoon, during storm events. San Elijo Lagoon is listed as an impaired water body pursuant to section 303(d) of the federal Clean Water Act. The listed impairments include sedimentation/siltation, eutrophication, and indicator bacteria.

5. The sediment discharges resulted from the lack of adequate erosion, sediment, and runon/runoff controls implemented at the Hall Property Park construction project and the City's lack of oversight of the capital improvement project as required by Order No. R9-2007-0001.

6. On November 21, 2013 the Prosecution Staff issued Administrative Civil Liability Complaint No. R9-2013-0152 to the City and its contractor, USS Cal Builders. The Complaint recommended an administrative civil liability totaling $430,851 for violations of Orders No. 2009-0009-DWQ and R9-2007-0001, resulting from sediment discharges from the Hall Property Park construction project to the MS4, caused by the lack of appropriate best management practice ("BMP") implementation, and the lack of oversight of construction activities. The proposed civil liability included an estimated economic benefit of $58,794 and staff costs of $18,065.

7. The Prosecution Staff engaged in settlement negotiations but disclosed on December 4, 2014 that the Parties were unable to reach an agreement. On February 25, 2015 the City waived its right to a hearing and agreed to pay the full penalty amount with the inclusion of a Supplemental Environmental Project ("SEP").

8. To resolve by consent and without further administrative proceedings all violations of Water Code section 13385 set forth in the Complaint, the Parties have agreed to the imposition of $430,851 in civil liability against the City. The City shall pay a total of $224,458 to the State Water Board Cleanup and Abatement Account ("Cleanup and Abatement Account") no later than 30 days following the San Diego Water Board's adoption of this Order, and complete a SEP valued at $210,563 as described herein and in Attachment A. The remaining $206,393 in liability is suspended upon completion of a SEP as set forth in this Order. Failure to complete the SEP as set forth in this Order will result in the payment of $206,393 (the "SEP Amount") in suspended liability to the Cleanup and Abatement Account. The City and USS Cal Builders are currently in a dispute as to liability related to this Order. Notwithstanding this Order, including any representations made herein, the City reserves the right to, and intends to, pursue USS Cal Builders for any liability caused by the same related to this Order.

9. The Prosecution Staff avers that the resolution of the alleged violations is fair, reasonable, and fulfills its enforcement objectives, that no further action is warranted concerning the specific violations alleged in the Complaint except as provided in this Order, and that this Order is in the best interest of the public.

10. **SEP Description – Enhancement of Native Habitats in San Elijo Lagoon Ecological Reserve:** The City proposes several restoration projects within the San Elijo Lagoon Ecological Reserve ("Reserve"). The proposed projects consist of the following actions:

a. Treatment and control of 7.92 acres of invasive tamarisk species in the riparian corridor of Escondido Creek.
b. Treatment and control of 1.5 acres of invasive tree species in the riparian corridor of Escondido Creek.
c. Revegetation of the 1.5-acre invasive tree removal site (b. above) with native riparian trees, shrubs, and herbs.
d. Enhancement of 0.47 acre of coastal strand habitat by removing arrow weed in the west basin of the Reserve and seeding the area with native forbs.
e. Treatment and control of invasive grasses from 0.48 acre of upland habitat and revegetation with native coastal sage scrub plants in the east basin of the Reserve.

11. **Water Quality Benefits of the SEP:** The *San Diego Water Board's Water Quality Control Plan for the San Diego Basin* ("Basin Plan") designates the beneficial uses of San Elijo Lagoon and tributaries thereto. These include Contact and Non-Contact Recreation ("REC-1" and "REC-2", respectively), Preservation of Biological Habitats of Special Significance ("BIOL"), Estuarine Habitat ("EST"), Wildlife Habitat ("WILD"), Rare, Threatened, or Endangered Species ("RARE"), Marine Habitat ("MAR"), and Migration of Aquatic Organisms ("MIGR"). Successful habitat management benefits multiple Beneficial Uses. Native habitat and its vegetation offer sustainable biological infrastructure for native wildlife including rare, threatened, or endangered species. Native upland habitats provide a critical buffer to urban watersheds. Native vegetation best mimics predevelopment conditions in intercepting precipitation, slowing its velocity and helping to infiltrate the ground surface. Established native vegetation communities sustainably stabilize soil, preventing excess sediment contributions to receiving water bodies. Implementation of the proposed SEP furthers the San Diego Water Board's Practical Vision by implementing wetland and riparian area restoration and recovery.

12. **Public Benefits of the SEP**: The public, both within and downstream of Rossini Creek, was impacted by the effects of the sediment discharges. The SEP proposes to restore water quality functions in the San Elijo Lagoon Ecological Preserve, which is in the same watershed affected by the discharges. The San Elijo Lagoon Ecological Preserve is an established ecological reserve that offers hiking, bird watching, and volunteer and educational opportunities to the public at large. Habitat management work proposed in the SEP is part of a larger restoration plan, implemented through the San Elijo Lagoon Conservancy.

13. **SEP Completion Date**: SEP milestones shall be completed in their entirety no later than July 15, 2020 (the "SEP Completion Period"). In the event that compliance with the SEP Completion Period in this Order becomes unachievable, despite the timely good faith efforts of the City, due to circumstances beyond the control of the City or its agents, employees, contractors, consultants and any other person acting on the City's behalf, and which could not have been reasonably foreseen and prevented or minimized by the exercise of due diligence by the City, the City shall notify the Assistant Executive Officer in writing within thirty (30) days of the date that the City first knew of the event or circumstance that caused or would cause a violation of this Order. The notice shall describe the reason for the nonperformance and specifically refer to this Paragraph. The notice shall describe the anticipated length of time the delay may persist, the cause or causes of the delay, the measures taken or to be taken by the City to minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The City shall adopt all reasonable measures to avoid and minimize such delays. The determination as to whether the circumstances

were beyond the reasonable control of the City and its agents will be made by the Assistant Executive Officer. Where the Assistant Executive Officer concurs that compliance was or is impossible, despite the timely good faith efforts of the City, due to circumstances beyond its control that could not have been reasonably foreseen and prevented by the exercise of reasonable diligence by the City, a new final compliance deadline shall be established but shall not exceed one (1) additional year. Where the Assistant Executive Officer does not concur that compliance was or is impossible, the matter will be scheduled for hearing before the San Diego Water Board, or its delegee, and the suspended liability amount will not become due and payable pursuant to Paragraph 8 unless the San Diego Water Board or its delegee upholds the Assistant Executive Officer's determination.

14. **Agreement for the City to Fund, Report and Guarantee Implementation of SEP**: The City represents that: (1) the SEP is unrelated in scope to the actions completed to remedy issues with Complaint No. R9-2013-0152, and not otherwise required by law; (2) It will fund the SEP in the amount as described in this Order; (3) It will provide certifications and written quarterly reports to the San Diego Water Board consistent with the terms of this Order detailing the implementation of the SEP; and (4) It will guarantee implementation of the SEP identified in Attachment A by remaining liable for $206,393 of suspended administrative liability until the SEP is completed and accepted by the San Diego Water Board in accordance with the terms of this Order. The City agrees that the San Diego Water Board has the right to require an audit of the funds expended to implement the SEP.

15. **SEP Oversight**: The City agrees to oversee implementation of the SEP. Additional oversight of the SEP will be provided by the San Diego Water Board. The City is solely responsible for paying for all reasonable oversight costs incurred by the San Diego Water Board to oversee the SEP. The SEP oversight costs are in addition to the total administrative civil liability imposed against the City and are not credited toward the City's obligation to fund the SEP. Reasonable oversight tasks to be performed by the San Diego Water Board include but are not limited to, updating CIWQS and SMARTS, reviewing and evaluating progress, conducting annual site inspections, reviewing the final completion report, verifying completion of the project with a site inspection, and auditing appropriate expenditure of the funds.

16. **SEP Publicity**: Whenever the City publicizes the SEP or results of the SEP, it will state in a prominent manner that the project is being undertaken as part of the settlement of a Water Board enforcement action.

17. **Submission of SEP Monitoring Reports**: The City agrees to submit quarterly monitoring reports to the San Diego Water Board. Quarterly monitoring reports will be due on the 15th day of April, July, October, and February and will include information relating to SEP implementation progress.

18. **Certification of Completion of SEP and Final Report**: On or before the SEP Completion Period (or no later than July 15, 2021, if an extension to the completion date is approved by the Assistant Executive Officer), the City shall submit a certified statement of completion of the SEP ("Certification of Completion"). The Certification of Completion shall be submitted under penalty of perjury, to the San Diego Water Board Party Contact and the State Water Resources Control Board's Division of Financial Assistance, by a responsible corporate official representing the City. The Certification of Completion shall include the following:

a. Certification that the SEP has been completed in accordance with the terms of this Stipulated Order. Such documentation should include photographs, invoices, receipts, certifications, and other materials reasonably necessary for the San Diego Water Board to evaluate the completion of the SEP and the costs incurred by the City.

b. Certification, under penalty of perjury, that the City followed all applicable environmental laws and regulations in the implementation of the SEP including but not limited to the California Environmental Quality Act ("CEQA"), the federal Clean Water Act, and the Porter-Cologne Act. To ensure compliance with CEQA where necessary the City shall provide the San Diego Water Board with the following documents from the lead agency *prior to commencing SEP implementation* if applicable:

i. Categorical or statutory exemptions relied upon by the Implementing Party;
ii. Negative Declaration if there are no potentially "significant" impacts;
iii. Mitigated Negative Declaration if there are potentially "significant" impacts but revisions to the project have been made or may be made to avoid or mitigate those potentially significant impacts; or
iv. Environmental Impact Report ("EIR")

19. **Approved SEP**: In the event that the City is not able to demonstrate to the reasonable satisfaction of the San Diego Water Board staff that the entire SEP Amount has been spent to complete the components of the SEP, for which the City is financially responsible, the City shall pay the difference between the Suspended Administrative Civil Liability and the amount the City can demonstrate was actually spent on the SEP, as an administrative civil liability. The City shall pay the additional administrative liability

within 30 days of its receipt of notice of the San Diego Water Board staff's determination that the City has failed to demonstrate that the entire SEP Amount has been spent to complete the SEP components.

20. **San Diego Water Board Acceptance of Completed SEP**: Upon the City's satisfaction of its obligations to complete the SEP under this Order or any related audit requested by the San Diego Water Board, San Diego Water Board staff shall send the City a letter recognizing satisfactory completion of its obligations under the SEP. This letter shall terminate any further SEP obligations of the City and result in a permanent stay of the $206,393 in administrative civil liability imposed on the City by this Order.

21. **Third Party Financial Audit of SEPs**: At the written request of the San Diego Water Board Executive Officer or designee, the City, at its sole cost, shall submit a report prepared by an independent third party(ies) acceptable to the San Diego Water Board staff providing such party's(ies') professional opinion that the City has expended money in the amounts claimed by the City on the SEP Project. The written request shall specify the reasons why the audit is being requested. The audit report shall be received by the San Diego Water Board staff within ninety (90) days of notice from San Diego Water Board staff to the City of the need for an independent third party audit. The audit need not address any costs incurred by the San Diego Water Board for oversight.

Section III: Orders

The Parties stipulated to the following:

22. **Incorporation of Terms**: The Parties incorporate Paragraphs 1 through 21 by this reference as if set forth fully herein, stipulate to the entry of this Order as set forth below, and recommend that the San Diego Water Board issue this Order to effectuate the settlement.

23. **Administrative Civil Liability**: The City hereby agrees to pay the administrative civil liability totaling $430,851 as set forth in Paragraph 8 of Section II herein. Within thirty (30) days of the effective date of this Order, City agrees to remit, by check, TWO HUNDRED TWENTY FOUR THOUSAND FOUR HUNDRED FIFTY EIGHT DOLLARS ($224,458), payable to the *State Water Pollution Cleanup and Abatement Account*, and shall indicate on the check the number of this Order. The City shall send the original signed check referencing this Order number to the Division of Administrative Services ATTN: Accounting, State Water Resources Control Board, 1001 I Street 18th Floor, Sacramento, California 95814 and shall send a copy to the Prosecution Staff at the

address listed below. Further, the Parties agree that the remaining $206,393 in administrative civil liability shall be suspended pending completion of the SEP as set forth in Paragraphs 8 through 21 in Section II herein.

24. **Compliance with Applicable Laws**: The City understands that payment of administrative civil liability in accordance with the terms of this Stipulated Order and or compliance with the terms of this Stipulated Order is not a substitute for compliance with applicable laws, and that continuing violations of the type alleged in the Complaint may subject it to further enforcement, including additional administrative civil liability.

25. **Party Contacts for Communications related to Stipulated Order**:

For the Prosecution Staff:
Rebecca Stewart
Sanitary Engineering Associate
California Regional Water Quality Control Board, San Diego Region
2375 Northside Drive, Suite 100
San Diego, California 92108

For the City:
Glenn Pruim
Director of Engineering & Public Works
City of Encinitas
505 South Vulcan Avenue
Encinitas, California 92024

26. **Attorney's Fees and Costs**: Except as otherwise provided herein, each Party shall bear all attorneys' fees and costs arising from the Party's own counsel in connection with the matters set forth herein.

27. **Matters Addressed by Order**: Upon the San Diego Water Board's adoption of this Stipulated Order, this Order represents a final and binding resolution and settlement of the violations alleged in the Complaint, and all claims, violations or causes of action that could have been asserted against the City as of the effective date of this Stipulated Order based on the specific facts alleged in the Complaint or this Order ("Covered Matters"). The provisions of this Paragraph are expressly conditioned on the payment of the administrative civil liability, and completion of the SEP in accordance with this agreement.

28. **Public Notice**: The City understands that the San Diego Water Board will conduct a 30-day public review and comment period prior to consideration and adoption. If significant new information is received that reasonably affects the propriety of presenting this Stipulated Order to the San Diego Water Board for adoption, the Assistant Executive Officer may unilaterally declare this Stipulated Order void and decide not to present it to the San Diego Water Board. The City agrees that it may not rescind or otherwise withdraw its approval of this proposed Stipulated Order.

29. **Addressing Objections Raised During Public Comment Period**: The Parties agree that the procedure contemplated for the San Diego Water Board's adoption of the settlement by the Parties and review by the public, as reflected in this Stipulated Order, will be adequate. In the event procedural objections are raised prior to the Stipulated Order becoming effective, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the procedure as necessary or advisable under the circumstances.

30. **No Waiver of Right to Enforce**: The failure of the Prosecution Staff or San Diego Water Board to enforce any provision of this Stipulated Order shall in no way be deemed a waiver of such provision, or in any way affect the validity of the Order. The failure of the Prosecution Staff or San Diego Water Board to enforce any such provision shall not preclude it from later enforcing the same or any other provision of this Stipulated Order.

31. **Procedural Objections**: The Parties agree that the procedure contemplated for adopting the Order by the San Diego Water Board and review of this Order by the public is lawful and adequate. In the event procedural objections are raised prior to the Order becoming effective, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the procedure as necessary or advisable.

32. **Interpretation**: This Stipulated Order shall be construed as if the Parties prepared it jointly. Any uncertainty or ambiguity shall not be interpreted against any one Party.

33. **Modification**: This Stipulated Order shall not be modified by any of the Parties by oral representation made before or after its execution. All modifications must be in writing, signed by all Parties, and approved by the San Diego Water Board.

34. **If Order Does Not Take Effect**: In the event that this Stipulated Order does not take effect because it is not approved by the San Diego Water Board or is vacated in whole or in part by the State Water Board or a court, the Parties acknowledge that they expect to proceed to a contested evidentiary hearing before the San Diego Water Board, on a future date after reasonable notice and opportunity for preparation, to determine whether to assess administrative civil liabilities for the underlying alleged violations, unless the Parties agree otherwise. The Parties agree that all oral and written statements and agreements made during the course of settlement discussions will not be admissible as evidence in the hearing. The Parties agree to waive any and all objections based on settlement communications in this matter, including, but not limited to:

a. Objections related to prejudice or bias of any of the San Diego Water Board members or their advisors and any other objections that are premised in whole or in part on the fact that the San Diego Water Board members or their advisors were exposed to some of the material facts and the Parties' settlement positions as a consequence of reviewing the Order and/or the Order, and therefore may have formed impressions or conclusions prior to any contested evidentiary hearing on the Complaint in this matter; or,

b. Laches or delay or other equitable defenses based on the time period for administrative or judicial review to the extent this period has been extended by these settlement proceedings.

35. **Waiver of Hearing**: The City has been informed of the rights provided by California Water Code section 13323(b), and hereby waives its right to a hearing before the San Diego Water Board prior to the adoption of the Order.

36. **Waiver of Right to Petition**: The City hereby waives its right to petition the San Diego Water Board's adoption of the Order as written for review by the State Water Board, and further waives its rights, if any, to appeal the same to a California Superior Court and/or any California appellate level court.

37. **Covenant Not to Sue**: The City covenants not to sue or pursue any administrative civil claim(s) against any State Agency or the State of California, its officers, Board Members, employees, representatives, agents, or attorneys arising out of or relating to any Covered Matter.

38. **San Diego Water Board is Not Liable**: Neither the San Diego Water Board members nor the San Diego Water Board staff, attorneys, or representatives shall be liable for any injury or damage to persons or property resulting from acts or omissions by the City, its directors, officers, employees, agents, representatives or contractors in carrying out activities pursuant to this Stipulated Order.

39. **Authority to Bind**: Each person executing this Stipulated Order in a representative capacity represents and warrants that he or she is authorized to execute this Stipulated Order on behalf of and to bind the entity on whose behalf he or she executes the Order.

40. **No Third Party Beneficiaries**: This Stipulated Order is not intended to confer any rights or obligations on any third party or parties, and no third party or parties shall have any right of action under this Stipulated Order for any cause whatsoever.

41. **Effective Date**: This Stipulated Order shall be effective and binding on the Parties upon the date the San Diego Water Board enters the Order.

42. **Counterpart Signatures**: This Stipulated Order may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one document.

43. **Severability:** The provisions of this Stipulated Order are severable; should any provision be found invalid, the remainder shall remain in full force and effect.

IT IS SO STIPULATED

California Regional Water Quality Control Board Prosecution Staff
San Diego Region

By: _____
James G. Smith, Assistant Executive Officer

Date: 13 Apr 2015

Order No. R9-2015-0047

City of Encinitas

By: _____
Larry Watt, Interim City Manager

Date: 4/9/2015

ATTACHMENT A: Proposed SEP

Section IV: Findings of the San Diego Water Board[1]

44. The San Diego Water Board incorporates Paragraphs 1 through 43 by this reference as if set forth fully herein.

45. The San Diego Water Board finds that the Recitals set forth herein in Section II are true.

46. In accepting this settlement, the San Diego Water Board has considered, where applicable, each of the factors prescribed in CWC sections 13327 and 13385. The San Diego Water Board's consideration of these factors is based upon information obtained by the San Diego Water Board's staff in investigating the allegations in the Complaint or otherwise provided to the San Diego Water Board. In addition to these factors, this settlement recovers the costs incurred by the staff of the San Diego Water Board identified in Complaint No. R9-2013-0152.

47. This is an action to enforce the laws and regulations administered by the San Diego Water Board. The San Diego Water Board finds that issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000 et seq.), in accordance with section 15321(a)(2), Title 14, of the California Code of Regulations.

48. The San Diego Water Board's Executive Officer is hereby authorized to refer this matter directly to the Attorney General for enforcement if the City fails to perform any of its obligations under this Order.

49. Fulfillment of the City's obligations under the Order constitutes full and final satisfaction of any and all liability for each claim in the Complaint in accordance with the terms of the Order.

50. The attached Agreement between the Assistant Executive Officer and the City is approved pursuant to Government Code section 11415.60 and is incorporated by reference into this Order.

[1] These findings by the Board or its delegee may be modified prior to adoption without requiring amendment of the settlement agreement between the Parties.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by delegated authority granted to me from the California Regional Water Quality Control Board, San Diego Region.

David W. Gibson

DAVID W. GIBSON
Executive Officer

Date: 1 June 2015

San Elijo Lagoon CONSERVANCY
Connecting communities. Protecting nature.

ENHANCEMENT OF NATIVE HABITATS IN SAN ELIJO LAGOON ECOLOGICAL RESERVE ENCINITAS, CALIFORNIA

A PROPOSAL TO CITY OF ENCINITAS FROM SAN ELIJO LAGOON CONSERVANCY

Prepared: July 2014
Revised: April 2015

PREPARED FOR:
City of Encinitas
505 S. Vulcan Ave.
Encinitas, CA 92024

Contact: Erik Steenblock

PREPARED BY:
San Elijo Lagoon Conservancy
P.O. Box 230634
Encinitas, CA 92023-0634

Contact:
David Varner, Resource Management Director

Table of Contents

List of Preparers:

Doug Gibson, Executive Director/Principal Scientist
David Varner, Resource Management Director
Angelique Herman, Restoration Ecologist
Michelle Tateyama, GIS and Database Manager
Nick Regoli, Associate Biologist
Lydia Cobb, Outreach Consultant

1.0 Introduction

This document serves as the proposal by San Elijo Lagoon Conservancy (SELC) to City of Encinitas to perform a Supplemental Environmental Project (SEP) to compensate for sediment discharge infractions into Rossini Creek. The proposed Enhancement of Native Habitats in San Elijo Lagoon Ecological Reserve Project (Project) will treat and control various invasive plant species and enhance associated native habitats in San Elijo Lagoon Ecological Reserve (SELER), and further engage neighboring communities in volunteer-based habitat enhancement activities.

2.0 Site Description

San Elijo Lagoon Ecological Reserve lies between Solana Beach, California and the community of Cardiff-by-the-Sea in Encinitas, California (Figure 1). The reserve extends upstream along the Escondido Creek riparian corridor toward the communities of Olivenhain and Rancho Santa Fe. Contained within the reserve are approximately 979 acres of native and disturbed habitats. The majority of the land area within the reserve is comprised of coastal salt marsh, alkali marsh, freshwater marsh, coastal sage scrub, chaparral, and riparian scrub vegetation communities. Coastal strand, degraded grassland and salt pan communities are also present but comprise a smaller percentage of land area.

The Project area is a combination of public (County of San Diego, State of California) and private ownership. SELC is the only private landowner in SELER. SELC is engaged in a cooperative Memorandum of Understanding with the other landowners, and is tasked with habitat management activities in the reserve, therefore SELC has all access and landowner permission to perform work as proposed in this proposal.

3.0 Program History

San Elijo Lagoon Conservancy, on behalf of Carlsbad Watershed Network, secured funding in 2004/2005 from the State Water Resources Control Board and Wildlife Conservation Board for the Enhancement of Riparian/Wetland Habitat throughout the Carlsbad Hydrologic Unit (CHU). Since then, CHU Invasive Species Control and Habitat Restoration Program (Program) has enhanced and protected 450 acres of native habitats through the removal and control of invasive plants and subsequent native plant revegetation. Watershed-specific invasive plant management plans were developed to promote sustainable approaches and improve treatment efficiency. The program was a success, in that valuable acreage of wetland and other native habitats were enhanced. The program was a first of its kind, merging watershed and plant ecology disciplines to develop management strategies for numerous invasive plants in order to restore and protect native habitats throughout such a large area.

Program activities directly and indirectly benefit at-risk, native species in the region by reducing threat by non-native species invasions and increasing habitat connectivity through native plant revegetation. While acreage of habitat enhanced is much higher (due to natural recruitment following invasive plant treatment) the Program has revegetated more than 19 acres of CHU lands with target habitat-appropriate native plants. This Project will build on the success of the Program's past efforts and concentrate its focus on areas within SELER.

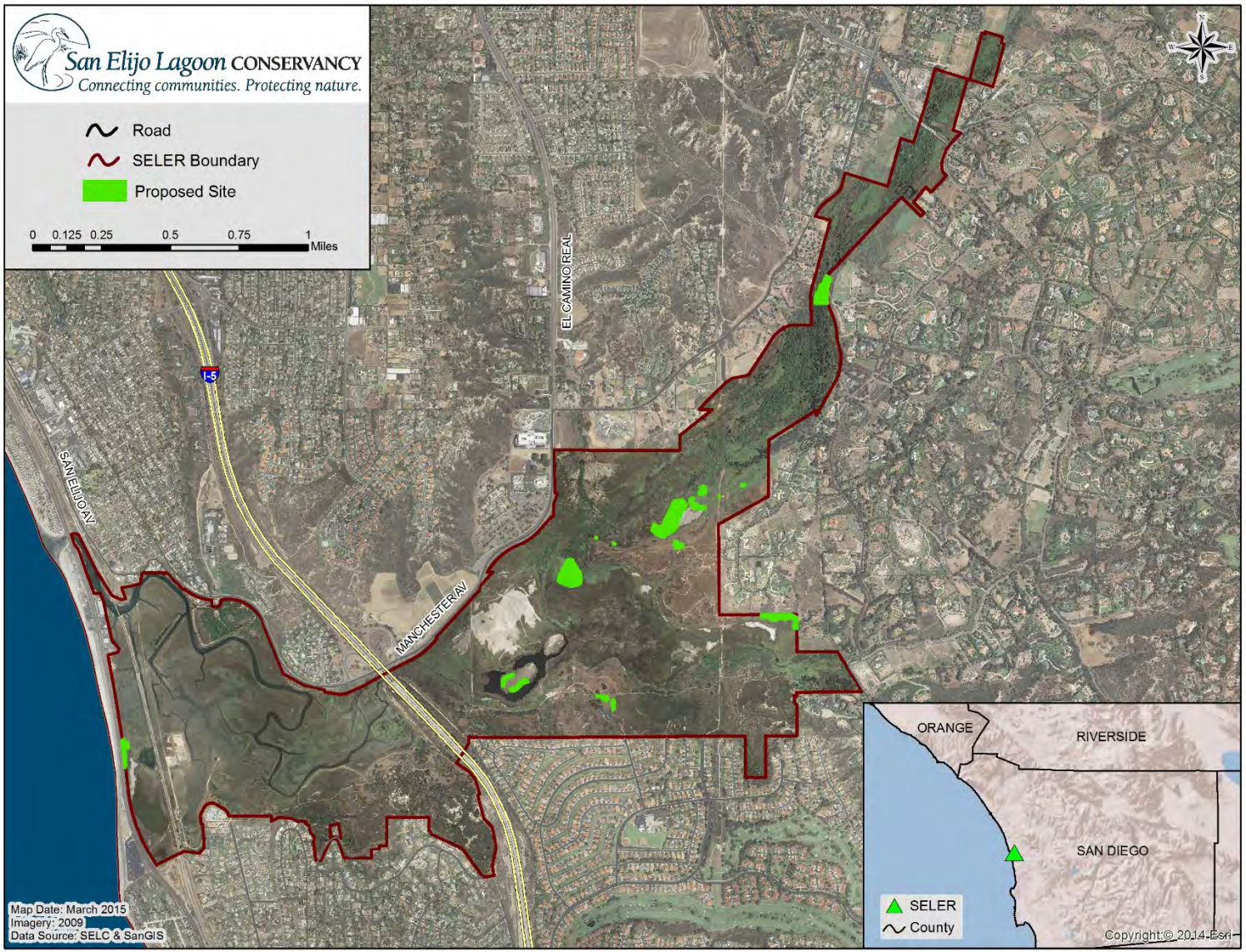

Figure 1: San Elijo Lagoon Ecological Reserve with proposed treatment sites displayed in green.

4.0 Project Goals

San Elijo Lagoon is the receiving water body of Rossini Creek, which has a channel less than one mile in length. Much of the creek channel is on small, privately owned parcels. Since the landowner of the single, largest parcel, has refused to participate in resource mitigation activities, San Elijo Lagoon offers the most effective, local option for resource protection activities to mitigate for impacts to Rossini Creek. Habitat management benefits multiple resources, including water quality. Native habitat and its vegetation offer sustainable, biological infrastructure that intercepts precipitation, slowing its velocity and helping to infiltrate the ground surface, and supplements soil moisture and shallow aquifers. Established native vegetation communities sustainably stabilize soil, preventing excess sediment contributions to receiving water bodies. This Project proposes to complement existing Conservancy-led, habitat enhancement efforts, and accomplish the following goals:

1. Control invasive vegetation at several riparian sites in San Elijo Lagoon Ecological Reserve
2. Enhance native vegetation communities in San Elijo Lagoon Ecological Reserve

4.1 Project Component One: Invasive Vegetation Control: Tamarisk

4.1.1 Existing Site Conditions and Previous Enhancement Activities Performed

The portion of Escondido Creek corridor north of Stonebridge Mesa has the highest prevalence of tamarisk (*Tamarix ramosissima* and *T. parviflora*) (Figure 2). Tamarisk species infest 7.92 acres of riparian habitat in the Project area. The approximate percent cover of tamarisk within the individual polygons ranges between 80–100%. Both tamarisk species present have a California Invasive Plant Council (Cal-IPC) rating of *High*, causing "severe ecological impacts on ecosystems, plant and animal communities, and vegetation structure". Their reproductive biology and other attributes are conductive to moderate to high rates of dispersal and establishment (Warner et al 2003). SELC has performed invasive species control in SELER since 2004 and has targeted giant reed (*Arundo donax*), perennial pepperweed (*Lepidium latifolium*), and yellow-flag iris (*Iris pseudacorus*) in the vicinity of the tamarisk infestations (Figure 3).

While the original proposal included the removal of invasive palm species from areas of San Elijo Lagoon Ecological Reserve, we feel that SEP funds would be better used by focusing on the comprehensive removal of tamarisk, which is a known high consumer of water quantity, and has disrupting effect on soil ecology and surrounding vegetation (California Invasive Plant Council, 2006). A contributing factor to the decision is that other funds are available (under an existing Integrated Regional Water Management-funded Project) to pay for the treatment of invasive palm species. The palms will be addressed, just not as a component of this SEP proposal.

Figure 2: Tamarisk is interspersed among native marsh and riparian vegetation in San Elijo Lagoon Ecological Reserve.

4.1.2 Reference Site Description

A reference site is not needed for this section because revegetation is not a proposed action associated with this Project component.

4.1.3 Proposed Project and Methods

SELC proposes to treat and control 7.92 acres of invasive tamarisk in the riparian corridor of Escondido Creek in SELER as a means to enhance hydraulic function to the waterway. Invasive plant populations will be controlled by a combination of manual and chemical means and herbicide will be applied by licensed and insured contractors. Tamarisk will be broadcast sprayed. SELC will use glyphosate- and triclopyr-based herbicides that are certified by the U.S. Environmental Protection Agency for use in and around wetlands. Treated plants will be left standing for 2–3 months to allow the herbicide to fully translocate to the roots, after which treated biomass will be reduced. If adequate moisture is available in the soil, tamarisk will reproduce vegetatively through branches. To avoid this, tamarisk biomass will be taken offsite or moved to an upland location where the pile can be monitored as it composts.

4.1.4 Performance Criteria

Live tamarisk will be <1% absolute cover at the conclusion of the five-year monitoring period. Monitoring details including rationale and methodology are included in *Section 5.0 Performance Criteria Rationale, Methods, and Summary*.

4.2.5 Short- and Long-term Effects of Proposed Project

Large amounts of biomass from invasive plant populations block stream flow and increase sedimentation in the stream, which in turn degrades water quality. Tamarisk species are also known to cause changes in groundwater availability through increased transpiration rates, as compared to native riparian vegetation. Tamarisk can alter soil chemistry by hyper-concentration of salts in leaf tissues, out-competing the native plant community, and decreasing native species diversity in impacted areas. Positive outcomes of tamarisk removal include: increased stream flow rates, decreased sedimentation, greater availability of groundwater, balanced soil chemistry, and increased biodiversity (California Invasive Plant Council, 2006).

Short-term detrimental effects could include temporary disturbance to birds and other wildlife in the vicinity of the tamarisk. This effect is mitigated by performing the work outside of nesting bird season (Section 8.0 Project Compliance). Mild impacts to native vegetation and slight soil compaction may occur as a result of off-trail foot traffic resulting from accessing the tamarisk. Since the tamarisk is exclusively found in salt marsh habitat within SELER, existing trails do not provide access to tamarisk-infested areas. Impacts to native salt marsh vegetation and soil will be reduced as much as possible throughout the course of the Project. SELC does not believe there are any known long-term detrimental effects resultant of this Project.

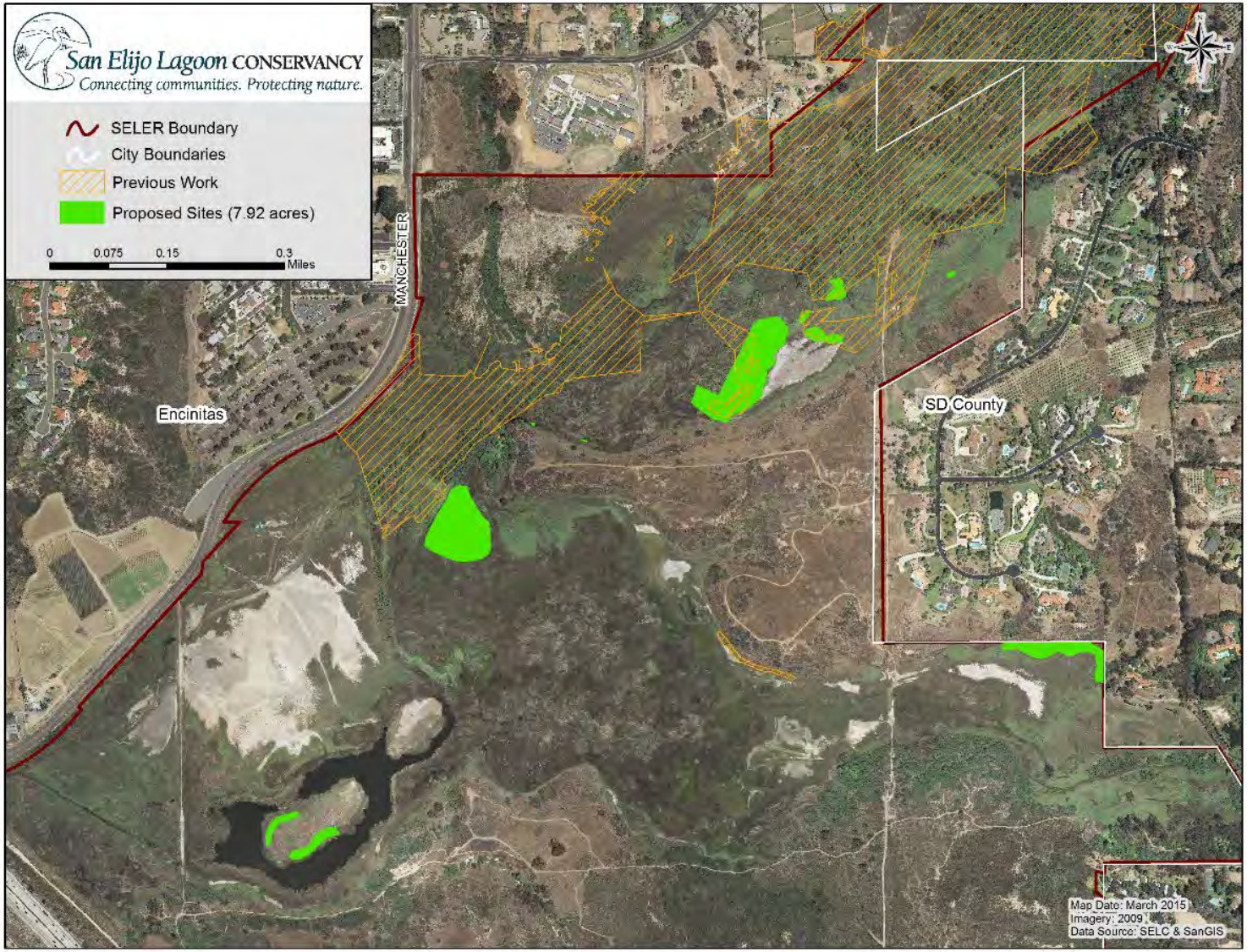

Figure 3: Tamarisk infestations in the East Basin of San Elijo Lagoon Ecological Reserve; all infestations fall within City of Encinitas municipal boundaries.

4.2 Project Component Two: Invasive Tree Control on Escondido Creek Floodplain

4.2.1 Existing Site Conditions and Previous Enhancement Activities Performed

SELC proposes to use Project resources to fund an on-going invasive tree eradication and riparian habitat enhancement along Escondido Creek within and adjacent to SELER (Figure 6). SELC began this effort in 2011, and since has removed invasive trees (primarily gum tree (*Eucalyptus* spp.)) from almost 2 acres of riparian habitat and revegetated with more than 2000 native plants including 718 willows (*Salix goodingii* and *Salix lasiolepis*). In addition to controlling invasive trees, SELC has targeted other invasive species within the riparian corridor including: giant reed, perennial pepperweed, and yellow-flag iris in this part of the reserve. The Project proposes to remove an additional 1.5 acres of invasive trees. The proposed enhancement area runs along the east side of Escondido Creek adjacent to the previous riparian enhancement area.

The proposed site consists of approximately 75% absolute cover of gum tree species (*Eucalyptus globulus* and *Eucalyptus camaldulensis*) (Figure 4). The vegetation existing on the proposed site is described as 3.2 *Eucalyptus* (*globulus, camaldulensis*) Semi-Natural Stands (Sproul et al. 2011) or 79100 *Eucalyptus* Woodland (Oberbauer et al. 2008). Beneath the gum tree canopy, another layer of non-native tree/shrub species is present on the site and includes: Brazilian pepper tree (*Schinus terebinthifolius*), golden wattle (*Acacia longifolia*), Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), and tamarisk (*Tamarix ramossissima* and *Tamarix parviflora*). This layer of non-native tree/shrubs comprises approximately 25% absolute cover. Most of these non-native species are considered 'invasive' by Cal-IPC (Table 1). Native shrubs are present on the site but comprise only 7% cover combined. The majority of the native shrub cover is comprised of mule fat (*Baccharis salicifolia*) and willow species (*Salix goodingii* and *Salix lasiolepis*). Native herbs consist of approximately 30% absolute cover and consist of mostly yerba mansa (*Anemopsis californica*). The native species richness of the proposed site is 26. The total absolute cover is approximately 100%.

Table 1: Non-native tree/shrub species present with associated Cal-IPC rating

Common Name	Scientific Name	Cal-IPC rating
red gum	*Eucalyptus camaldulensis*	moderate
blue gum	*Eucalyptus globulus*	limited
Brazilian pepper tree	*Schinus terebinthifolius*	limited
golden wattle	*Acacia longifolia*	not rated
Mexican fan palm	*Washingtonia robusta*	moderate
Canary Island date palm	*Phoenix canariensis*	limited
saltcedar	*Tamarix ramossissima*	high
small-flowered tamarisk	*Tamarix parviflora*	high

Figure 4: Gum tree species comprise the majority of tree cover within the proposed riparian enhancement site.

4.2.2 Reference Site Description

A reference site for comparison was chosen in an upstream section of Escondido Creek less than 200 feet from the proposed enhancement site (Figure 5). The reference site has a similar topographic position, aspect, and soil texture. The reference site is characterized as 3.10 *Salix lasiolepis* Alliance/*Salix lasiolepis* Association (Sproul et al. 2011) or 63320 Southern Willow Scrub (Oberbauer et al. 2008). The reference site consists of 75% absolute cover of arroyo willow. Other prevalent species include mule fat, Southern cat-tail (*Typha domingensis*), California tule (*Schoenoplectus californicus*), coyote brush (*Baccharis pilularis*), and poison oak (*Toxicodendron diversilobum*). The herb layer consists of mostly mugwort (*Artemisia douglasiana*), yerba mansa, and western flat-topped goldenrod (*Euthamia occidentalis*). The total absolute cover is approximately 100%. The native species richness is 26.

Figure 5: The riparian reference site is dominated by native willow species.

4.2.3 Proposed Project and Methods

SELC proposes to treat all non-native tree/shrub species within the 1.5 acre enhancement site along the riparian corridor of Escondido Creek in SELER. The majority of non-native trees in the site belong to the genus *Eucalyptus* and it is estimated that approximately 530 trees will be removed during the course of this Project. Invasive tree populations will be controlled by a combination of manual and chemical means. Herbicides will be applied by licensed and insured contractors using glyphosate- and triclopyr-based herbicides that are certified by the U.S. Environmental Protection Agency for use in and around wetlands. The majority of the non-native trees will be cut near the base of the trunk and 100% concentration of herbicide will be applied to the vascular cambium soon after the cut is made to increase effectiveness. All roots will be left in place to minimize soil erosion and maintain stream bank stabilization. The majority of the above-ground biomass will be cut and mulched. The mulch will be applied to the site to a maximum depth of 4" and only utilized in areas lacking native herbaceous groundcover. Excess mulch will be spread on existing trails within SELER. Select trees may be drilled and injected with herbicide and left standing to create perching structures for raptors and habitat for other wildlife. The target invasive tree species can re-sprout vigorously from cut stumps or branches so a comprehensive re-treatment program will be implemented following the onset of the Project and frequent monitoring will continue for up to five years. After the completion of the five-year Project, the site will continue to be monitored on a periodic basis by Program staff to insure Project success.

Areas where large infestations of invasive plant species are removed leave open space, primed for re-infestation of the same or different invasive plant species. Project Component Three, detailed below (Section 4.3), targets this challenge by installing and fostering the growth of native riparian within the enhancement area.

4.2.4 Performance Criteria

After the completion of the five-year Project, the proposed site will have <1% absolute cover of non-native tree/shrub species. Monitoring details including rationale and methodology are included in *Section 5.0 Performance Criteria Rationale, Methods, and Summary*.

4.2.5 Short- and Long-term Effects of Proposed Project

Positive effects of removing invasive trees from Escondido Creek corridor including improving water quality and habitat quality for native flora and fauna. Stand density of gum tree species, in particular, is higher within the proposed enhancement site than exists among native vegetation. High densities of gum tree lead to surface water flow blockages, high rates of evapotranspiration, sunlight blockage, and decreased diversity of other species (California Invasive Plant Council, 2006). Unlike gum tree stands, native vegetation hosts diverse assemblages of native species that have greater potential to uptake aquatic pollutants, filter sediment and debris, and in-turn improve water quality (Peterson, 2006). Native riparian vegetation provides habitat for native wildlife, including the federally endangered Least Bell's Vireo (*Vireo bellii pusillus*).

Short-term detrimental effects could include temporarily reducing the overall tree cover of the discrete enhancement area. This effect is mitigated by removing non-native tree cover in a relatively small area (1.5 acres) at a time and allowing for the native vegetation to fill in to the site prior to continuing the non-native tree removal downstream. In this way, the overall woody cover of this stretch of Escondido Creek does not experience periods of low cover. SELC does not believe there are any known long-term detrimental effects resultant of this Project. All short-term detrimental effects have been mitigated by measures included in SELC's Mitigated Negative Declaration (Section 8.0 Project Compliance).

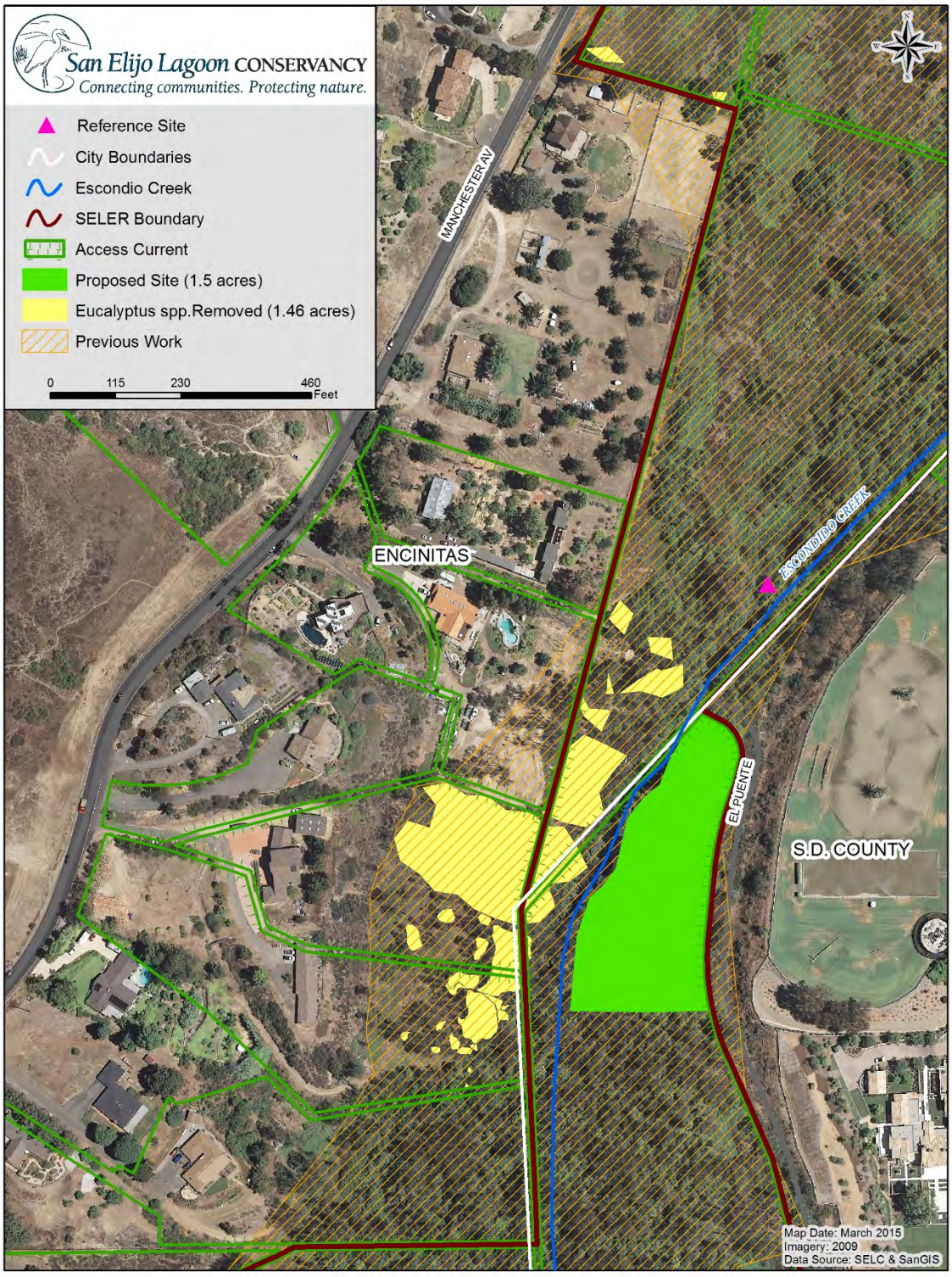

Figure 6: Escondido Creek riparian area in San Elijo Lagoon Ecological Reserve, where Conservancy staff have undertaken to enhance native riparian habitats; yellow polygons indicate areas where Eucalyptus have already been removed; green polygon indicates the proposed tree removal (Component Two) and the proposed riparian habitat enhancement site (Component Three). Encinitas municipal boundary roughly follows Escondido Creek at this reach, dissecting some Eucalyptus infestations.

4.3 Project Component Three: Enhancement of Riparian Habitats

4.3.1 Existing Site Conditions and Previous Enhancement Activities Performed

Existing site conditions and previous enhancement activities are described in section 4.2.1. SELC proposed to enhance the 1.5 acre non-native tree removal site by revegetating with native plants.

4.3.2 Reference Site Description

The riparian reference site is described in section 4.2.2.

4.3.3 Proposed Project and Methods

Based on the reference site described in section 4.2.2, the Project will aim to achieve vegetation communities described as 3.10 *Salix lasiolepis* Alliance/*Salix lasiolepis* Association (Sproul et al. 2011) or 63320 Southern Willow Scrub (Oberbauer et al. 2008). The planting palette selected for this Project component (Table 2) was inspired by the dominant species present in the reference site. Most plants will be installed as 1-gallon container plants with developed root systems. The plants will be installed near the onset of the winter rain and will be hand watered at the discretion of SELC staff for up to one year after the installation. Supplemental water in excess of one year post-installation is not anticipated for this Project component since this section of Escondido Creek flows year-round and retains a high water table. Typical watering regime occurs every two weeks between December and July, after which the plants are allowed to equilibrate with the natural hydrology of the area. Hand watering might be reduced if natural rainfall is sufficient. Succession planting will occur in years two and three as needed based on the survivorship of the previous years. Additional plants will be installed in years two and three as needed in order to meet the performance criteria. Maintenance of the site including weed control will continue on a frequent basis during years one through three and then on a periodic basis as needed for years four and five. Site weeding will take place as frequently as needed in order to insure high survivorship rates of installed plants and in order to meet the performance criteria at the conclusion of the Project. Due to the fast growth rates of riparian plant species, the site is expected to sustain itself with minimal intervention after the five-year period, however the site will be monitored by SELC Habitat Management Program after the conclusion of the Project in order to insure Project success.

Table 2: Riparian planting palette

Common Name	Scientific Name	Form
sycamore	*Platanus racemosa*	tree
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*	tree
coast live oak	*Quercus agrifolia*	tree
false indigo	*Amorpha fruticosa*	shrub
mule fat	*Baccharis salicifolia*	shrub
California wild rose	*Rosa californica*	shrub
Gooding's willow	*Salix gooddingii*	shrub
red willow	*Salix laevigata*	shrub
arroyo willow	*Salix lasiolepis*	shrub
yerba mansa	*Anemopsis californica*	herb
mugwort	*Artemisia douglasiana*	herb
San Diego sedge	*Carex spissa*	herb
salt grass	*Distichlis spicata*	herb
western flat topped goldenrod	*Euthamia occidentalis*	herb
salt heliotrope	*Heliotropium curassavicum*	herb

southwestern spiny rush	*Juncus acutus* ssp. *Leopoldii*	herb
Mexican rush	*Juncus mexicanus*	herb
marsh fleabane	*Pluchea odorata*	herb

4.3.4 Performance Criteria

After the completion of the five-year Project, the proposed site will achieve 75% native perennial cover (including herbs and woody species) relative to the reference site and have less than 5% absolute cover of non-native plant species. SELC expects an average survivorship rate of 50% for riparian areas averaged over the three years of plant installation. Survivorship of installed plants can be highly variable year-to-year, due to weather and other factors. SELC will install successive plantings in years two or three, as needed, in order to achieve the cover standards stated above as related to the reference site. Monitoring details including rationale and methodology are included in *Section 5.0 Performance Criteria Rationale, Methods, and Summary*.

4.3.5 Short- and Long-term Effects of Proposed Project

Short and Long-term effects are listed in section 4.2.5.

4.4 Project Component Four: Enhancement of Coastal Strand Habitats

4.4.1 Existing Site Conditions and Previous Enhancement Activities Performed

San Elijo Lagoon Conservancy, in partnership with U.S. Fish and Wildlife Service (USFWS) Coastal Program, initiated implementation of the project, *Coastal Dune Habitat Restoration in San Elijo Lagoon Ecological Reserve* in February 2011. The purpose of this project was to protect and increase the overall diversity of existing coastal dune strand, mudflat, and salt marsh habitat in the southwest corner of San Elijo Lagoon. Major project elements included the following:

1. Installation of fencing and signage to substantially discourage foot traffic and eliminate vehicular traffic;
2. Systematic trash and debris removal;
3. Biomass removal and control of invasive plant species;
4. Rehabilitation of areas subjected to biomass removal and re-vegetation of appropriate native dune vegetation where natural recruitment is not sufficient to enrich the seed bank;
5. Avifauna monitoring to document use, roosting, and nesting of resident and migrant bird species;
6. Vegetation monitoring for invasive plant control and to detect potential effects of habitat enhancement activities; and,
7. Education and outreach through community involvement in the project.

One component of the enhanced acreage included the conversion of areas dominated by dense, monotypic stands of arrowweed (*Pluchea sericea*) to southern coastal dune habitat. Low vegetative cover values and open areas of exposed sand are typical of high quality dune habitat as this scenario provides enough cover for ground nesting birds, but not so much that predators can easily hide. While arrowweed is native to eastern San Diego County, it is widely thought to have arrived at the coast by human transport. Although the site lacks some of the salt water inundation and wind transport events that are associated with a functioning dune system, SELC has been able to increase southern coastal dune habitat values at the site by managing arrowweed extent. It should be noted that this habitat type is highly impacted and reduced in southern California, and that the San Elijo site is home or is used by several rare species of plants and migratory birds.

Another component of the previous project was the collection and bulking of native dune plant seeds. SELC worked with a local nursery to refine techniques and accomplish this. Project implementation associated with USFWS Coastal Program funding was completed September 2014. Results of the previous project include enhancement of coastal dune habitat on almost three acres of remnant coastal strand and the development of effective protocols for enhancing and protecting southern coastal dune systems.

The proposed 0.47 acre enhancement site is heavily dominated by arrowweed and it represents approximately 99% cover. Several other native shrub species are present on the site but contribute <1% absolute cover combined. The native species richness of the site is ten. Native herbs are not present within the proposed site boundary.

4.4.2 Reference Site Description

A central area on the existing SELER sand dune was chosen for the reference site (Figure 7). As stated above, this area has been intensely managed for improved ecological functions and was chosen as the reference site due to its close proximity and lack of unmanaged functioning southern foredunes in the region. The reference site is characterized as 21230 Southern Foredunes (Oberbauer et al. 2008) and as such is largely unvegetated and mostly comprised of open sand. The reference site consists of 21% total cover all of which consists of herbs. Most of the herbs present are native and the dominant herb is coast woolly-heads (*Nemacaulis denudata* var. *denudata*) which consists of 15% absolute cover. Two non-native herbs are also present on the reference site but consist of <1% as a result of active management and weeding in the area. The native species richness of the site is 6.

Figure 7: Dune-endemic native wildflowers dominate the coastal sand dune reference site.

4.4.3 Proposed Project and Methods

SELC proposed to enhance southern foredune habitat by removing arrowweed from 0.47 acres and seeding the area with native forbs adding acreage to the Project that began in 2011 (Figure 8). Habitat restoration technicians will cut the arrowweed and immediately apply a triclopyr-based herbicide to the cut stump. A foliar re-treatment may be necessary and would be completed shortly after re-growth is observed. The cut foliar biomass of the arrowweed will be removed from the site. The nutrient-rich duff layer left behind from arrowweed will then be removed from the site to facilitate recruitment of native dune plants. Seed will be sustainably collected from the reference site, bulked at an offsite nursery, and then applied to the proposed enhancement area by hand. Species selected for seeding are listed in Table 3.

Table 3: Coastal strand planting palette

Common Name	Scientific Name	Form
beach sun cup	*Camissoniopsis cheiranthifolia* subsp. *suffruticosa*	herb
Nuttall's acmispon	*Acmispon prostratus*	herb
beach sand verbena	*Abronia umbellata*	herb
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	herb
coast woolly-heads	*Nemacaulis denudata* var. *denudata*	herb

4.4.4 Performance Criteria

Southern foredune habitat is characterized by mostly annual plant species and low vegetation cover. As such, the goals for this Project component are to obtain 10% or less absolute cover of woody perennial species and less than 5% absolute cover of non-native plant species. Annual herb presence and abundance varies drastically year to year based on rainfall and other climactic factors; therefore specifying an exact value for native herbaceous cover would be misconceived. The success of this component will depend on the proposed site having native herbaceous species richness of five and achieving 10-30% native herbaceous cover in proportion to that year's reference site conditions. Note that a range of herbaceous cover is used because high quality dune habitat has low cover; ground nesting avian species utilize minimal vegetative cover for shelter, and too much vegetative cover promotes their predation. Monitoring details including rationale and methodology are included in *Section 5.0 Performance Criteria Rationale, Methods, and Summary*.

4.4.5 Short- and Long-term Effects of Proposed Project

Short-term effects of this component include the reversal of the monotypic-forming stand of arrowweed that currently infests the remnant coastal dunes in SELER and expansion of native foredune habitat including the protection for plants that compose that habitat in SELER. Short-term detrimental effects could include disrupting wildlife temporarily while groups perform the work, although permit requirements prevent major disturbances. All short-term detrimental effects have been mitigated by measures included in SELC's Mitigated Negative Declaration (Section 8.0 Project Compliance).

A long-term effect is the contribution to the overall coastal strand habitat in northern San Diego County. The establishment of sustainable populations of dune plants, some of which are rare and protected, and the creation of high quality dune habitat that can be used by resident and migratory wildlife species, are long-term effects that will help to stabilize populations of several protected species. As such an impacted ecosystem type, each "postage stamp" sized habitat area is an important constituent of overall coastal strand integrity of San Diego's populated north county coastal area. An additional long-term effect at this site is that the control of the arrowweed now will prevent the infestation from increasing in size and

thereby prevent future, higher costs to control it later. SELC does not believe there are any known long-term detrimental effects resultant of this Project component.

Figure 8: Coastal Strand enhancement sites at San Elijo Lagoon Ecological Reserve.

4.5 Project Component Five: Enhancement of Coastal Sage Scrub Habitats

4.5.1 Existing Site Conditions and Previous Enhancement Activities Performed

Initiated in 2011, SELC began coastal sage scrub enhancement efforts in San Elijo Lagoon Ecological Reserve. The goal of enhancement was to convert non-native Mediterranean grassland to Diegan coastal sage scrub (CSS) by controlling the non-native grasses and installing native shrubs and forbs appropriate to the site. Over the past several years, SELC has installed and maintained 4235 native plants, converting 1.84 acres to CSS. As part of ongoing invasive species control programs, SELC has performed spot treatments on many acres surrounding the CSS enhancement areas in order to protect the work already done. The main species treated in the surrounding area have been fennel (*Foeniculum vulgare*), mustards (Brassicaceae family), iceplant (*Carpobrotus edulis*), tree tobacco (*Nicotiana glauca*), crown daisy (*Glebionis coronaria*), and tocalote (*Centaurea melitensis*) (Figure 11).

The proposed 0.48 acre enhancement sites are dominated by non-native Mediterranean annual grasses (Figure 9), classified as *5.8.2 Bromus diandrus* Semi-natural Stand Type (Sproul et al. 2011) or 42200 Non-Native Grassland (Oberbauer et al. 2008). The dominant grasses within the proposed enhancement area are rip gut brome (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*). These plants have Cal-IPC ratings of *moderate* and *high* respectively. The proposed enhancement sites contain 85-95% cover of non-native grasses and forbs and have a native species richness between four and nine.

Figure 9: Non-native grassland dominates proposed coastal sage scrub enhancement site.

4.5.2 Reference Site Description

A central area in existing coastal sage scrub in SELER was chosen for the reference site (Figure 10). The reference site consists of 90% total cover all of which consists of shrubs and herbs. The dominant shrub species are California sagebrush (*Artemisia californica*), which consists of 64% absolute cover; coyote brush (*Baccharis pilularis*), which consists of 15% absolute cover; and black sage (*Salvia mellifera*), which

consists of 5% absolute cover. The reference site is characterized as 4.6.1 *Artemisia californica-Saliva mellifera* Association (Sproul et al. 2011) or 32500 Diegan Coastal Sage Scrub (Oberbauer et al. 2008) and as such is largely dominated by shrubs. The dominant herb species are fairy bowties (*Pterostegia drymarioides)*, which consists of 10% absolute cover and narrow-leaved bedstraw (*Galium angustifolium*), which consists of 5% absolute cover. One non-native grass, red brome is also present on the reference site but consists of < 1% absolute cover. The native species richness of the site is 17.

Figure 10: Diegan coastal sage scrub reference site dominated by California sagebrush and black sage.

4.5.3 Proposed Project and Methods

Based on the reference site described above, the Project will aim to achieve 4.6.1 *Artemisia californica-Saliva mellifera* Association. Prior to revegetation efforts, herbicides will be applied to the non-native grasses and forbs by licensed and insured contractors using glyphosate and fluazifop-p-butyl based herbicides that are certified by the U.S. Environmental Protection Agency. Table 4 lists the plant species selected for this site. Most plants will be installed as 1-gallon container plants with developed root systems. The plants will be installed near the onset of the winter rain and will be hand watered at the discretion of SELC staff for up to one year after the installation. Typical watering regime occurs every two weeks between December and July, after which the plants are allowed to equilibrate with natural rainfall patterns. Hand watering might be reduced if natural rainfall is sufficient during the winter months. Succession planting will occur in years two and three as needed based on the survivorship of the previous years. Maintenance of the site including weed control will continue on a frequent basis during years one through three and then on a periodic basis as needed for years four and five. Site weeding will take place as frequently as needed in order to insure high survivorship rates of installed plants and meet performance criteria at the conclusion of the Project. The perennial species installed within the enhancement site are expected to establish themselves and persist with minimal intervention after the

five year period, however SELC Habitat Management Program will continue to monitor the site after the five year Project duration to ensure Project success.

Table 4: Coastal sage scrub planting palette

Common Name	Scientific Name	Form
deerweed	*Acmispon glaber*	Herb
California sagebrush	*Artemisia californica*	Shrub
coyote brush	*Baccharis pilularis*	Shrub
coastal cholla	*Cylindropuntia prolifera*	Shrub
salt grass	*Distichlis spicata*	Herb
lady fingers	*Dudleya edulis*	Herb
chalk dudleya	*Dudleya pulverulenta*	Herb
bush sunflower	*Encelia californica*	Herb
California buckwheat	*Eriogonum fasciculatum*	Shrub
salt heliotrope	*Heliotropium curassavicum var. oculatum*	Herb
toyon	*Heteromeles arbutifolia*	Shrub
coast goldenbush	*Isocoma menziesii*	Shrub
laurel sumac	*Malosma laurina*	Shrub
wild cucumber	*Marah macrocarpus*	Herb
sticky monkeyflower	*Mimulus aurantiacus*	Shrub
coast prickly pear	*Opuntia littoralis*	Shrub
bladderpod	*Peritoma arborea var. arborea*	Shrub
lemonade berry	*Rhus integrifolia*	Shrub
white sage	*Salvia apiana*	Shrub
black sage	*Salvia mellifera*	Shrub
elderberry	*Sambucus nigra ssp. caerulea*	Shrub
western blue-eyed grass	*Sisyrinchium bellum*	Herb

4.5.4 Performance Criteria

After the completion of the five-year Project, the proposed sites will achieve 50% native perennial cover relative to the reference site and have less than 5% total cover of non-native plant species. SELC expects an average survivorship rate of 50% for coastal sage scrub areas over the three years of plant installation. Survivorship of installed plants can be highly variable year to year due to weather and other factors. SELC will install successive plantings in years two or three as needed in order to achieve the cover standards stated above as related to the reference site. Monitoring details including rationale and methodology are included in *Section 5.0 Performance Criteria Rationale, Methods, and Summary*.

4.5.5 Short- and Long-term Effects of Proposed Project

Short-term effects of coastal sage scrub enhancement include increased habitat for native flora including the specific native plants that compose the habitat type. A long-term effect is the contribution to the overall CSS habitat in northern San Diego County, which protects natural ecosystem functions, such as preventing soil erosion and sequestering carbon. High quality, intact CSS stabilizes soils through the

development of soil crusts. The root systems of CSS are substantially larger than the aboveground biomass, which is evidence of the ability of such plants to efficiently sequester carbon. Another Long-term positive effect of the enhancement of CSS is improved habitat for listed bird species, including Coastal California Gnatcatcher (*Polioptila californica californica*). San Elijo Lagoon Ecological Reserve supports several breeding pairs and individuals have been observed foraging in close proximity to the current CSS enhancement sites.

Short-term detrimental effects could include disrupting wildlife temporarily while groups perform the work and mild soil disturbance (<1ft depth) during plant installation. SELC does not believe there are any known Long-term detrimental effects resultant of this Project component. All short-term detrimental effects have been mitigated by measures included in SELC's Mitigated Negative Declaration (Section 8.0 Project Compliance).

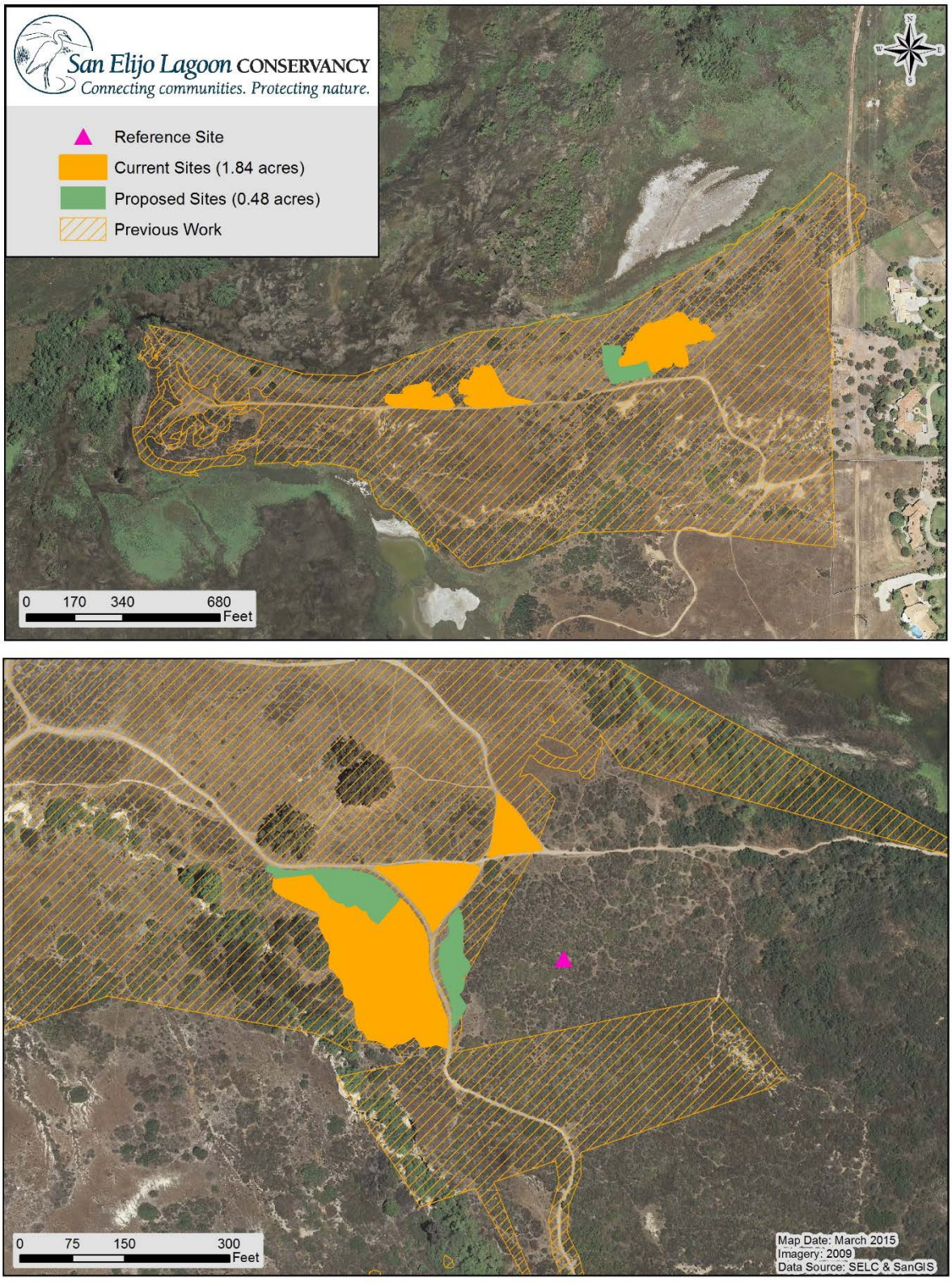

Figure 11: Coastal sage scrub enhancement sites at San Elijo Lagoon Ecological Reserve

4.6 Project area per component (Table 5)

	Project Component	Area (acres)
1.	Invasive Vegetation Control: Tamarisk	7.94
2.	Invasive Tree Control on Escondido Creek Floodplain	1.5
4.	Enhancement of Coastal Strand Habitats	0.47
5.	Enhancement of Coastal Sage Scrub Habitats	0.48
	Invasive Species Treatments Total	**10.39**
3.	Enhancement of Riparian Habitats	1.5
4.	Enhancement of Coastal Strand Habitats	0.47
5.	Enhancement of Coastal Sage Scrub Habitats	0.48
	Revegetation Total	**2.45**

5.0 Performance Criteria Rationale, Methods, and Summary

Monitoring details for all components of this proposal are included in this section. Project sites will be evaluated for success based on a combination of quantitative and qualitative means including: photo monitoring and vegetation assessments. Project site evaluations will take place pre-treatment and post-treatment annually for the duration of the Project. Vegetation data including species-specific cover estimates for all species present within the site will be recorded as well as overall percent cover, total cover of non-native plant species and total cover of native plant species. Methods for collecting the vegetation data will be based on the industry standard developed by the California Native Plant Society (CNPS) and will be based on the CNPS Relevé Protocol (2007). For sites that receive native plant installations, survivorship of installed plants will also be recorded in order to inform site-specific adaptive management techniques. Adaptive management decisions could include, for example, altering the species planting palette for succession plantings based on poor survivorship of one species compared to another at a given site. Recording survivorship data and applying adaptive management techniques on a site-specific basis increases enhancement efficiency and probability of success. Each year, success criteria will be analyzed in order to determine a trajectory for the site and evaluate whether the site is on track to meet the performance standards. The final assessment of success will be measured at the end of the Project. Each specific Project component lists specific performance criteria for that section and is summarized below in Table 6.

Table 6: Summary of performance criteria per Project component

	Project Component	Performance Criteria
1.	Invasive Vegetation Control: Tamarisk	<1% live tamarisk cover
2.	Invasive Tree Control on Escondido Creek Floodplain	<1% non-native tree cover
3.	Enhancement of Riparian Habitats	75% native perennial cover relative to the reference site; <5% cover of non-native plant species
4.	Enhancement of Coastal Strand Habitats	<10% woody perennial cover; native herbaceous species richness >5

5.	Enhancement of Coastal Sage Scrub Habitats	50% native perennial cover relative to the reference site; <5% cover of non-native plant species

6.0 Project Budget (Table 7)

Item #	Component	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	**Invasive Vegetation Control: Tamarisk**	**$15,650**	**$2,450**	**$2,450**	**$2,250**	**$1,250**	**$24,050**
1.1	Initial treatment & biomass reduction	$14,500	$950	$950	$750	$-	$17,150
1.2	Re-treatment	$1,150	$1,500	$1,500	$1,500	$1,250	$6,900
2	**Invasive Tree Control on Escondido Creek Floodplain**	**$21,900**	**$2,350**	**$2,350**	**$2,000**	**$1,050**	**$29,650**
2.1	Initial treatment & biomass reduction	$20,750	$1,100	$1,100	$750	$-	$23,700
2.2	Re-treatment	$1,150	$1,250	$1,250	$1,250	$1,050	$5,950
3	**Enhancement of Riparian Habitats**	**$7,450**	**$8,350**	**$8,350**	**$7,765**	**$1,250**	**$33,165**
3.1	Plant propagules	$2,835	$2,835	$2,835	$2,250	$-	$10,755
3.2	Hand watering	$2,115	$2,565	$2,565	$2,565	$1,250	$11,060
3.3	Site maintenance & re-treatments	$2,500	$2,950	$2,950	$2,950	$-	$11,350
4	**Enhancement of Coastal Strand Habitats**	**$15,126**	**$7,175**	**$7,011**	**$4,950**	**$-**	**$34,262**
4.1	Initial treatment & biomass removal	$11,530	$3,500	$2,900	$850	$-	$18,780
4.2	Fencing	$1,400	$250	$250	$-	$-	$1,900
4.3	Plant propagules	$-	$2,210	$2,556	$2,500	$-	$7,266
4.4	Site maintenance & re-treatments	$2,196	$1,215	$1,305	$1,600	$-	$6,316
5	**Enhancement of Coastal Sage Scrub Habitats**	**$8,127**	**$7,342**	**$7,342**	**$5,535**	**$1,050**	**$29,396**
5.1	Initial treatment & biomass removal	$2,450	$1,650	$1,650	$-	$-	$5,750
5.2	Plant propagules	$1,026	$1,107	$1,107	$1,100	$-	$4,340
5.3	Hand watering	$2,500	$2,200	$2,200	$2,050	$1,050	$10,000
5.4	Site maintenance & re-treatments	$2,151	$2,385	$2,385	$2,385	$-	$9,306
6	**Monitoring & Reporting**	**$9,550**	**$5,150**	**$5,150**	**$5,150**	**$10,125**	**$35,125**
7	**Administration & Overhead**	**$9,079**	**$3,959**	**$3,959**	**$3,959**	**$3,959**	**$24,915**
	Totals	**$86,882**	**$36,776**	**$36,612**	**$31,609**	**$18,684**	**$210,563**

7.0 Project Timeline (Table 8)

Item #	Component	Year 1	Year 2	Year 3	Year 4	Year 5
1	**Invasive Vegetation Control: Tamarisk**					
1.1	Initial treatment & biomass reduction	Fall	Fall	Fall	Fall	n/a
1.2	Re-treatment	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter
2	**Invasive Tree Control on Escondido Creek Floodplain**					
2.1	Initial treatment & biomass reduction	Fall	Fall	Fall	Fall	n/a
2.2	Re-treatment	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter
3	**Enhancement of Riparian Habitats**					
3.1	Plant propagation & installation	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
3.2	Hand watering	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring
3.3	Site maintenance & re-treatments	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
4	**Enhancement of Coastal Strand Habitats**					
4.1	Initial treatment and biomass removal	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
4.2	Fencing	Fall	Fall	Fall	n/a	n/a
4.3	Propagule collection & distribution	n/a	Summer	Summer	Summer	n/a
4.4	Site maintenance & re-treatments	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
5	**Enhancement of Coastal Sage Scrub Habitats**					
5.1	Initial treatment and biomass removal	Fall	Fall	Fall	n/a	n/a
5.2	Plant propagation & installation	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
5.3	Hand watering	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring	Fall, Winter, Spring
5.4	Site maintenance & re-treatments	Fall/Winter	Fall/Winter	Fall/Winter	Fall/Winter	n/a
6	**Monitoring & Reporting**	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly
7	**Administration & Overhead**	All year	All year	All year	All year	All year

8.0 Project Compliance

As a non-profit conservation organization, SELC is committed to compliance with environmental laws. All Project activities will be performed under the California Environmental Quality Act (CEQA) Mitigated Negative Declaration (MND) issued to SELC in 2010 by the County of San Diego Department of Parks and Recreation. After review, the decision-making body agreed that the Project sufficiently avoids or mitigates any significant negative effects on the environment. Adoption of the MND by the City of Encinitas would be required. SELC is committed to complete compliance with all mitigation measures. Mitigation measures are designed to address a wide variety of biological and cultural issues.

In general, Project activities will avoid or minimize potential impacts to sensitive habitats, and plant and wildlife species to the maximum extent practicable. Some of the main biological mitigation measures include specifics on herbicide usage, avoiding impacts to nesting birds, other wildlife and native vegetation. All initial vegetation treatment activities, planting and biomass reduction will occur from September 16 to March 14 in riparian areas, and from September 1 to February 14 in upland areas, to avoid impacts to listed and otherwise sensitive bird species during the nesting/breeding season. Maintenance activities (re-treatments, hand watering of plantings) can occur between March 15 and September 15 but with increased restrictions and with an avian monitor on site during the work activities. If an active nest, or breeding behavior is identified within an enhancement area, the avian monitor will halt work and establish a species-specific buffer to avoid impacts to breeding birds. If listed bird species are identified, the avian monitor will also contact USFWS.

Herbicide use is strictly limited to herbicides currently approved by the U.S. Environmental Protection Agency for use in/around wetlands, applied by licensed contractors, and only applied to non-native vegetation. Herbicide usage and compliance is reported monthly to California Department of Fish and Wildlife. Native vegetation will be separated and detangled from target vegetation to avoid impacts to native vegetation.

No alteration of the streambed, bank or channel shall occur including removing soil, or vegetative debris or depositing material within the 150 feet of the high water mark. To avoid impacts to water quality, fueling, equipment repairs, mixing of herbicide and surfactants will only take place in upland staging areas. Cultural resources are protected by performing a record search of all sites to determine potential for presence of cultural resources on Project sites. If large equipment (i.e. mower) is to be used on an enhancement site on or near a registered cultural site, an approved cultural and Native American monitor will be on site to assure that no impacts to historical or cultural resources occur. If cultural artifacts are discovered during enhancement activities, work will cease and be diverted away from the sensitive area and the appropriate agencies will be contacted.

References Cited

California Invasive Plant Council. 2012. Preventing the spread of invasive plants: best management practices for land managers (3rd ed.). Cal-IPC Publication 2012-03. California Invasive Plant Council, Berkeley, CA. www.cal-ipc.org.

California Invasive Plant Council. 2006 (and updates). California invasive plant inventory. Cal-IPC Publication 2006-02. California Invasive Plant Council, Berkeley, CA. www.cal-ipc.org.

California Native Plant Society (CNPS) Relevé Protocol. 2007. CNPS Vegetation Committee.

Dendra, Inc. 2012. Management Priorities for Invasive Non-native Plants: A Strategy for Regional Implementation, San Diego County, California. Prepared for San Diego Association of Governments, Contract No. 5001322.

Dosskey, Michael G., Philippe Vidon, Noel P. Gurwick, Craig J. Allan, Tim P. Duval, and Richard Lowrance. 2010. The Role of Riparian Vegetation in Protecting and Improving Chemical Water Quality in Streams. Journal of the American Water Resources Association. 1-18. DOI: 10.1111.

Faber et al., 1989. The Ecology of Riparian Habitats of the Southern California Coastal Region: A community profile. U.S. Department of Interior, Fish & Wildlife Services. V. 85 (7.27).

Fred Sproul, Todd Keeler-Wolf, Patricia Gordon-Reedy, Jonathon Dunn, Anne Klein, and Kyle Harper. February 2011. Vegetation Classification Manual for Western San Diego County.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on “Preliminary Descriptions of the Terrestrial Natural Communities of California”, Robert F. Holland, Ph.D., October 1986.

Peterson, Andrea L. 2006. Water Quality and its Dependency on Riparian Vegetation
http://www.usouthal.edu/geography/fearn/480page/06Peterson/06Peterson.htm. Accessed 3/19/2015.

Pickart, Andrea, and J. O. Sawyer. 1998. Ecology and Restoration of Northern California Coastal Dunes. CNPS Press; Sacramento, California.

Warner, Peter J., et al., 2003. Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands http://www.cal-ipc.org/paf/static/docs/Criteria.pdf. Accessed 3/27/2015.