CEQA
NEGATIVE DECLARATION

CITY OF EUREKA

SCH #: 2010112050

PROJECT TITLE: ***Elk RiverAccess Project / Iksori Trail***

PROJECT APPLICANT: City of Eureka **CASE NO:** CDP-05-0015

PROJECT LOCATION: Southwestern Eureka, Humboldt Bay-front from Truesdale Road to Pound Road; **APNs: 007-081-016, 007-091-002**,003,005,006,007,008,011, **019-321-012,** 005,**019-331-009,**008, **302-171-001,302-181-002, &** 031

ZONING & GENERAL PLAN DESIGNATION: Natural Resources (NR), Coastal Dependent Industrial (MC)

PROJECT DESCRIPTION: The Elk River Access / Iksori Trail Project's purpose is to enhance public access to the Elk River Wildlife Sanctuary (ERWS), Elk River estuary, and Humboldt Bay. The project will thereby encourage an appreciation of the environment and historic uses of the area, improve public health, increase the safety of trail users and recover native habitat values where possible. The trail will consist of a 10' hard surface trail with 4' of adjacent soft path (4' on one side). High traffic parts of the trail will be surfaced with NaturalPave or AC, with a hardened (e.g. crushed shale) adjacent shoulder/path; the rest of the trail will either be surfaced with hardened/crushed shale surface or NaturalPave. The trail surface will support wheelchair users and bicyclists while fitting the natural landscape. Interpretive signage, trail head parking, and restroom facilities are also proposed.

LEAD AGENCY/CONTACT: City of Eureka, Community Development Department; Robert S. Wall, AICP, Senior Planner; 531 K Street, Eureka, CA 95501-1165; phone: (707) 441-4163; fax: (707) 441-4202; e-mail: rwall@ci.eureka.ca.gov

FINDING OF NO SIGNIFICANT EFFECT: It has been determined, after review and evaluation, that:

1. The proposed project will not have a significant effect on the environment.
2. A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation Measures as recommended in the initial study were made a condition of project approval.
4. A Statement of Overriding Considerations was not adopted for this project.
5. Findings were made pursuant to the provisions of CEQA.

The material supporting the above findings is contained in the Initial Study prepared by the City of Eureka's Community Development Department. Copies of the documents related to the evaluation of this project are available for review to the general public at the Community Development Department, address above.

Robert S. Wall, AICP
Senior Planner

1/11/11
Date

CEQA
Mitigation Monitoring / Reporting Program
(MMRP)

CITY OF EUREKA

This Mitigation Monitoring/Reporting Program (MMRP) has been prepared for the project described below in conformance with Section 21081.6 of the California Environmental Quality Act (CEQA) and Section 15097 of the CEQA Guidelines.

SCH #:

PROJECT TITLE: Elk River Access / Iksori Trail Project

PROJECT APPLICANT: City of Eureka **CASE NO**: N/A

PROJECT LOCATION: Southwestern Eureka, Humboldt Bay-front from Truesdale Road to Pound Road; **APNs**: **007-081-016**, **007-091-002**,003,005,006,007,008,011, **019-321-012,** 005,**019-331-009,** 008, **302-171-001, 302-181-002, &** 031.

ZONING & GENERAL PLAN DESIGNATION: Natural Resources, Coastal Dependent Industrial

PROJECT DESCRIPTION: The Elk River Trail and Access Project's purpose is to enhance public access to the Elk River Wildlife Sanctuary (ERWS), Elk River estuary, and Humboldt Bay. The project will thereby encourage an appreciation of the environment, historic uses of the area, improve public health, increase the safety of Parkway visitors, and improve native habitat values where possible. The major elements of the project include: an improved surface trail, two trail head locations, one at Truesdale Road and one at Herrick Road/Elk River Park and Ride; a kayak launching site at Hilfiker with a public restroom and picnic area; wildlife vista points (see Initial Study for detailed project description).

LEAD AGENCY: City of Eureka, 531 "K" Street, Eureka, CA 95501-1165

CONTACT PERSON: Robert S. Wall, AICP, Senior Planner; *phone*: (707) 441-4160; *fax*: (707) 441-4202; *e-mail*: rwall@ci.eureka.ca.gov

INTRODUCTION: On January 11, 2011, the subject Mitigated Negative Declaration was approved by the Community Development Director of the City of Eureka; mitigation measures were made a condition of project approval. The purpose of this MMRP is to ensure that the mitigation measures adopted in connection with project approval are effectively implemented. This MMRP establishes the framework that the City of Eureka and others will use to implement the adopted migration measures and the monitoring and/or reporting of such implementation.

CEQA provides that the City of Eureka may choose whether the MMRP will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually

involve elements of both. The choice of program may be guided by the following:

(1) Reporting is suited to projects which have readily measurable or quantitative mitigation measures or which already involve regular review. For example, a report may be required upon issuance of final occupancy to a project whose mitigation measures were confirmed by building inspection.

(2) Monitoring is suited to projects with complex mitigation measures, such as wetlands restoration or archeological protection, which may exceed the expertise of the City of Eureka to oversee; are expected to be implemented over a period of time; or, require careful implementation to assure compliance.

(3) Reporting and monitoring are suited to all but the most simple projects. Monitoring ensures that project compliance is checked on a regular basis during and, if necessary after, implementation. Reporting ensures that the City of Eureka is informed of compliance with mitigation requirements.

ENFORCEMENT: In accordance with CEQA, the primary responsibility for making a determination with respect to potential environmental effects rests with the City of Eureka rather than the monitor or preparer of the CEQA documents. As such, the City of Eureka is identified as the primary enforcement agency for this MMRP.

PROGRAM MODIFICATION: After adoption of this MMRP, minor changes to this MMRP are permitted but can only be made by the City of Eureka. The Director of Community Development, after consultation with affected Departments or Agencies, may make minor modifications to this MMRP. If, for any reason, any mitigation measure specified in this MMRP cannot be implemented due to factors beyond the control of the owner/developer and/or the City of Eureka, at a noticed public hearing before the City Council of the City of Eureka substitution of another mitigation measure may be approved. In no case shall deviations from this MMRP be permitted unless this MMRP continues to satisfy the requirements of Section 21081.6 of CEQA, as determined by the City of Eureka.

SUMMARY OF POTENTIAL PROJECT IMPACTS: Below is a table that summarizes the impact potential for each category of impact as identified and analyzed in the Initial Study.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. Aesthetics			✓	
II. Agricultural Resources				✓
III. Air Quality		✓		
IV. Biological		✓		
V. Cultural		✓		
VI. Geology and Soils			✓	
VII. Hazards and Hazardous Materials			✓	
VIII. Hydrology and Water Quality		✓		
IX. Land Use and Planning			✓	
X. Mineral Resources			✓	
XI. Noise				✓
XII. Population				✓

XIII. Public Services				✓
XIV. Recreation				✓
XV. Transportation and Traffic				✓
XVI. Utilities & Service Systems				✓
XVII. Mandatory Findings of Significance		✓		

MMRP IMPLEMENTATION TABLE: To assure that this MMRP is effectively implemented the table on the following pages establishes the framework that the City of Eureka and others will use to implement the adopted migration measures and the monitoring and/or reporting of such implementation. The following abbreviations will be used in the MMRP table:

ACOE.....Army Corps of Engineers
AQMD .....Air Quality Management District
BD .....City of Eureka Building Department
BMP .....Best Management Practice(s)
CCC.....California Coastal Commission
CCR.....California Code of Regulations
CDD .....Community Development Department
CDFG .....California Department of Fish & Game
CEQA.....California Environmental Quality Act
CGC .....California Government Code
City.....City of Eureka
ENG .....City of Eureka Engineering Department
ESHA .....Environmentally Sensitive Habitat Area
MND .....Mitigated Negative Declaration
PRC .....Public Resources Code
PW.....City of Eureka Public Works Department
RWQCB .....Regional Water Quality Control Board

Mitigation Measure	Responsible Agency and/or Party	Action Required	Monitoring Phase/ Reporting Requirements	Enforcement	Compliance Verification	Notes/ Comments
MITIGATION MEASURE NO 1. The applicant and/or construction designee, at all times, shall comply with Air Quality Regulation 1, Chapter IV to the satisfaction of the NCUAQMD. This will require, but may not be limited to: (1) covering open bodied trucks when used for transporting materials likely to give rise to airborne dust; and (2) the use of water for control of dust in construction operations, the grading of roads or the clearing of land.	▸ City ▸ AQMD ▸ Contractor	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Throughout the duration of project construction and maintenance.	ENG shall, on the basis of their observations or complaints to the City regarding excessive smoke or other particulate matter, be empowered to direct the contractor to undertake additional measures in the field if it appears that the contractor is not following this measure		
MITIGATION MEASURE NO 2. Construction activities shall avoid impacts to Humboldt Bay owl's clover or Point Reyes bird's beak to the extend feasible. If impacts are unavoidable, work shall be conducted from September through December (outside the blooming period) where these plants could be directly impacted. The top 6-inches of soil will be removed, separately stockpiled, and replaced, and original contours restored upon completion of the work.	▸ City ▸ Contractor	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Throughout the duration of the project construction and maintenance.	CDD shall conduct field observations during the construction process to assure the appropriate implementation of this measure, and shall be empowered to direct the contractor to temporarily suspend construction activities if evidence is presented to either department that the contractor is not in compliance with this measure, pending the development of specific actions to regain compliance.		
MITIGATION MEASURE NO 3. The City shall create and or enhance 1.1 acres of salt marsh habitat at the project site, as	▸ City	Language assuring compliance shall be	Throughout the duration of the project construction and	CDD shall conduct field observations during the		

Mitigation Measure	Responsible Agency and/or Party	Action Required	Monitoring Phase/ Reporting Requirements	Enforcement	Compliance Verification	Notes/ Comments
depicted by the consultant's "Wetland Mitigation Areas" mapping, dated October 2010, to the satisfaction of the California Coastal Commission. Said creation and or enhancement work shall commence during the construction of the subject trail. In order to ensure the successful reestablishment of salt marsh, the City shall monitor the biological establishment of the restored wetland for five years. If required, the City shall consult the Coastal Commission or the California Department of Fish and Game and take the appropriate measures to ensure the wetland mitigation areas are successful.		incorporated into design and contract documents prepared by the City for the project. Active five year biological observations	maintenance	construction process to assure the appropriate implementation of this measure, and shall be empowered to direct the contractor to temporarily suspend construction activities if evidence is presented to either department that the contractor is not in compliance with this measure, pending the development of specific actions to regain compliance.		
MITIGATION MEASURE NO. 4 To mitigate the potential of disturbing undiscovered subsurface archeological recourses, at least a month prior to construction, the applicant's retained professional archaeologist shall conduct test excavation pits at the exact location of pending construction related ground disturbing activities.	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	As stated within the subject Mitigation Measure, at least one month prior to ground disturbing activities, said tests pits shall be excavated.	Written findings from the retained Archeologist shall be provided to the CDD prior to issuance of any building or grading permits.		
MITIGATION MEASURE NO. 5 If any cultural resources are discovered during pre- constructing testing, construction, or maintenance of the proposed project, all work shall be halted until a qualified cultural resource specialist is contacted to analyze the significance of the find and, if necessary, recommend further resource protection measures. If human remains are found on the site, all work is to be stopped and the	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Throughout the duration of the project construction and maintenance.	Cultural monitors shall be retained by the City to observe all ground disturbing activities. Said monitors shall have the authority to suspend all construction as described		

Mitigation Measure	Responsible Agency and/or Party	Action Required	Monitoring Phase/ Reporting Requirements	Enforcement	Compliance Verification	Notes/ Comments
County Coroner shall be contacted.				within the subject mitigation measure.		
MITIGATION MEASURE NO 6. During project construction, if there is any evidence that indicates contaminated soils are present on the site, either from visual observations or odors indicative of regulated substances, the applicant shall be responsible for performing soil sample analyses. The findings of the survey shall be submitted, as applicable, to the RWQCB, DTSC, and any other appropriate regulatory agencies. The applicant shall comply at all times with the requirements and regulations of the RWQCB, DTSC, and other agencies with regard to the handling, transport, and disposal of hazardous materials such as contaminated soils to the satisfaction of the applicable agencies.	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Throughout the duration of the project construction and maintenance.	ENG shall, on the basis of their observations or complaints regarding potential contaminated soils, be empowered to direct the contractor to undertake additional measures in the field if it appears that the contractor is not following this measure		
MITIGATION MEASURE NO. 7 To mitigate the potential for increased stormwater flows being directed onto adjoining properties or environmentally sensitive habitat areas, Redwood Community Action Agency, prior to building/grading permit approval, shall submit a Stormwater Pollution Prevention Plan (SWPPP) to the City of Eureka Public Works Stormwater Division and include LID techniques (permeable pavements/surfacing, green roofs, bioretention and or vegetated swales) that will infiltrate stormwater on-site so that post development hydrology mimics pre-development. Said Plan and LID techniques shall be approved to the satisfaction of the North Coast Regional Water Quality Control Board, California Coastal Commission,	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Plan and LID techniques shall be approved to the satisfaction of the North Coast Regional Water Quality Control Board, California Coastal Commission, Building, Planning, Engineering, and Public Works Departments. Said drainage plan features/measures shall be constructed to the satisfaction of the aforementioned Departments, prior to	SWPPP Shall be approved by the North Coast Regional Water Quality Control Board prior to Building Permit Issuance.		

Mitigation Measure	Responsible Agency and/or Party	Action Required	Monitoring Phase/ Reporting Requirements	Enforcement	Compliance Verification	Notes/ Comments
Building, Planning, Engineering, and Public Works Departments. Said drainage plan features/measures shall be constructed to the satisfaction of the aforementioned Departments, prior to opening the trail to public use.			opening the trail to public use.			
MITIGATION MEASURE NO. 8 To mitigate the potential for stormwater to carry additional pollutants from the proposed parking lot areas, LID treatments such as bioretention swales, vegetated swales and permeable pavements will provide treatment of parking lot runoff. Good housekeeping practices will include maintenance and cleaning of the parking areas a regular basis. No debris, soil, silt, sand, bard, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from construction operations shall be allowed to enter or be placed where it can enter any portion of the drainage system of the City of Eureka. All applicable erosion control measures and BMPs will be implemented during all phases of construction.	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Erosion Control Plan and LID techniques shall be approved to the satisfaction of the Building, Planning, Engineering, and Public Works Departments. Said drainage plan features/measures shall be constructed to the satisfaction of the aforementioned Departments, prior to opening the trail to public use.	ENG shall, on the basis of their observations or complaints to the City regarding erosion control and good house keeping measures , be empowered to direct the contractor to undertake additional measures in the field if it appears that the contractor is not following this measure.		
MITIGATION MEASURE NO. 9 To inform the general public of the potential of tsunami run-up inundating the trail area, each trailhead location shall have signage informing the public of what actions to take in the event of seismic activity. Said signage shall be posted to the satisfaction of the City of Eureka and prior to the trail being open to the general public.	▸ City	Language assuring compliance shall be incorporated into design and contract documents prepared by the City for the project	Signage design shall be approved to the satisfaction of the Planning, and Public Works Departments. Said signage shall be located to the satisfaction of the aforementioned Departments, prior to opening the trail to public use.	Informational signage shall be provided at conspicuous locations along the trail for the economic life of the subject rail section.		

CEQA
NOTICE OF DETERMINATION
Mitigated Negative Declaration

The City of Eureka, as the Lead Agency, is filing this Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

TO: Office of Planning Research
P.O. Box 3044
1400 Tenth Street, Room 121
Sacramento, CA 95812-3044

fax: 1-916-323-3018

County of Humboldt
County Clerk
825 5th Street
Eureka, CA 95501

FROM: City of Eureka, Lead Agency
Community Development Department
Robert S. Wall, AICP, Senior Planner
531 K Street
Eureka, CA 95501-1165
(707) 441-4265
rwall@ci.eureka.ca.gov

931458
CAROLYN CRNICH
Humboldt County Clerk
FILED JAN 11 2011 FILED
BY J. Holman

SCH #: 2010112050

PROJECT TITLE: ***Elk RiverAccess Project / Iksori Trail***

PROJECT APPLICANT: City of Eureka

PROJECT LOCATION: Southwestern Eureka, Humboldt Bay-front from Truesdale Road to Pound Road; **APNs**: **007-081-016**, **007-091-002**,003,005,006,007,008,011, **019-321-012,** 005,**019-331-009,**008, **302-171-001,302-181-002, &** 031

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and restroom facilities are also proposed.

LEAD AGENCY/CONTACT: City of Eureka, Community Development Department; Robert S. Wall, AICP, Senior Planner; 531 K Street, Eureka, CA 95501-1165; phone: (707) 441-4163; fax: (707) 441-4202; e-mail: rwall@ci.eureka.ca.gov

This is to advise that, as the Lead Agency, on January 11, 2011, the City of Eureka Community Development Director made the following determinations regarding the project.

1. The proposed project will not have a significant effect on the environment.

2. A Mitigated Negative Declaration was adopted for this project pursuant to the provisions of CEQA.

3. Mitigation Measures were made a condition project approval and a Mitigation, Monitoring, and reporting Program was adopted

This is to certify that the Mitigated Negative Declaration and the record of project approval are available to the general public for review at the City of Eureka, Community Development Department, 531 K Street, Eureka, CA 95501.

	January 11, 2011	Senior Planner
Signature (Public Agency)	*Date*	*Title*

Date received for filing and posting at OPR: _____

Date received for filing and posting by the County Clerk (County Recorder): _____

Period for Posting by County Clerk: _____

Note to the County Clerk: *Pursuant to the CEQA Guidelines, Section 15075, the City of Eureka as Lead Agency is requesting that the Humboldt County Clerk post this Notice of Determination within 24 hours of receipt, for a period of at least 30 days. Thereafter, please return this notice to the City at the address above with a notation of the period it was posted*

CEQA
INITIAL STUDY

CITY OF EUREKA

PROJECT TITLE: Elk River Access / Iksori Trail Project

PROJECT APPLICANT: City of Eureka **CASE NO**: CDP-05-0015

PROJECT LOCATION: Southwestern Eureka, Humboldt Bay-front from Truesdale Road to Pound Road; **APNs**: **007-081-016**, **007-091-002**,003,005,006,007,008,011, **019-321-012,** 005,**019-331-009,**008, **302-171-001,302-181-002, &** 031

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1. Truesdale Vista Point

Located between Truesdale Street and the City's McCullens Avenue Pump Station is an existing dirt lot with a largely unimproved surface. With improvements, the site has potential for high use levels, with close and visible proximity to the Bayshore Mall and US 101, and existing moderate use. Public access improvements here are a priority in the Eureka General Plan and Capital Improvement Program.

Parking Proposed permeable surface (stalls only), 14,400 square feet, with 23 spaces, three ADA-compliant. Remainder of parking area surface to be AC with adjacent concrete sidewalk areas and landscaping which will be utilized for treatment of runoff from parking area (bioretention swale / vegetated strips).

Roadway Upgrade of 600 square feet of Truesdale Street adjacent to Vista Point, including railroad crossing improvements.

Multi-Use Trail Parallel to shoreline, (potentially paved) surface for high-level use and compatibility with segment south of pump station, approximately 380 linear feet. Standard 14' width, including 4' of hard/unpaved adjacent path and an additional two to four feet of disturbed shoulder (for all multi-use trail in project area). City-removable/collapsible access control structure (bollard/s) to prevent vehicular access.

Day-Use Area Scenic trailhead and visitor area including: two to four picnic tables, benches, trash receptacle/dog cleanup station, appropriate (low focus) lighting. Signage (see below). Pump station fencing will be planted with plants growing up trellises providing a natural green screen to the pump station as opposed to a chain link fence. The vegetation will provide a noise block, visual screen, habitat for species and will be planted with fragrant or edible species. Pump station may be repainted.

Signage Site name sign at entrance. Trailhead kiosk: three or four-sided structure, including site use guidelines, region/site map and natural/cultural history interpretive information.

Restroom Plumbed restroom facility on northeast side of parking area.

Landscaping Significant landscaping to add scenic element to site as viewed from US 101. Native plants recommended, few trees. Appropriate landscaping and 420 feet of upgraded fencing (living fence) to screen pump station facility. Landscaping will be utilized for stormwater treatment and retention with vegetated and/or bioretention swales. Design will include vehicular access control to trail and beach. Potential elements of public art.

Observ. Platform Raised (approximately 48") platform for bay/birdlife viewing at northwestern corner of Vista Point. Two to three rail-mounted interpretive signs.

2. Truesdale Park

The former City storage yard area south of the pump station – approximately 425 linear feet.

Multi-Use Trail Start of improved trail will be paved surface, either AC or NaturalPave with a 4' hardened/unpaved shoulder.

Day-Use Area Potential day-use area with picnic tables, trash receptacle/dog cleanup station and interpretive signs. The funding is not currently available for construction and maintenance. However, there is enough available space that would allow for more use in the future.

Landscaping Potential earthscaping/raised relief, groundcover, some shrubs and trees, all natives. Planting of shore pines in between decadent Monterey pines to sustain biological shoreline protection. Removal of invasive non-native species and existing fences. Potential elements of public art appropriate for a natural landscape.

3. Truesdale Street to Hilfiker Lane

The former Crowley property north of Hilfiker Lane – approximately 650 linear feet. This area has substantial native vegetation interspersed with numerous invasive exotic plants.

Multi-Use Trail Continuation of improved Iksori Trail, paved- 10' either AC or Nature Pave and 4' hard/unpaved shoulder.

Landscaping Invasive exotic plant removal and native species plantings.

Signage Two trailside interpretive signs that will include restricted use language.

Observ. Platform Potential: slightly raised earthen platform for bay/birdlife viewing. Two or three rail-mount interpretive sign/s. Siting will depend on confirmation of location of wastewater transmission line.

4. Elk River Paddling Access

Southwest end of the former Crowley property and corner of Hilfiker Lane. There will be a roadway entrance to the paddle boat parking and access site.

Paddle Boat Access 'Primitive' beach launch with footpath from parking area.

Day-Use Area Minimal paddling facilities: two picnic tables, trash receptacle/dog cleanup station, plumbed restroom.

Restroom	Plumbed or vault restroom facility on northeast side of parking area.
Parking	Hardened/unpaved surface for eight vehicles, including one ADA-compliant space. Landscaped areas utilized for stormwater treatment and detention using vegetated and/or bioretention swales.
Multi-Use Trail	Continuation of improved Iksori Trail, paved- 10' either AC or NaturalPave with 4 ' hardened/unpaved shoulder.
Signage	Welcome sign at corner of Hilfiker Lane facing roadway – potentially could direct traffic to ERWS trailhead at end of Hilfiker and identify corner site for paddling access. Small paddling access kiosk with site use guidelines, 'water trail' map, and interpretive information.
Multi-Use Trail	Continuation of Iksori Trail south of parking area, 10' either AC or NaturalPave with 4' hardened/unpaved shoulder.
Landscaping	Gateway landscaping and earthscaping at corner of Hilfiker Lane and around parking area with primarily native shrubs. Vehicular access control to beach and trail. Landscaped areas utilized for stormwater detention/bioretention swales. Potential elements of public art.

5. Hilfiker Lane Trail

From corner of Hilfiker Lane to trailhead – approximately 1500 linear feet.

Multi-Use Trail	Continuation of improved trail as above. Outer edges of trail will be a minimum of approximately four feet from Hilfiker Lane and extreme high tide line. Trail will depart from shoreline onto the roadway along existing Schwaika Property until easement or purchase of private property allows continuation of trail off of roadway. Road will be realigned to accommodate an adjacent 6-8' trail, separated from Hilfiker Road by a raised curb.
Signage	Two trailside interpretive signs along trail route.
Landscaping	Earthscaping, native trees and shrubs. Structural control of vehicular access control to beach and trail between roadway and trail corridor. Potential elements of public art. Some or all large boulders will be removed and replaced with more aesthetic vehicular access control.
Observ. Platform	Potential: raised earthen berm for bay/birdlife viewing at point of armored shoreline. Two or three rail-mount interpretive sign/s.

6. Hilfiker Lane Trailhead

North of and surrounding existing ERWS parking lot. This area will be less developed than the more urban environment of the Truesdale Vista Point.

Parking	Existing asphalt parking for 21 vehicles. This lot should be adequate for proposed improvements in the area. Two parking sites should be designated for ADA access.
Day-Use Area	Scenic trailhead and visitor area: picnic tables, benches, trash receptacle/dog cleanup station, appropriate (low focus) lighting. Existing cyclone fencing and some or all large boulders will be removed and replaced with more aesthetic vehicular access control.
Restroom	Plumbed restroom facility on northeast side of parking area.
Multi-Use Trail	Continuation of improved trail as above to connect with existing trail, described below.
Signage	Three- to four-sided trailhead kiosk as above including site use guidelines,

region/site map and natural/cultural history interpretive information. Two trailside interpretive signs.

Landscaping Extensive landscaping, earthscaping and beach/trail access control around parking lot and along Hilfiker Lane with primarily native plants. The large fill area north of the parking lot could be maintained as a mowed open space for recreational activities, or it could be more heavily earthscaped with an artistic focus. Potential elements of public art.

7. Existing ERWS Trail

Informal trail south of Hilfiker Lane trailhead to railroad corridor at Pound Road – approximately 3890 linear feet

Multi-Use Trail Continuation of trail south of parking area as above. The trail will cross the railroad and continue to Pound Road. Trail also serves as maintenance vehicle access for the ERWS and neighboring Elk River Wastewater Treatment Plant.

Surfacing improvements to existing informal trail will include: aerial and surface vegetation removal in 16' corridor, grading, and application of trail base and surfacing materials to width standards as above. Limited amount of additional vegetation clearing to improve visibility and safety. An approximately 26' long and 10-12' wide bridge will be installed over a narrow finger of slough just northwest of the railroad crossing (see below) at the south end of the ERWS.

Signage Up to six trailside interpretive signs. Potential 'use guideline' sign to communicate status of railroad crossing access/use or a related safety warning.

8. Riverside Footpath

South of ERWS parking lot there is an existing footpath to and along the river's edge that connects back to the multi-use trail – approximately 1090 linear feet – currently used for fishing and birdwatching. Improvements to this trail will reduce off-trail travel on the river's edge.

Footpath Proposed surfacing improvement to 4' width of crushed shale or similar surface.

Signage Up to three trailside interpretive signs.

9. Pound Road Access

Current informal pedestrian access to and from Herrick Road overpass and Pound Road over railroad corridor – approximately 405 linear feet from railroad corridor to small existing parking area and gate; approximately 1000 linear feet from small parking area to US 101 Park & Ride lot. Large Park & Ride lot adjacent to US 101 has ample parking space for anticipated uses; trailhead uses are in process for approval by Caltrans.

Signage Trailhead kiosks/signs will be at the trail access point (former informal parking area) and at the Park & Ride.

Roadside Trail A road-adjacent 6-8' wide asphalt trail, separated from Pound Road by a raised curb, will be developed for 255' from the Park & Ride north to the entrance of Pro-Pacific, where a crosswalk will provide access to the pedestrian/bicycle

route adjacent to the proposed gate (see below). Between the proposed gate and the existing informal parking area, pedestrian/bicycle traffic will share Pound Road with very limited traffic associated with one landowner and City maintenance.

Railroad crossing West of the existing gate at the informal parking area, an existing volunteer footpath crosses over the railroad corridor. This trail will be improved to multi-use standards. Over the railroad tracks, a temporary paved crossing will be constructed, leaving tracks in place and will be reconstructed to accommodate rail use when railroad becomes operational. Approval from the Public Utilities Commission and North Coast Rail Authority is in process.

Access Control A new/refurbished gate will be installed on Pound Road west of the private entrance to Pro-Pacific fresh produce shipping facility/warehouse to limit vehicular access to use by the City and one private landowner and prioritize pedestrian/bicycle use for the remainder of Pound Road.

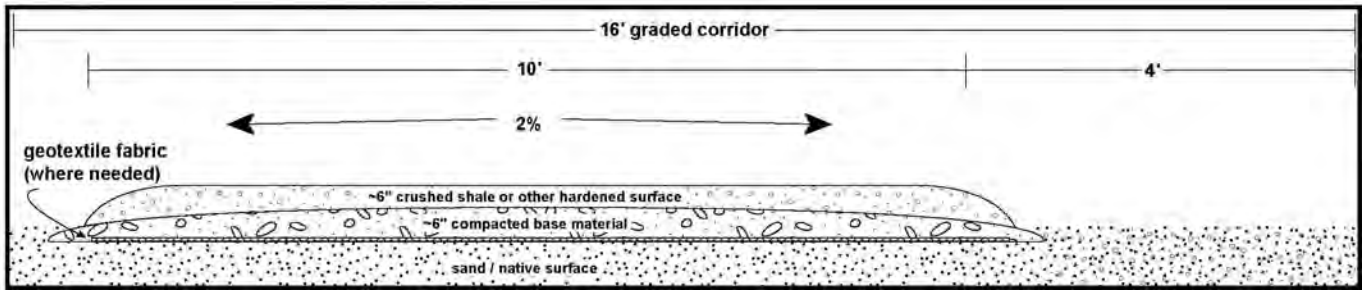
10. Directional Signage

Six directional signs will be added to existing signage on US 101 to identify the three day use and Coastal Trail access points at Truesdale Street, Hilfiker Lane and Pound Road. Approval of sign placement will be sought by Caltrans.

Signage Standard highway directional signage (brown signs with white lettering) will be placed on existing Coastal Access and other directional signage such as offramp notifications.

Trail Route Layout and Design

The trail itself will consist of a 10' hard surface trail with 4' of adjacent soft path (4' on one side). High traffic parts of the trail will be surfaced with NaturalPave or AC, with a hardened (e.g. crushed shale) adjacent shoulder/path; the rest of the trail will either be surfaced with hardened/crushed shale surface or NaturalPave. The trail surface will support wheelchair users and bicyclists while fitting the natural landscape



Typical Proposed Iksori Trail Cross-Section.

LEAD AGENCY/CONTACT: City of Eureka, Community Development Department; Robert S. Wall, AICP, Senior Planner; 531 K Street, Eureka, CA 95501-1165; phone: (707) 441-4163; fax: (707) 441-4202; e-mail: rwall@ci.eureka.ca.gov

SURROUNDING LAND USES AND SETTINGS: The City of Eureka is a charter city located on Humboldt Bay, approximately 300 miles north of San Francisco and 100 miles south of the Oregon border. Initially founded in the spring of 1850, the City of Eureka was incorporated through a special act of the State Legislature on April 18, 1856. The community was reincorporated as a City on February

19, 1874, and received a charter on February 8, 1895. As the county seat for the 572 square mile Humboldt County, Eureka is the center of business and government; the major industries include agriculture, fishing and tourism. The average July maximum temperature is 61.6°F and the average January maximum temperature is 54.3°F. The average July minimum temperature is 52.3°F and the average January minimum temperature is 41.5°F. The average annual precipitation is 39.0 inches; the average annual snowfall is 0.3 inches.

Humboldt Bay is one of the largest bays on the Pacific Coast. Historically, the bay and associated wetlands covered approximately 27,000 acres. Diking, drainage and filling has reduced the effective bay area to approximately 13,000 acres. Humboldt Bay is located about 30 miles northeast of the junction of the Gorda, Pacific and North American crustal plates. Tectonic activity in the area is extremely high: the Gorda Plate is being subducted under the North American Plate, and large-scale tectonic motion has produced a number of northwest-southwest trending faults in the region. Uplifting and folding, differential motion at the various fault lines, and erosion have resulted in a complex pattern of geologic formations – the Franciscan, Hookton, Yager, and Wildcat – in the bay region.

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS, OR MAY BE REQUIRED (e.g. permits, financing approval, or participation agreement.): City of Eureka Planning Commission, California Coastal Commission, U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game, Caltrans, California Public Utilities Commission, North Coast Railroad Authority.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ❑ Aesthetics
- ❑ Agricultural Resources
- ❑ Air Quality
- ❑ Biological Resources
- ❑ Cultural Resources
- ❑ Geology/Soils
- ❑ Hazards/Hazardous Materials
- ❑ Hydrology/Water Quality
- ❑ Land Use/Planning
- ❑ Mineral Resources
- ❑ Noise
- ❑ Population/Housing
- ❑ Public Services
- ❑ Recreation
- ❑ Transportation/Traffic
- ❑ Utilities/Service Systems
- ❑ Mandatory Findings of Significance

DETERMINATION: On the basis of this initial evaluation:

❑ I find that the proposed project **could not** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☑ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

❑ I find that the proposed project **may** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

❑ I find that the proposed project **may** have a "potentially significant impact" or 'potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only those effects that remain to be addressed.

❑ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Robert S. Wall, AICP
Senior Planner, City of Eureka

11/19/10
Date

2b. Thomas Brothers Map of Project Area - Eureka

4a. Proposed Elk River Parkway

Natural Resources Services, RCAA, August 2008 • Photo date: March, 2000

Existing Conditions

- Public Trail - No Bicycle or Wheelchair Access
- River Access Footpath
- Approximate Elk River Wildlife Area Boundary
- Approximate City Ownership
- Approximate Harbor District Ownership
- Approximate Private Ownership
- NWP Railroad
- Parking Area

Proposed Improvements

- Public Multiple-Use Trail
- Fencing/Access Control
- Parking Area
- Paddle Boat Access
- Day-Use Facilities
- Restroom
- Interpretive Sign and/or Wayside Exhibit
- Observation Platform (includes interpretive signing)
- Landscaping & Beach/Trail Access Control

Approximate Scale

0 — .25 MILES

Site Summaries

North Elk River Parkway Project

To be implemented with other funding sources

1 Truesdale Vista Point
- Scenic visitor area with day use facilities, signage
- Upgraded parking area to accommodate 23 vehicles
- New multiple-use trailhead; 380' of trail
- Earthen observation platform
- (See inset concept plan for more detail)

2 Truesdale Beach & Park
- Former City storage yard: fence and debris removal
- Open space, park and playground facilities
- 425' of multi-use trail -- trailhead to paddling access

3 'Crowley' Natural Area
- 650' of multi-use trail
- Earthen observation platform
- Interpretive signs
- Invasive plant removal; native landscaping

South Elk River Parkway Project

Proposed to be implemented with River Parkway funding

4 Elk River Paddling Access
- Primitive existing beach launch to estuary & river
- Permeable parking area for 8 vehicles; lighting, trash
- Trailhead kiosk, interp sign, 2 picnic tables, 1 bench

5 Hilfiker Lane Trail Segment
- 1800' of multi-use trail adjacent to Hilfiker Lane
- 3 interpretive signs, 1 bench, 2 observation platforms
- Removal of invasive species, native landscaping
- Aquisition of private parcel being pursued; not required

6 Elk River Wildlife Area Trailhead
- Existing parking for 21 vehicles
- Kiosk, 2 interpretive signs, bench, 3 picnic tables
- Restroom, trash receptacle, lighting, surveillance camera

7 Existing Elk River Wildlife Sanctuary Trail
- Widen, surface to achieve 3240' multi-use trail
- Replace 'maze' at trailhead to allow bike/wheelchair use
- 4 interpretive signs

8 Riverside Footpath
- 1090' of existing footpath along river's edge
- 2 interpretive signs, 1 bench

9 Pound Road Access
- Widen, surface 405' multi-use trail from RR to Pound Road
- Rail (out of service) crossing improvements
- Trailhead kiosk, trash receptacle
- Ped improvements on Pound Road between Park & Ride and first driveway; install gate after first driveway

CHECKLIST AND EVALUATION OF ENVIRONMENTAL IMPACTS: An explanation for all checklist responses is included, and all answers take into account the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. The explanation of each issue identifies (a) the significance criteria or threshold, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significant. In the checklist below the following definitions are used:

"**Potentially Significant Impact**" means there is substantial evidence that an effect may be significant.

"**Potentially Significant With Mitigation Incorporated**" means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

"**Less Than Significant Impact"** means that the effect is less than significant and no mitigation is necessary to reduce the impact to a lesser level.

"**No Impact"** means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the project.

I. AESTHETICS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers whether the proposed project may have any significant effects on visual aesthetics because of: (a) the short-term or long-term presence of project-related equipment or structures; (b) project-related changes in the visual character of the project area that may be perceived by residents or visitors as a detraction from the visual character of the project area; (c) permanent changes in physical features that would result in the effective elimination of key elements of the visual character of the project area near a State scenic highway; or (d) the presence of short-term, long-term, or continuous bright light, such as from welding or nighttime construction, that would detract from a project area that is otherwise generally dark at night or that is subject to artificial light.

DISCUSSION: The measure for determining whether a project will result in aesthetic impacts is a qualitative judgment rather than a set of quantifiable parameters. As such, the opinion of what may be an adverse aesthetic impact can vary from person to person. With regard to scenic vistas and scenic resources the principle purpose of the project is to provide self-guided access to Humboldt Bay and its view-sheds by utilizing a dedicated trail and day use areas. The project area is in the coastal zone, and therefore subject to applicable coastal scenic resource protection measures. The vista from the shore includes views of the Elk River, Elk River Spit, Samoa peninsula, King Salmon area, and Humboldt Bay. The project site, which is inland from the shore, generally has a degraded appearance as former industrial lands. There is shoreline debris, abandoned utility structure footings, invasive weeds/plants and in some cases trash accumulations associated with transient campers and illegal dumping.

The project will improve the scenic character of the area. The proposed project is designed to improve the scenic quality of the area by: removal of defunct fencing, invasive plants; installation of trash receptacles; improved surfacing, landscaping and associated drainage in parking areas (runoff from parking areas will be treated using on-site LID BMPs where feasible and mechanical treatment where LID is not practical); and by attracting more regular public use of the area that will deter unwanted uses.

A minimal amount of low-level, low glare lighting directed away from the Elk River Estuary will be constructed at parking facilities to provide for public safety. These lights will not be left on all night, but will be programmed to stay on only a few hours after sunset to reduce the potential for unwanted activities at these locations. Nighttime glare will increase slightly at four locations in the project area: Truesdale Vista Point, corner of Hilfiker Lane and end of Hilfiker Lane. There is currently lighting at the adjacent wastewater pump station facility, along Truesdale Street.

Observation platforms will be up to 3 feet in height with railing that has the least amount of visual impact as possible. Views from observation platforms of coastal and estuarine habitat, wildlife and birdlife will be enhanced. Access control features will be improved and will reduce visual impacts. Currently, large boulders are used to limit vehicular access. Most or all of these rocks will be removed and replaced with less obtrusive, lower stature access control structures. Interpretive signage and artwork will be designed and placed to be aesthetically beneficial and to ensure that coastal and estuary vistas are not negatively impacted. The number of interpretive signs and kiosks will be kept small relative to the length of the project area.

Therefore, based on the conclusions above, Staff finds that that the project will not result in significant adverse aesthetic impacts.

II. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would: (a) change the availability or use of agriculturally important land areas designated under one or more of the programs above; (b) cause or promote changes in land use regulation that would adversely affect agricultural activities in lands zoned for those uses, particularly lands designated as Agriculture Exclusive or under Williamson Act contracts; or (c) change the availability or use of agriculturally important land areas for agricultural purposes.

DISCUSSION: The City does have farmlands, and lands of a size suitable for agricultural

production within City Limits. However, the project site has no farmlands, nor lands of a size and soil composition suitable for agricultural production, and no such lands exist on adjacent or nearby properties. Therefore the project will have no impact on farmlands or agricultural lands.

III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would (a) directly interfere with the attainment of long-term air quality objectives identified by the North Coast Unified Air Quality Management District; (b) contribute pollutants that would violate an existing air quality standard, or contribute to a non-attainment of air quality objectives in the project's air basin; (c) produce pollutants that would contribute as part of a cumulative effect to non-attainment for any priority pollutant; (d) produce pollutant loading near identified sensitive receptors that would cause locally significant air quality impacts; or (e) release odors that would affect a number of receptors.

DISCUSSION: The North Coast Unified Air Quality Management District (NCUAQMD) is responsible for monitoring and enforcing local and State air quality standards. Air quality standards are set for emissions that may include, but are not limited to: visible emissions, particulate matter, and, fugitive dust. Pursuant to Air Quality Regulation 1, Chapter IV, Rule 400 – *General Limitations*, a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Visible emissions are fairly self-explanatory. They include emissions that are visible to the naked eye, such as smoke from a fire. The project does not involve any visible emissions.

With regard to particulate matter, all of Humboldt County has been designated by the California State Air Quality Board as being in "non-attainment" for PM-10 air emissions. PM-10 air emissions include chemical emissions and other inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM-10 emissions include smoke from wood stoves and airborne salts and other particulate matter naturally generated by ocean surf. Because, in part, of the large number of wood stoves in Humboldt County and because of the generally heavy surf and high winds common to this area, Humboldt County has exceeded the State standard for PM-10 air emissions. Therefore,

any use or activity that generates unnecessary airborne particulate matter may be of concern to the NCUAQMD. The amount of dust and other small particulate matter that will be released is of such a small scale that it clearly will not add to the PM-10 non-attainment.

Regarding sensitive receptors, the construction will, for a short time, generate dust as infrastructure and restrooms are built and grading is conducted. Nearby sensitive receptors in this case are the adjacent wetlands and or environmental sensitive habitat areas. Because the project will only emit dust during the relatively short construction period, the project will not result in substantial air quality impacts on or to sensitive receptors. Construction will, as required by regulation, meet all applicable local, State and Federal standards for building construction, debris disposal and pollutant control. With regard to objectionable odors, the project does not propose any use or construction technique that will result in odors that could reasonably be considered objectionable by the general public. However, the visiting public will be exposed to a facility that periodically produces objectionable odors. The City Wastewater Treatment Facility is located immediately east of the southern project area, and produces odors that can range from undetectable to strong in the project area. The project area is already fully accessible to the public, however, and no increased impacts will result of the proposed public access project. The project will likely result in increases in vehicular and non-vehicular traffic to the Truesdale and ERWS area, as well as in bicycling and walking, which are anticipated to have an overall balanced or reducing effect on vehicle miles traveled and associated emissions, particularly when the ERWS trail is connected with the remainder of the planned Eureka Waterfront Trail & Promenade, which is part of the planned California Coastal Trail.

Based on the conclusions above and with the mitigation measure listed below, the project will not result in adverse air quality impacts, nor result in a cumulatively considerable increase in the PM-10 non-attainment.

MITIGATION MEASURE NO 1. The applicant and/or construction designee, at all times, shall comply with Air Quality Regulation 1, Chapter IV to the satisfaction of the NCUAQMD. This will require, but may not be limited to: (1) covering open bodied trucks when used for transporting materials likely to give rise to airborne dust; and (2) the use of water for control of dust in construction operations, the grading of roads or the clearing of land.

IV. BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers whether the proposed project would result in a significant adverse direct or indirect effects to: (a) individuals of any plant or animal species (including fish) listed as rare, threatened, or endangered by the Federal or State government, or effects to the habitat of such species; (b) more than an incidental and minor area of riparian habitat or other sensitive habitat (including wetlands) types identified under Federal, State, or local policies; (c) more than an incidental and minor area of wetland identified under Federal or State criteria; (d) key habitat areas that provide for continuity of movement for resident or migratory fish or wildlife, or (e) other biological resources identified in planning policies adopted by the City of Eureka.

DISCUSSION: The project entails formal access to natural areas on the eastern shore of the Elk River and its entry point into Humboldt Bay in southwestern Eureka. The project area is located on undeveloped land beginning at the Truesdale Vista Point to the existing Elk River Wildlife Trail located at the northern boundary of the Eureka Wastewater Treatment Plant (EWWTP). The project area is bordered to the north by industrial, commercial retail and residential property, railroad tracks, residential properties, industrial\retail businesses and US 101 to the east, the EWWTP, wetlands, Elk River and grazing lands to the south and the Elk River Estuary and Humboldt Bay to the west.

Habitats within the project area consist of uplands and wetlands, with several corresponding vegetation communities in each. Upland communities include disturbed, upland forest, and foredune/dunemat. Wetland communities consist of Estuarine intertidal irregularly exposed wetland (salt marsh), Estuarine intertidal regularly exposed, Palustrine forested wetland, Palustrine emergent wetland, and Palustrine scrub-shrub. The wetland community names are consistent with the National Wetland Inventory (NWI) classification system.

For the purpose of quantifying potential biological impacts as a result of the trail, the City secured the services of SHN Consultants to conduct biological survey's of the proposed trailheads and trail corridor and immediate surrounding habitats. Surveys were conducted on several occasions between July 2006 and June of 2010. The methodology and details of SHN's findings are enumerated with the attached biological reports as an appendix to this Initial Study.

Floristically, the site is known to contain habitat for 3o special status species listed on the California Natural Diversity Database (CNDDB). As a result of the CNDDB query, additional seasonally appropriate botanical surveys were conducted at the project site. Three special status species were detected within or immediately adjacent to the proposed trail. These species include Point Reyes Bird's Beak, Humboldt Bay Owl's Clover, and Lyngbye's sedge. Point Reyes Bird's Beak and Humboldt Bay Owls Clover are located in salt marsh habitat adjacent to the footpath (see attached SHN Report Mapping). Both species are scattered throughout the high quality salt marsh habitat and include 100 or more individuals of each species. No individuals were found within the potential impact area of the trail. However, there is a network of existing "unofficial" trails in the salt marsh habitat that are regularly used by pedestrians, although these trails are not the footpath that is

designated for use. Use of these "unofficial" trails results in the trampling of the Humboldt Bay Owl's Clover and Point Reyes Bird's Beak. Humboldt Bay's Owl's Clover is also located outside of the study area along the southern bank of the south slough in salt marsh habitat. The proposed project is not expected to impact this occurrence because the Owl's Clover in this area is located outside of the trail improvement impact zone.

Lyngbye's sedge is located in the salt marsh habitat just south of the study area segment that runs from the railroad to the Herrick Avenue Park and Ride. One occurrence consists of approximately 5 plants and is located in the study area, a few feet from the edge of pavement along Pound Road and outside of the proposed area of project construction impacts. The other occurrence is located further south of Pound Road and consists of approximately 5o individuals (see attached reports).

SHN biologists recommended avoidance of the Point Reyes Bird's Beak occurrences within the study area. "*Any impacts to this species would not only require mitigation that reduces potential impacts to a less than significant level pursuant to Section 15380 of the California Environmental Quality Act (CEQA), but would also require state and federal permits if the wetland habitat that this special status species occurs is impacted.*" The City concurs with SHN's recommendation of avoidance of all special status species. As identified within SHN's biological mapping, the proposed trail improvements do avoid all aforementioned floras. However, discretion should still be practiced at the project site by contractors in order to avoid accidental disturbance. A mitigation measure has been added to assure that contractors know where the listed species occur and how to identify them.

The CNDDB database identified 27 special status species of wildlife that could occur on or near the project site. The consultants reported observing forty-one avian species and two mammalian species during field visits of June 19, July 20, and August 2, 2007. Three of the 27 special status species known to occur within the vicinity were observed including the Osprey, Brown Pelican, and Double Crested Cormorant. At the request of the City of Eureka, SHN conducted an updated examination of the CNDDB list on June 22, 2010. Two new species were added to the CNDDB list, the Sandy Beach Tiger Beetle and the Wolf's evening primrose. According to SHN biologists, habitat for the Tiger Beetle does exist, but the sole occurrence was recorded in 1905, and CNDDB indicates that the species has been "extirpated" locally. The Wolf's evening primrose is the only special status not reported in the 2007 assessments. According to SHN, marginal habitat does occur on the project site. But because seasonally appropriate surveys were undertaken at the project site, the SHN biologist would have observed Wolf's evening primrose on the project site if it were present.

With regard to the special status wildlife species, SHN stated the following: "The northern industrial yard [Truesdale Park and Crowley sites] currently offers little to no habitat and can be greatly improved by removing construction debris and human encampments. Replanting the northern industrial yard with native trees and shrubs would greatly improve the overall habitat values of this section of the study area. The majority of this northern "Crowley" property has the potential be high quality habitat for wildlife. The wetland\upland mosaic is attractive to many bird species. Unfortunately, the current condition of the northern Crowley property is degraded due to human encampments in nearly every willow thicket. This portion of the study area would be greatly improved by the development of the Iksori Trail [related increased public presence] and removal of human encampments and debris. The southern Crowley property has great potential for wildlife use primarily due to the extensive wetlands that exist on this portion of the study area. The estuarine habitat portion of the study area could be greatly improved for wildlife by removing invasive non-native plants that form low-diversity monocultures and [by] restoring native plants."

In addition to characterizing the habitat, flora, and fauna of the proposed trail, the consultants undertook wetland delineations on and adjacent to the entire length of the trail which also included trail head improvement locations. Wetlands were delineated at the project site both on and adjacent to the proposed trail corridor. The identified wetlands and projected wetland impacts of the trail are illustrated within the attached biological reports. Minor filling and grading of wetland areas are expected to be required of the proposal. The total projected amount of wetland fill is 12,089 square feet. However, suitable mitigation wetland areas were characterized by the consultants with input provided by California Coastal Commission staff. The City of Eureka, Coastal Commission biologists, and SHN biologists have designed and agreed upon a 4 to 1 ratio, saltwater marsh mitigation project. City staff, their consultants and Coastal Commission staff worked closely to define the mitigation area. The mitigation proposal includes a Reduced Buffer Request, Wetland Mitigation Area map, Mitigation Wetland Grading and Planting Plan and Mitigation Wetland Monitoring Plan.

Additionally a pre-constructed footbridge is proposed to span an estuarine wetland of South Slough (see SHN report Phase II), which will negate any further wetland disturbance currently occurring by unofficial foot-traffic crossing the wetland. The bridge will be subject to multiple jurisdictional permits and consultation. When in place, the bridge will rectify an environmentally substandard wetland crossing which is consistent with the biological recommendations shown below:

"All wetlands should be avoided to the extent possible and areas delineated as ESHAs should be preserved. Additionally, the clusters of American dunegrass in the western portion of the study area should be preserved and enhanced to the extent possible. There is a unique opportunity to incorporate the wetlands and ESHA throughout the project area with the proposed trail improvements. Quality wildlife viewing occurs on the northern Crowely property and placement of the trail between ESHA and wetlands would contribute immensely to this opportunity. There is ample upland habitat along the western portion of the study area to place the trail in a manner to maximize viewing natural and scenic resources in Humboldt Bay and the Elk River Estuary. The trail should be routed around the Palustrine emergent wetland and salt marsh habitat in the parking and landscape area to avoid impacts to thee environmentally sensitive resources."

The proposed project will not hinder or interfere with the movement of wildlife or fish species.
When development is proposed near sensitive habitat areas, protection measures such as Storm Water Pollution Prevention Plans (SWPPPs) or other preventative measures designed to reduce sedimentation and erosion into sensitive areas, will be properly implemented and reviewed in the development phases of a project. These measures would involve both temporary and permanent mitigation (*See Mitigation Measures in the Hydrology and Water Quality Section of this Initial Study).*

MITIGATION MEASURE NO 2. Construction activities shall avoid impacts to Humboldt Bay owl's clover or Point Reyes bird's beak to the extent feasible. If impacts are unavoidable, work shall be conducted from September through December (outside the blooming period) where these plants could be directly impacted. Where impacts are unavoidable, the top 6-inches of soil will be removed, separately stockpiled, and replaced, and original contours restored upon completion of the work.

MITIGATION MEASURE NO 3. The City shall create and or enhance 1.1 acres of salt marsh habitat at the project site, as depicted by the consultant's "Wetland Mitigation

Areas" mapping, dated October 2010, to the satisfaction of the California Coastal Commission. Said creation and or enhancement work shall commence during the construction of the subject trail. In order to ensure the successful reestablishment of salt marsh, the City shall monitor the biological establishment of the restored wetland for five years. If required, the City shall consult the Coastal Commission or the California Department of Fish and Game and take the appropriate measures to ensure the wetland mitigation areas are successful.

V. **CULTURAL RESOURCES**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would cause (a) physical changes in known or designated historical resources, or in their physical surroundings, in a manner that would impair their significance; (b) physical changes in archaeological sites that represent important or unique archaeological or historical information; (c) unique paleontological resource site or unique geologic feature; or (d) disturbance of human burial locations.

DISCUSSION:

The entire length of the proposed trail transects prehistoric and historic sites of habitation and industry. To the untrained eye, most evidence of the preceding habitation and use of the area are no longer visible on the surface of the project area. According to the archeological survey, the trail and trail heads pose no physical threat to ***surface*** archeological resources. The lead archaeologist Jamie Roscoe, M.A. RPA, stated *"it is our professional opinion that all potentially important* ***surface*** *archeological resources have been identified within the project area."* ***(Cultural Resources Investigation of the Iksori Trail Access Project, Roscoe July 2009 and June 2010).***

Subsurface archeological resources may be lying in situ in and around the project area. As such, consultation with the Wiyot Tribe was essential to the environmental review of the proposal. As a result of Tribal consultation and before any further entitlement work could be conducted, the services of a professional archaeological team were warranted to survey the project area and draft appropriate mitigation for the inadvertent discovery of subsurface artifacts and/or human internments. Most of the trail "travel-way" exists in the form of well traveled existing dirt trail. Grading and earth disturbing activities will be a requirement of construction, both at the trail heads and on the trail itself. As a result of the archeological survey and tribal consultation the proposal is conditioned with mitigation measures that include the inclusion of a cultural monitor on site during ground disturbing activities.

If undiscovered paleontological, archaeological, historical, ethnic or religious resources are encountered during grading or construction activities State Law requires that all work cease and a

qualified cultural resources specialist be contacted to analyze the significance of the find and formulate further mitigation (e.g. project relocation, excavation plan, protective cover). And, pursuant to the California Health and Safety Code Section 7050.5, if human remains are encountered, all work must cease and the County Coroner contacted.

After consultation with the Wiyot Tribe, it is recommended that the proposed trail, and in fact the entirety of multiple-use trail in the Elk River Wildlife Sanctuary, be named the **'Iksori Trail'**, to honor the area's original Wiyot name. The multiple-use trail and associated amenities described in this document will be referred to as the Elk River Access and Iksori Trail.

Based on the above summary (complete archeological report is attached), the project will not disturb paleontological, archaeological, or historical resources, nor have the potential to cause a physical change, which would affect unique ethnic cultural values or restrict existing religious or sacred uses of the project area. The Cultural Resource Investigation is attached to this Initial Study.

MITIGATION MEASURE NO. 4 To mitigate the potential of disturbing undiscovered subsurface archeological recourses, at least a month prior to construction, the applicant's retained professional archaeologist shall conduct test excavation pits at the exact location of pending construction related ground disturbing activities.

MITIGATION MEASURE NO. 5 If any cultural resources are discovered during pre-constructing testing, construction, or maintenance of the proposed project, all work shall be halted until a qualified cultural resource specialist is contacted to analyze the significance of the find and, if necessary, recommend further resource protection measures. If human remains are found on the site, all work is to be stopped and the County Coroner shall be contacted.

VI. GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined by the California Building Code (2007), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers project-related effects that

could involve or result from: (a) damage to project elements as a direct result of fault movement along a fault identified in the Alquist-Priolo study or other known fault; (b) damage to project elements as a direct or indirect effect of seismically derived ground movement; (c) damage to project elements because of landslides that are not seismically related; (d) project-derived erosion by water or wind of more than a minimal volume of earth materials; (e) project-derived or project-caused secondary instability of earth materials that could subsequently fail, damaging project elements or other sites or structures; (f) location of project elements on expansive soils that are identified by professional geologists, which could result in damage to project elements or other sites or structures.

DISCUSSION: The North Coast is the location of numerous fault lines and is near the intersection of three tectonic plates. However, based upon a review of the Alquist-Priolo Earthquake Fault Zoning Maps, the proposed project is not in an area where fault rupture is known or expected. The Little Salmon fault is closest; it is approximately 2 miles southeast of the project area. Potential impacts resulting from fault rupture are less than significant. However, Humboldt County is very seismically active and susceptible to strong seismic ground shaking. All property within the City of Eureka is located within special Seismic Design Category zones (SDC) as prescribed by the 2007 California Building Code (CBC). Therefore, all new construction must comply with the construction standards for these specific design categories as mandated by the CBC.

Because all construction must comply with the standards of the CBC, and because construction that conforms to these Standards is presumed to meet the Seismic Design criteria, the potential impacts from seismic ground shaking and seismic ground failure, including liquefaction are considered (on any future, new construction) less than significant. The project will not create additional hazard.

The project area is on relatively flat ground with no geologic features in the vicinity that could result in, or expose people to landslides. "Soils in the project area are predominantly sand and some compacted fill on former industrial parcels; in the roadway areas the substrate is a sand/gravel mix fill. A coastal erosion hazard investigation of the Elk River Estuary is included in the *Elk River Access Project Recommendations* report prepared by the Redwood Community Action Agency (8/22/02) for the City of Eureka. The investigation, *Preliminary Coastal Erosion and Mitigation Alternatives, Elk River Estuary, Humboldt Bay, Eureka, California* was prepared by SHN Consulting Engineers and Geologists (6/11/02). The Investigation states: *Due to a combination of factors including construction of the jetties, placement of rock slope protection along the coastline segment extending from Buhne Point to Elk River, levy confinement of Elk River, and increased Elk River sediment yield, the Elk River Spit has pro-graded (lengthened) approximately 5,000 feet to the north during the past 125 years. As such, the spit now provides erosion protection from ocean and bay generated wind blown waves for the southern half of the project. The northern half of the project is not protected by the spit and is subject to wind driven wave attacks as well as wave run-up generated by passing ships. This is primarily the Truesdale Beach segment of the bay shoreline. Within the project area, the most significant area of erosion that should be mitigated is the end of Truesdale Avenue.*

Stream bank erosion along the edge of the Elk River channel does not appear to play a significant role as a bay margin erosion process. Since the bay is at the base level, Elk River current velocity is either very low or non-existent at high tide when the tidal elevation is in contact with the stream bank or bay margin."

In January 2007, the lack of protection on the northern half of the project area referred to in SHN's

2002 report was remedied. Due to extensive damage from storm activity to the northern half of the project area, emergency permits were obtained and shoreline protection was established along the Truesdale Beach segment of the bay shoreline.

Minor site grading will be performed in compliance with the Best Management Practices as prescribed in the Eureka Municipal Code, Regional Water Quality Control Board regulations and the Uniform Building Code. Therefore, no substantial soil erosion or loss of topsoil will result from the project. The proposed restroom facilities at the western terminus of Truesdale Street and Hilfiker will be connected to the City's sewage disposal system; therefore, the project will not have septic tanks or other alternative wastewater disposal systems.

Because the project structures (two restrooms) and applicable facilities (e.g. fences) will be constructed to standards specified by the Uniform Building Code for Seismic Design, and because Best Management Practices as prescribed in the Eureka Municipal Code, Regional Water Quality Control Board regulations, and the Uniform Building Code will be employed, the project will not result in substantial adverse impacts relating to geology and/or soils.

Based on the above findings, staff concludes that the project will not result in substantial adverse impacts relating to geology and/or soils.

VII. GREEN HOUSE GAS EMISSIONS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

THRESHOLDS OF SIGNIFICANCE: This initial study considers to what degree the project would contribute to greenhouse gas emissions and global warming.

DISCUSSION: On Earth the gases believed to be most responsible for global warming are water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydro fluorocarbons, per fluorocarbons, and sulfur hexafluoride. Enhancement of the greenhouse effect can occur when concentrations of these gases exceed the natural concentrations in the atmosphere. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects:

1. Higher maximum temperatures and more hot days over nearly all land areas;
2. Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
3. Reduced diurnal temperature range over most land areas;
4. Increase of heat index over land areas; and
5. More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts on agriculture, changes in disease vectors, and changes in habitat and

biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

The City of Eureka has been planned and zoned as a mixed-use City for over 40 years. The importance of developing proximate housing to jobs and services, with regard to the conservation of energy and curbing the release of greenhouse gases, is strongly being promoted by the planning and scientific community. Urban infill is obviously the antithesis of urban sprawl. Properly located redevelopment and infill can greatly reduce vehicle miles traveled (VMT) to jobs and services. Lessening VMTs within personal vehicles obviously saves energy and reduces greenhouse gas emissions.

The topic of global warming has been a focus of discussion within the scientific community for quite some time; however, statutory measures or actions to reduce emissions have only been recently implemented by the State of California. From a land use perspective, the recently adopted legislation ***(SB 375 & AB 32)*** strive to reduce the levels of greenhouse gases through the practice of smart-growth or mixed use development. As of now, greenhouse gas emission thresholds or limits have not been legally established for the North coast. Nevertheless, staff finds that based on Eureka's slow annual growth rate of <1%, the implementation of smart-growth policies such as the use of trails and pathways, and a reliance on urban infill Eureka's contribution of greenhouse gases will be less than significant compared to other urbanized areas within California.

Some amount of GHG emissions would result from motor vehicle trips and construction operations on the trail. However, is not anticipated that the trail would have an individually discernable effect on global climate change (i.e., increase global temperature as a result of emissions from the project). It can reasonably expected that once the entire trail is integrated with the California Coastal Trail along the Eureka waterfront and through the region, use of the trail would reduce some amount of VMT by encouraging more non-motorized travel along the waterfront and parallel to US 101.

Based on the discussion above, the project will not adversely increase greenhouse gas emissions or contribute substantially to global warming.

VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			X	
g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized area or where residences are intermixed with wildlands?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would involve: (a) potential storage or use, on a regular basis, of chemicals that could be hazardous if released into the environment; (b) operating conditions that would be likely to result in the generation and release of hazardous materials; (c) use of hazardous materials, because of construction-related activities or operations, within a quarter-mile of an existing or proposed school; (d) project-related increase in use intensity by people within the boundaries of, or within two miles of, the Airport Planning Areas; (e) project-derived physical changes that would interfere with emergency responses or evacuations; (f) potential major damage because of wildfire.

DISCUSSION There will be no hazardous materials associated with the project other than temporary short-term materials such as the fuel and oil used by construction equipment. There is always the possibility when equipment is operating, such as during grading operations, that an accident could occur and fuel could be released onto the soil. This could happen at any time in any location, and is not peculiar to this site or this project. This type of work occurs all the time without incident, and is therefore determined not to represent a significant impact. Equipment on site during construction will be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills.

There is no evidence to indicate that contaminated soils are present at the proposed project site. However, during project construction, if there is any evidence that indicates contaminated soils are present on the site, either from visual observations or odors indicative of regulated substances, the applicant shall be responsible for performing soil sample analyses. Based on the results of the analysis, the applicant shall consult with jurisdictional agencies regarding follow-up procedures. The applicant shall comply with all requirements/regulations of the appropriate agencies with regard to handling, transport and disposal of potential hazardous substances to the satisfaction of the applicable agency.

The proposed project will not affect any emergency response plans. All on-site emergency access and circulation are already developed and function appropriately.

The project site is located within City Limits of Eureka; there are no “wildlands” near the project site and very low likelihood of wildfire in the ERWS. Therefore, there will be no impact as a result of wildland fires.

The project site is approximately 4.4 miles from Murray Field Airport and is located outside the airspace analysis zone identified in the 1993 Airport Land Use Compatibility Plan for Murray Field. The project site is located 1.7 miles southeast of the City owned Samoa airstrip.

Based on the discussion above, and with the precautionary mitigation measure as described below, Staff concludes that the project will not result in any substantial impacts with regards to hazards and hazardous materials.

MITIGATION MEASURE NO 6. During project construction, if there is any evidence that indicates contaminated soils are present on the site, either from visual observations or odors indicative of regulated substances, the applicant shall be responsible for performing soil sample analyses. The findings of the survey shall be submitted, as applicable, to the RWQCB, DTSC, and any other appropriate regulatory agencies. The applicant shall comply at all times with the requirements and regulations of the RWQCB, DTSC, and other agencies with regard to the handling, transport, and disposal of hazardous materials such as contaminated soils to the satisfaction of the applicable agencies.

VIII. HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on or off-site?		X		
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?			X	
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?			X	
i) Expose people or structures to a significant risk or loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Result in inundation by seiche, tsunami, or mudflow?		X		

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would involve: (a) improvements that would violate standards set for water quality and for discharge of waste water; (b) use of, or interference with ground water such that the amount of flow of groundwater is adversely impacted; (c) drainage improvements that would alter or cause an increase in amount or flow of drainage, or that would affect the free-flow of a stream or river or cause an increase in silt runoff as to cause adverse impact; (d) added runoff from the site that would exceed the capacity of drainage facilities; (e) the creation of polluted runoff or other general

adverse water quality impacts; (f) the placement of housing or other structures within the 100-year flood plain, or other area subject to flooding; (g) development in such a manner or location that it would be adversely affected by seiche, tsunami or mudflow.

DISCUSSION: The project will include minor site grading conducted in accordance with the Best Management Practices prescribed in the Eureka Municipal Code, Uniform Building Code and the regulations of the Regional Water Quality Control Board. The project includes utilizing Low Impact Development (LID) techniques to address stormwater treatment and detention for the upgraded street and parking lot at Truesdale Vista Point. The grading, drainage control, and erosion control will not alter the existing pattern of drainage on the property.

With the minimal site grading, existing of rock slope protection, and the limited increase in stormwater runoff rate from surfacing improvements, the project will not substantially impact the surface water drainage patterns, water quality, nor exceed the capacity of stormwater drainage systems.

The project does not include development that would impact the quality or quantity, rate or flow, and removal, recharge or addition to groundwater supplies.

The only proposed structures are three restroom facilities, which would not impede or redirect flood flows.

Due to the known seismic activity in the Pacific Rim, a tsunami could impact Humboldt Bay. It is expected that the impact of a tsunami on Humboldt Bay would primarily occur along the north and south spits and the King Salmon and Fields Landing areas, which are located directly across from the opening to Humboldt Bay. The Elk River Wildlife Sanctuary is in the tsunami run-up zone, should there be a large event along the fault (1995 report (*Special Study 115*) on the Little Salmon Fault by the Department of Conservation of Mines and Geology). However, the project area is currently used for recreational activity, and planned improvements will not create significant additional risk. With increased use of the project area, mitigation measures should include installing interpretive tsunami hazard warning signs at each trailhead and at paddling site put-ins.

When development is proposed near sensitive habitat areas, protection measures such as Stormwater Pollution Prevention Plans (SWPPPs) or other preventative measures designed to reduce sedimentation and erosion, from grading and other ground disturbing activities, into sensitive areas will be properly implemented and reviewed in the development phases of a project. These measures would involve both temporary and permanent mitigation.

The City of Eureka stormwater policies dictate that new development that would increase storm drainage runoff in a 10-year storm event more than one cfs, are required to provide retention/siltation basins to limit new runoff to prior-to-development flows.

Because of the use of bioretention swales and pervious trail surface, the project does not include development that would substantially impact the quality or quantity, rate or flow, and removal, recharge or addition to groundwater supplies.

The existing and proposed use is, and shall be, connected to the City's water supply system. Based on review of the Flood Insurance Rate Map prepared by the Federal Emergency Agency, the proposed development area is outside the 100-year flood plain ***(FIRM Panel 060062-0005 June 17, 1986)***. Therefore, the proposed project will not impede or redirect flood flows nor

expose people or structure to flooding.

Based on the discussion above, and with the mitigation measures described below, the project will not result in a substantial impact regarding hydrology and water quality.

MITIGATION MEASURE NO. 7 To mitigate the potential for increased stormwater flows being directed onto adjoining properties or environmentally sensitive habitat areas, Redwood Community Action Agency, prior to building/grading permit approval, shall submit a Stormwater Pollution Prevention Plan (SWPPP) to the City of Eureka Public Works Stormwater Division and include LID techniques (permeable pavements/surfacing, green roofs, bioretention and or vegetated swales) that will infiltrate stormwater on-site so that post development hydrology mimics pre-development. Said Plan and LID techniques shall be approved to the satisfaction of the North Coast Regional Water Quality Control Board, California Coastal Commission, Building, Planning, Engineering, and Public Works Departments. Said drainage plan features/measures shall be constructed to the satisfaction of the aforementioned Departments, prior to opening the trail to public use.

MITIGATION MEASURE NO. 8 To mitigate the potential for stormwater to carry additional pollutants from the proposed parking lot areas, LID treatments such as bioretention swales, vegetated swales and permeable pavements will provide treatment of parking lot runoff. Good housekeeping practices will include maintenance and cleaning of the parking areas a regular basis. No debris, soil, silt, sand, bard, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from construction operations shall be allowed to enter or be placed where it can enter any portion of the drainage system of the City of Eureka. All applicable erosion control measures and BMPs will be implemented during all phases of construction.

MITIGATION MEASURE NO. 9 To inform the general public of the potential of tsunami run-up inundating the trail area, each trailhead location shall have signage informing the public of what actions to take in the event of seismic activity. Said signage shall be posted to the satisfaction of the City of Eureka and prior to the trail being open to the general public.

IX. LAND USE AND PLANNING. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would (a) divide an established community or conflict with existing land uses within the project's vicinity, such as agriculture resources; (b) conflict with the Eureka General/Coastal Plans

designation, policies, and zoning ordinances regarding commercial, public, and quasi-public facilities; (c) conflict with applicable environmental plans and protection measures enforced by regulatory agencies that have jurisdiction over the project, such as habitat conservation plans or a natural community conservation plan.

DISCUSSION: The project site is located along the Elk River estuary and Humboldt Bay shoreline. The Elk River Wildlife Sanctuary is zoned Natural Resources and designated by the General Plan as Natural Resources, which permits conditional uses including pedestrian access; educational/scientific study (by permit from management agency); and restoration and enhancement for fish and wildlife habitat values. The northern portion of the project area is zoned MC–Coastal Dependent Industrial and designated by the General Plan as [CDI] Coastal-Dependent Industrial Districts; conditional uses include access support facilities and boat launching and berthing facilities.

The project is within the Coastal Zone and therefore subject to applicable coastal zone regulations. The project does not conflict with the Local Coastal Plan, or any applicable habitat conservation plan or natural community conservation plan, specifically the 1982 Elk River Wildlife Area [Sanctuary] Management Plan).

Based on the above discussion, the proposed project is consistent with conditionally permitted uses, zoning, and general plan designations in which it is located Therefore, the project will not divide the community and will not result in an adverse impact to land use and planning.

City plans for access improvements in the project area focus on the Truesdale Vista Point. The proposed project is consistent with the General Plan and Capital Improvement Program (CIP), and expands on the City's current Vista Point plans to connect public access facilities with the Elk River Wildlife Sanctuary, to the south. The City identified recreational improvements to this area as a priority in the 1999 General Plan:

> Policy 5.B.1: c. Establish scenic vista points at numerous locations along the waterfront, including construction of a public access vista point at the foot of Truesdale.
>
> Policy 5.B.7: The City shall establish a coordinated continuous public access system throughout its Coastal Zone, consisting of pedestrian walkways, nature walks, and bikeways with necessary support facilities, as described in Table 5-2.
>
> Excerpts from General Plan Table 5-2:
>
> > *For the Elk River Wildlife Area: Public access ways shall be implemented by the City in consultation with the Department of Fish and Game...*
> >
> > *At the foot of Truesdale a scenic vista point shall be developed on the shoreline to complement the existing vertical access at the street end. Access support facilities shall include a small parking area, bicycle racks, and trash receptacles.*
> >
> > *Along the waterfront between Truesdale and Hilfiker Lane, a continuous waterfront trail shall be dedicated and developed in conjunction with future development in order to connect the vertical access ways at the two street ends.*

The brief Truesdale Vista Point 2001-2006 CIP project description includes 25,000 ft^2 of parking, traffic barriers and picnic tables as a future priority.

The City is currently proposing extension of Waterfront Drive to Hilfiker Lane. This roadway would be located on the east side of the railroad corridor, and would not conflict with the proposed project. Between Del Norte Street and Truesdale Street, a Class I multi-use trail is planned to

accompany the proposed roadway. This trail should connect to the trail recommended herein at the Truesdale Vista Point.

Regarding habitat and conservation plan compatibility, the Draft Element in no way encourages development incursion into Environmentally Sensitive Habitat Areas (ESHA) or other biologically sensitive areas within the City of Eureka.

Based on the above discussion, the project will not result in an adverse impact to land use and planning.

X. MINERAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would interfere with the extraction of commodity materials or otherwise cause any short-term or long-term decrease in the availability of mineral resources that would otherwise be available for construction or other consumptive uses.

DISCUSSION: Mineral resources used in connection with the development of those associated with construction and landscaping. Although there are no surface mining operations within the Eureka City limits, the County supports a significant number of river and quarry mining operations that extract over one million cubic yards of material annually. These mining operations support the construction industry of Northern California. There is no doubt that the limited amount of mineral resources needed for the trail improvements within the City will have no substantial adverse impact on the local mineral resources or reserves. Therefore, based on the above, the proposed project will not result in the loss of availability of a State or locally known mineral resource.

XI. NOISE. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Expose persons to or generate excessive ground borne vibration or ground borne noise levels?			X	
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers whether the proposed project would produce: (a) sound-pressure levels contrary to the City of Eureka noise standards; (b) long-term ground vibrations and low-frequency sound that would interfere with normal activities and which is not currently present in the project area; (c) a substantial increase in ambient short-term or long-term sound-pressure levels; (d) changes in noise levels that are related to operations, not construction-related, which will be perceived as increased ambient or background noise in the project area.

DISCUSSION: Noise does not travel well, it has no staying power beyond that of its source, and it does not accumulate in the environment. Nonetheless, prolonged noise exposure is a serious threat to human health, resulting in high stress levels and impaired hearing. Generally, noise is a level of sound or a particular sound that a specific receiver does not want to hear. Whether a sound is considered a noise depends on the source of the sound, the loudness relative to the background noise, the time of day, the surroundings, and the listener. The difference in people's reactions to different noises or sounds is explained by the perceived noisiness, or how undesirable the sound is to the people in the vicinity of the source. An unwanted sound may be extremely irritating although it is not unreasonably loud. The areas most vulnerable to the harmful effects of sound are residential locations, particularly at night.

The City of Eureka's adopted General Plan specifies standards for non-transportation and transportation noise sources. The goal of the General Plan with regard to noise exposure is to protect Eureka residents from the harmful and annoying effects of exposure to excessive noise. For non-transportation related noise, the maximum allowable noise at the property line of lands designated for noise-sensitive uses cannot exceed 65dB (nighttime) to 70dB (daytime).

The highest possible noise levels associated with the project may result from the temporary, sporadic and relatively short term use of machinery, power tools, and hammering during the construction limited to the duration of the individual project. Under the Noise Element of the adopted General Plan, general construction noise is considered acceptable because such noise, although loud and often annoying, is of limited duration and intensity. Therefore, the project will not generate noise in excess of established standards.

Ground borne noise that may be associated with the construction of accessory buildings (restrooms) or the improvement of trail surfaces could occur during the "groundbreaking" or initial earthmoving undertakings of a construction project. However, any such noises can be considered "normal" and not "excessive" or "substantial."

Changes in ambient noise levels resulting from the individual components of the construction project would be temporary, sporadic, and limited to the duration of the individual projects. Therefore, ambient noise levels within a construction project's vicinity will not be permanently increased.

The project site is approximately 4.4 miles from Murray Field Airport and is located outside the airspace analysis zone identified in the 1993 Airport Land Use Compatibility Plan for Murray Field. The project site is located 1.7 miles southeast of the City owned Samoa airstrip.

Based on the discussion above, the proposed project will not result in the production of

unacceptable noise levels.

XII. **POPULATION AND HOUSING**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would result in, or contribute to, population growth, displacement of housing units, demolition or removal of existing housing units, or any project-related displacement of people from occupied housing.

DISCUSSION: Eureka was 'founded' in 1850 and incorporated in 1856. The 1860 population was approximately 615. By 1920 Eureka had a population of roughly 12,500. According to the City of Eureka's first General Plan, adopted in 1965, the population of Eureka in 1950 had grown to 23,058 and in 1960 it was 28,137 Between 2000 and 2008, the City population increased by 0.2%, (60 persons) from 26,097 to 26,157 according to the California Department of Finance, Demographic Research Unit.

The above statistical data illustrates that Eureka's population growth has been constant, and in some periods static, regardless of the economic and population trends in the rest of the country. Therefore, it would take a remarkable project to induce 'substantial' population growth or decline, in Eureka.

The number of housing units in Eureka decreased from 11,781 in 1990 to 11,594 in the year 2000 according to the U.S. Census. The Census Bureau 2007 American Community Survey estimated that Eureka's housing stock would rise to 12,077 units. The predicted number was qualified with a margin of error of ±290. Community Development staff has confirmed this rise with a current estimate of Eureka Housing stock at or around 11,984. This number was derived from Building Department records from 2000 to February of 2009. Almost one-third of Eureka's housing stock is multi-family housing, a mix that has remained constant since 1980.

No housing will be displaced and no growth inducement will result from the project. Therefore, Staff finds that the project will not result in substantial adverse impacts regarding population and housing.

XIII. **PUBLIC SERVICES**. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would result in any changes in existing fire or police protection service levels, or a perceived need for such changes, as well as any substantial changes in the need for, or use of, schools, parks, or other public facilities.

DISCUSSION: Public services are currently available to the project site The area is currently patrolled by City Police and State Department of Fish and Game Wardens. The proposed project will facilitate improved foot access on trails and vehicle access on maintenance roads and parking areas for law enforcement and emergency services personnel. The project is not expected to substantially increase the need for patrols by local law enforcement or emergency services. The project may have a beneficial effect on reducing the need for patrol by encouraging more public use and decreasing unwanted uses of the area

The proposed project will enhance parks and recreation options within the City of Eureka. Development of the project will require an incremental increase in the need for public services due to the increase in use of the property. However, the project will not require services beyond the capacity of the service providers. Based on the above, it is not expected that the project will result in an adverse impact on public services.

XIV. **RECREATION**. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree any aspect of the proposed project would be related to demand for recreational facilities or increase use of existing recreational areas such that those areas are physically degraded, including secondary effects such as degradation through over-use of environmentally sensitive areas.

DISCUSSION: The City of Eureka currently maintains thirteen City-owned parks comprising 136 acres. City parks currently offer sufficient recreational opportunities for the population. The Elk River Wildlife Sanctuary is not designated within the City park system, and increased use of the project area is not expected to contribute to the physical deterioration or overuse of the City's

existing recreational facilities.

The proposed project is expected to increase the use of an existing recreational and wildlife area by facilitating access to the area and by developing basic recreational support facilities. The proposed project is designed to accommodate the intended increase in demand without causing or accelerating substantial physical deterioration of the facility. One possible outcome is that trail development and improvement will focus use that currently is more widespread. This would decrease more widespread impacts of the project area.

The project components – such as removal of potentially hazardous shoreline debris, removal of invasive plant species, improved public access, interpretive facilities, and enhancement of native habitat – will have beneficial physical effects on the environment. The recreational facilities will not have an adverse physical effect on the environment (refer to Biological Resources as well as Hydrology and Water Quality, above).

XV. TRANSPORTATION/TRAFFIC. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?			X	
d) Substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e) Result in inadequate emergency access?			X	
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree, if any, the proposed project would be associated with (a) changes in traffic, circulation, or other changes that might be perceived as adverse, including traffic effects resulting from temporary construction-related changes; (b) any project-related changes in levels-of-service on County or State highways; (c) project-associated travel restrictions that would prevent emergency vehicles from reaching the locations where they were needed.

DISCUSSION: The project is expected to increase recreational use levels at the project area, which would result in additional traffic. Roadway access to the site is via Truesdale Street, Hilfiker Lane, and Pound Road west of Broadway/State Route 101, which are used for existing public access activities at all three locations. These streets currently accommodate traffic to the site and are used below capacity. Caltrans District 1 was given the opportunity to comment on the project. On June

30, 2010, Alyson Hunter, Associate Transportation Planner stated that Caltrans' interest in the project was limited to a future maintenance agreement with the City regarding the Herrick Park and Ride segment of the trail. Furthermore, Caltrans had no issue with the proposed project's effect on Trusedale- and Hilfiker-Broadway intersections.

The proposed project will improve emergency access to the area by providing resurfacing on the existing maintenance roadway/trail, upgraded vehicular access control at trailhead parking areas, railroad crossing improvements, and a multi-use trail corridor that will facilitate longitudinal coastal access on foot or bicycle.

The project will increase parking capacity for coastal access in the project area, including the provision of ADA-compliant spaces. The project will not impact air traffic. The project is consistent with current City General Plan and Regional Transportation Plan policies supporting alternative transportation and will help implement such policies by providing improved and expanded non-motorized public facilities.

Based on the above, staff concludes that the project will not have a significant adverse impact on transportation or traffic.

XVI. UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have insufficient water supplies available to serve the project from existing entitlements and resources (i.e., new or expanded entitlements are needed)?				X
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Violate any Federal, State, and local statutes and regulations related to solid waste?			X	

THRESHOLDS OF SIGNIFICANCE: This Initial Study considers to what degree the proposed project would be related to: (a) a substantial demand for water supplies affecting existing entitlements and resources; (b) increase in runoff intensity that exacerbates drainage conditions and changes; and (c) insufficient provision for solid waste disposal.

DISCUSSION The City of Eureka completed construction of a new wastewater treatment facility in 1984 that serves Eureka and the surrounding area. According to the Regional Water Quality Control Board (RWQCB), Eureka's wastewater treatment plant is at about 82% of its permitted dry

weather capacity of 5.24 million gallons per day**.** It was estimated by the City Engineer that the City has the capacity to serve approximately 2,000 equivalent dwelling units or EDU's. Current treatment plant capacity is sufficient to accommodate Eureka's growth at its current rate of growth (i.e., the growth rate experienced between 2000 and 2009) for the foreseeable future. It is estimated, by the City Engineer, that at the current growth rate, the wastewater treatment plant will not reach capacity until the year 2030.

The Truesdale Vista Point and Hilfiker/ trailhead parking areas are proposed to have public restroom facilities. The Truesdale Vista Point facility is proposed to be a one- or two-room flush toilet facility. This facility will be connected to the Truesdale Street neighborhood wastewater gravity line. (Development of a restroom facility at Truesdale Vista Point is consistent with the City's Capital Improvement Plan.) The existing Hilfiker parking area is proposed to have a one-room flush toilet facility. The project would not have a significant impact on the wastewater system capacity.

The proposed multi-use trail between Truesdale and Hilfiker will parallel and then cross the wastewater transmission line that is below the surface approximately three feet. Construction activities will be planned around the clear delineation of this infrastructure to assure there are no impacts to the transmission line (will pothole to verify depth).

New LID drainage techniques are included for improvements to Truesdale Street, including development of the vista point parking area.

The Humboldt Bay Municipal Water District currently supplies approximately 40 MGD, but is capable of providing up to 75 MGD. With ample supply available, the project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The solid waste provider is the Humboldt Waste Management Authority (HWMA). The HWMA has formulated a joint powers agreement with the County and the most of the incorporated Cities within the County for the disposal of waste. The HWMA has contracted with ECDC Environmental to ship solid waste produced in the County to State licensed land fills located outside of Humboldt County. Currently solid waste is trucked to Anderson, California And Medford, Oregon to a triple lined State licensed landfill.

Based on the above Staff concludes that the project will not result in any significant adverse impacts to utilities and service systems.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).				X
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				X

DISCUSSION: The project's impacts will not add appreciably to any existing or foreseeable future significant cumulative impact, such as species endangerment, wetland loss, or air quality degradation. Incremental impacts, if any, will be negligible and undetectable. No growth-related cumulative impacts are peculiar to this proposed project. This project is not contingent on or otherwise related to the development of additional facilities or any other project. The project fosters in-fill development dependent on existing infrastructure. As discussed herein, the project will have no increased impact on fish or wildlife, will not add to any cumulatively considerable impacts, and no mitigation measures are recommended to reduce the potential impacts to human beings, either directly or indirectly, to a level that is considered less than significant.

EARLIER ANALYSES

Earlier Analyses Used.

b) **Impacts Adequately Addressed**. The following effects from the above checklist were within the scope of and adequately analyzed in the document(s) listed above, pursuant to applicable legal standards.
N/A

c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Incorporated," the following are mitigation measures that were incorporated or refined from the document(s) described above.
N/A

SOURCE/REFERENCE LIST: The following documents were used in the preparation of this Initial Study. The documents are available for review at the Community Development Department, 3rd floor, City Hall, during regular business hours.

a) Eureka Municipal Code
b) Adopted Eureka General Plan and Certified Local Coastal Plan, as applicable
c) Project File(s) for the project for which this Initial Study was prepared.

Elk River Trail MND

The Cultural Resources Survey has been withheld for confidentiality reasons.

Biological Assessment

Elk River Wildlife Trail Improvement Project

Prepared for:

City of Eureka

SHN Consulting Engineers & Geologists, Inc.
812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

January 2007
006107

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 •shninfo@shn-engr.com

Reference: 006107

January 30, 2007

Mr. Gary Bird
City of Eureka
531 K Street
Eureka, CA 95501-1146

Subject: Biological Resources Assessment and Wetland Delineation for the Elk River Wildlife Trail Improvement Project

Dear Mr. Bird:

Enclosed is the SHN Consulting Engineers & Geologists, Inc. (SHN) biological assessment for the Elk River Wildlife Trail Improvement Project; SHN's wetland delineation report is included as Attachment 1. During 2006, I conducted focused botanical surveys and SHN's wildlife biologist Michael van Hattem conducted wildlife surveys within the Elk River Wildlife Trail Improvement Project study area. The study area extends from approximately the Truesdale Vista Point south to the existing Elk River Wildlife Trail located at the northern boundary of the Eureka wastewater treatment plant.

In summary, one special status plant species, Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) was detected within the study area. Four occurrences of Point Reyes bird's-beak were found in salt marsh habitat in the western portion of the study area. Three special status wildlife species were observed in the study area: Osprey, Brown Pelican, and Double- crested Cormorant. The proposed project is not expected to result in any impacts to these three species or any other special status wildlife species that have suitable habitat in the project area including the Western Snowy Plover. Of the approximately 29-acre study area, approximately 8.12 acres were delineated as wetlands and approximately 0.35 acre of the study area was identified as environmentally sensitive habitat areas. Please see the enclosed report for recommendations to avoid impacts to environmentally sensitive resources, potential trail routes that optimize the viewing of natural resources, and areas where restoration would enhance the natural resources with the trail improvement project.

It has been a pleasure to work with you and the City of Eureka on this project. We look forward to the next phases of the project with the hope that SHN can provide additional biological and ecological coordination on the project.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Aimee C. Weber

Aimee C. Weber, CAE
Project Botanist and Project Manager

ACW:lms
Attachment: Biological Resources Assessment and Wetland Delineation

G:\2006\006107 Elk River Wildlife Trail\ltr\bio assessment-cover ltr.doc

Reference: 006107

Biological Assessment

Elk River Wildlife Trail Improvement Project

Prepared for:

City of Eureka

Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

January 2007

QA/QC:FLC___

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Acronyms and Abbreviations

BIOS	Biogeographical Information and Observation System
BLM	Bureau of Land Management
DFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CSU	California State University
ERWT	Elk River Wildlife Trail
ERWTIP	Elk River Wildlife Trail Improvement Project
ESHA	Environmentally Sensitive Habitat Areas
EWWTP	Eureka Wastewater Treatment Plant
FC	Federal Candidate.
FE	Federally listed Endangered
FT	Federally listed Threatened
HSU	Humboldt State University
MHWM	Mean High Water Mark
MSL	Mean Sea Level
N/A	Not Applicable
NCP	North Crowley Property located immediately north of Hilfiker Road
NR	No Reference
NWI	National Wetland Inventory
SCP	South Crowley Property located immediately south and east of Hilfiker Road.
SE	State listed Endangered
SHN	SHN Consulting Engineers & Geologists, Inc.
SONCC	Southern Oregon Northern California Coast
SSC	Species of Special Concern a
ST	State listed Threatened
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

On July 7, 10, 31, August 1, 2, November 29 and 30, and December 19, 2006, SHN Consulting Engineers & Geologists, Inc. (SHN) conducted fieldwork at the proposed Elk River Wildlife Trail Improvement Project (ERWTIP) located in the west ½ of Section 33, Township 5 North, Range 1 West Humboldt Base Meridian (Figure 1). The fieldwork consisted of botanical and wildlife assessments, focused surveys for special status species[1], and a wetland delineation.

2.0 Environmental Setting

2.1 Climate and Project Location

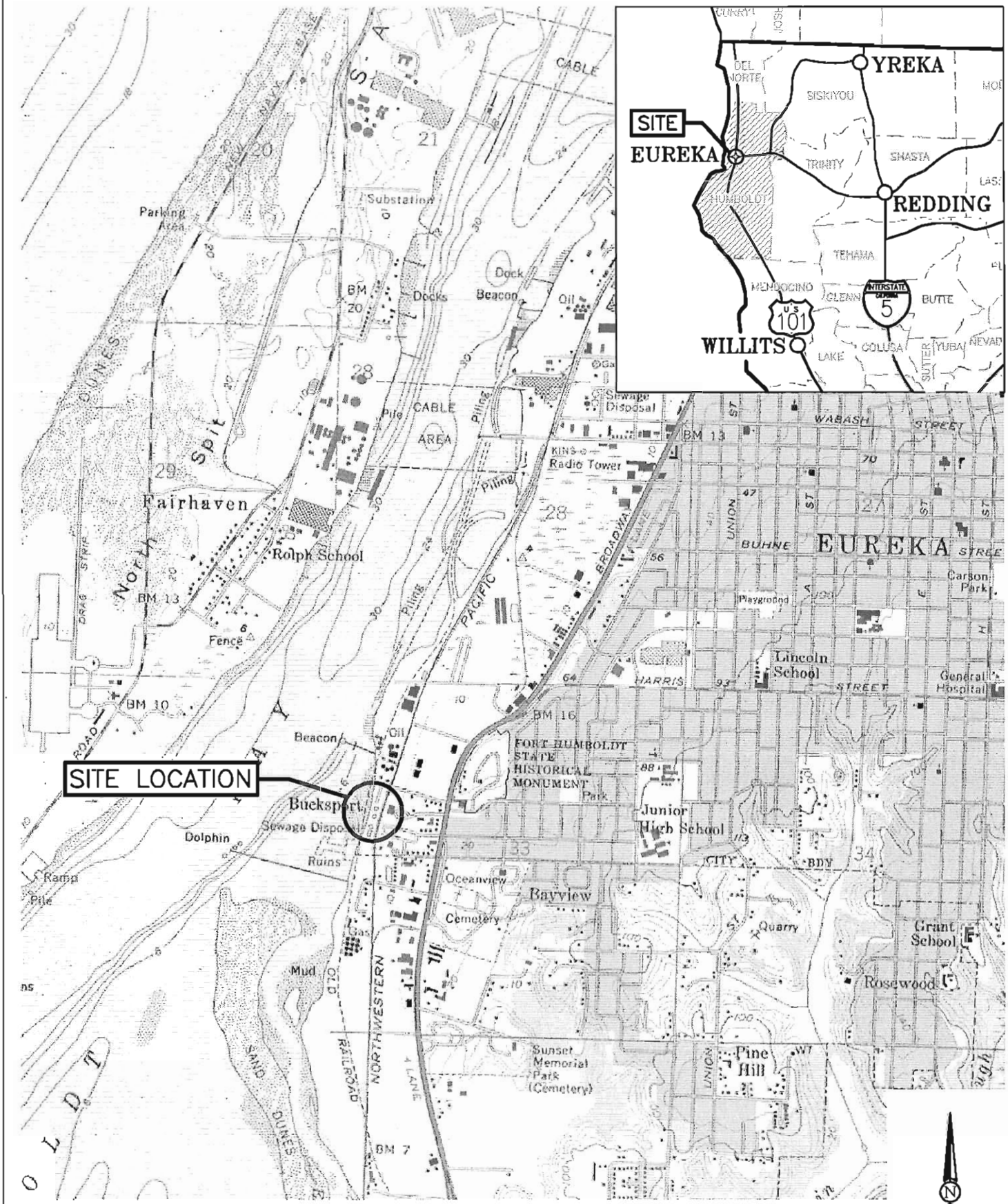
The environmental setting within the City of Eureka is predominately affected by the mild maritime climate, active tectonic processes that are manifested in the geomorphic landscape, and current and historical development. Influence from these factors is evident in the variety of habitat types found throughout the City, which include freshwater wetlands, salt marshes, deepwater channels, intertidal areas, and North Coast coniferous forest.

The study area is located on undeveloped land in the southwest portion of Eureka. The study area extends from approximately the Truesdale Vista Point to the existing Elk River Wildlife Trail (ERWT; Figure 2) located at the northern boundary of the Eureka Wastewater Treatment Plant (EWWTP). The study area is bordered to the north by industrial and residential property, railroad tracks and industrial/retail businesses to the east, the EWWTP to the south, and the Elk River Estuary to the west. For organizational purposes, portions of the study area will be referred to as: 1) the northern industrial yard, 2) the northern Crowley property, 3) the southern Crowley property, 4) the parking and landscaping area, and 5) estuarine habitat (Figure 2).

2.2 Study Area Habitats

Habitats within the project area consist of uplands and wetlands, with several corresponding vegetation communities in each. Upland communities include disturbed, upland forest, and foredune/dunemat. Wetland communities consist of Estuarine intertidal irregularly exposed wetland (salt marsh), Estuarine intertidal regularly exposed, Palustrine forested wetland, Palustrine emergent wetland, and Palustrine scrub-shrub. The wetland community names are consistent with National Wetland Inventory (NWI) classification system. Additional information regarding wetlands within the study area is provided in SHN's Wetland Delineation in (Appendix A). Appendix B presents a list of all plant species encountered at the site. Botanical nomenclature follows the *Jepson Manual Higher Plants of California* (Hickman, 1993). A list of wildlife species observed within and adjacent to the study area is included in Table 3 in section 5.2 of this report.

[1] **Special Status Species.** This term is used collectively to refer to species that are state or federally listed, federal species of concern, species that are state candidates for listing, and all species listed by the California Natural Diversity Database. This term is consistent with the biological resources that are assessed pursuant to the California Environmental Quality Act (CEQA).



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Eureka, California	Site Location Map Biological Resources Assessment SHN 006107
	January 2007	006107-LOCATION	Figure 1

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CONSULTING ENGINEERS & GEOLOGISTS, INC.
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NO.	DATE	REVISION	BY

DSGN
DR CN/CMR
CHK
APVD

CITY OF EUREKA
ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT
EUREKA, CALIFORNIA

BIOLOGICAL RESOURCES ASSESSMENT STUDY AREA

SHEET 2 OF 3
DATE 1/2007
PROJ. NO. 006107

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2.2.1 Upland Habitat

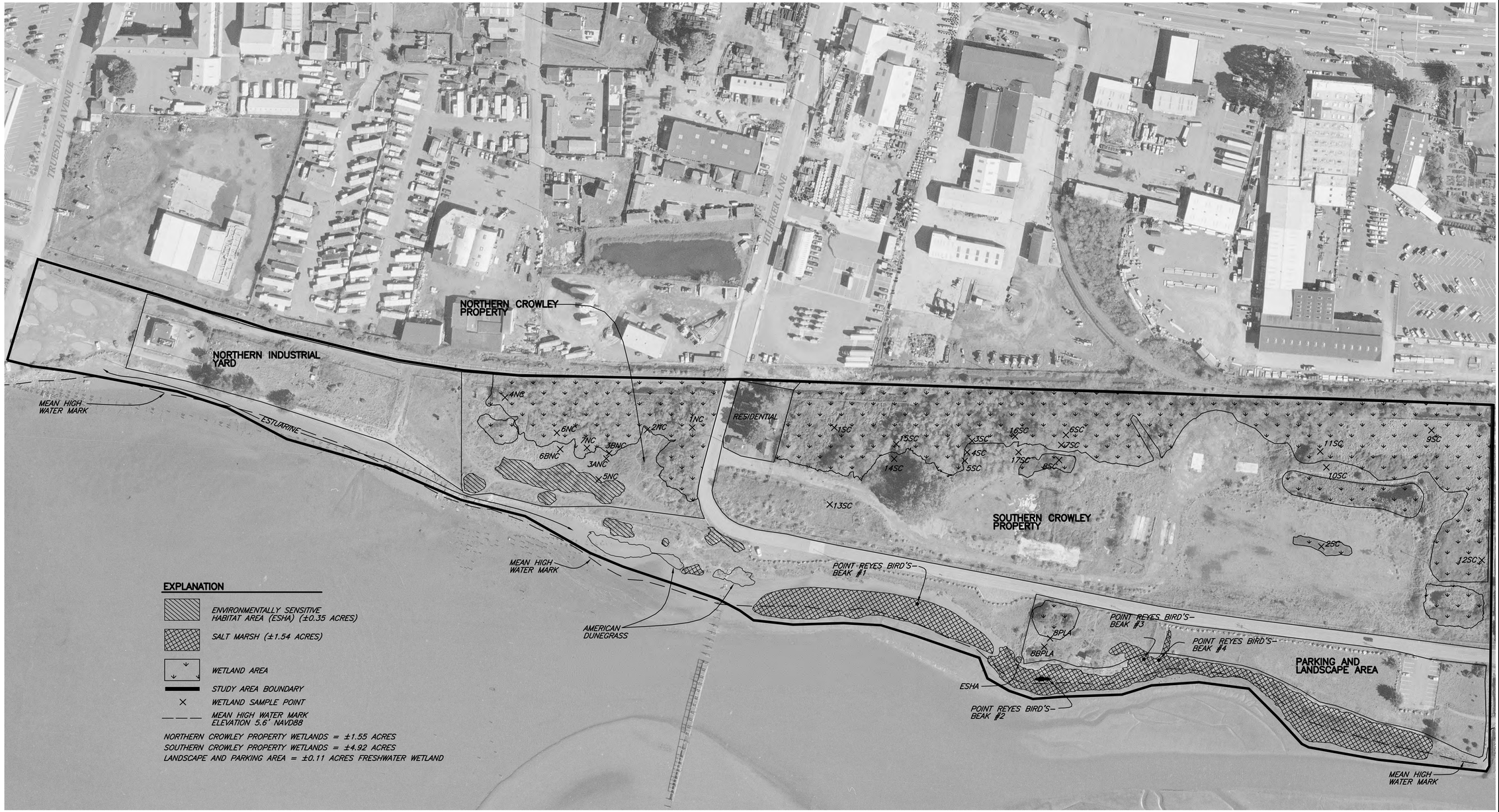
2.2.1.1 Disturbed

Disturbed habitat is scattered throughout the project area, with most of the contiguous portions located several feet above the Mean High Water Mark (MHWM) from the northern industrial yard to the western portion of the southern Crowley property (Figure 3). Some portions of the disturbed upland habitat include former parking areas, building pads, miscellaneous construction material and debris, dilapidated fencing, human encampments and associated debris, driveways and other areas on which gravel fill was placed in the past. Soils within other disturbed areas are sandy (either native or imported fill) and have generally been heavily compacted and are mixed with unsorted rocks, rubble, and other construction debris. Dominant shrubs within the disturbed habitat consist of coyote bush (*Baccharis pilularis*), Himalaya berry (*Rubus discolor*), and Scotch broom (*Cytisus scoparius*) with scattered yellow bush lupine (*Lupinus arboreus*). Although pampas grass (*Cortaderia jubata*) and fennel (*Foeniculum vulgare*) are herbaceous species, they function as the dominant shrubs in the disturbed upland habitat because they do not die back, instead forming dense thickets that provide a canopy over the majority of the herbaceous species. The herbaceous layer is dominated by non-native ruderal species that include hairy cat's ear (*Hypochaeris radicata*), English plantain (*Plantago lanceolata*), sweet white clover (*Melilotus alba*), Queen Anne's lace (*Daucus carota*), periwinkle (*Vinca major*), wild radish (*Raphanus sativus*), sweet vernal grass (*Anthoxanthum odoratum*), rattlesnake grass (*Briza maxima*), mustards (*Brassica* spp.), and St. John's wort (*Hypericum perforatum*). Areas with un-compacted sandy soils are dominated with European beachgrass (*Ammophila arenaria*). Isolated patches of willows (*Salix* spp.) are scattered throughout the disturbed habitat, likely where there is concentrated surface drainage in exposed sandy soils. These willow thickets were not delineated as jurisdictional wetlands due to a lack of hydric soil and hydrology indicators. Appendix A presents a more thorough discussion of the willow thickets that were delineated as Environmentally Sensitive Habitat Areas (ESHAs).

A small section of the habitat located in the parking and landscaping area is a mix of disturbed habitat and coastal prairie vegetation. This area is considered degraded coastal prairie habitat and is dominated by bent grass (*Agrostis* sp.), yarrow, common velvet grass, sweet vernal grass (*Holcus lanatus*), California aster (*Aster chilensis*), strawberry (*Fragaria vesca*), and scattered tufted hair-grass (*Deschampsia cespitosa*).

2.2.1.2 Foredune/Dunemat

Vegetation that is characterized as foredune/dunemat is located along the upper margins of Humboldt Bay, east of the estuarine habitat, in more uniformly sandy soils that lack the significant fill materials found in the disturbed habitat. This herbaceous vegetation community is a disturbed form of the sensitive Northern Foredune Grassland community. Dominant species include sandmat (*Cardionema ramosissimum*), European beachgrass, salt rush (*Juncus leseurii*), sweet vernal grass, and sheep sorrel (*Rumex acetosella*), with lesser amounts of beach knotweed (*Polygonum paronychia*), gumweed (*Grindelia stricta*), beach morning glory (*Calystegia soldanella*), hairy cat's ear, and wild radish. Clusters of fennel and pampas grass are scattered throughout the foredune/dunemat habitat.



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ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT
EUREKA, CALIFORNIA

BIOLOGICAL RESOURCES ASSESSMENT

SHEET 3 OF 3
DATE 1/2007
PROJ. NO. 006107

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Some portions of the study area that are characterized as foredune/dunemat have a slightly different species composition. Dominant species in those areas, which tend to be located closer to the margin of Humboldt Bay and in the southern portion of the study area, include sea rocket (*Cakile maritima*), dune tansy (*Tanacetum camphoratum*), silver burweed (*Ambrosia chamissonis*), beach morning-glory (*Calystegia soldanella*), dune goldenrod (*Solidago spathulata*), beach buckwheat (*Eriogonum latifolium*), European beachgrass, and scattered American dunegrass (*Leymus mollis*). Habitat along the western boundary of the foredune/dunemat habitat is typically Estuarine intertidal emergent wetland. Two substantial clusters of native American dunegrass are located west of Hilfiker Lane. These stands are of particular note due to the nearly intact native species composition.

2.2.1.3 Upland Forest

The upland forest habitat is associated with a stand of blue gum Eucalyptus trees (*Eucalyptus globulus*) located on the southern Crowley Property, just east of the fire fighting training facility. A small component of upland forest that is dominated by knobcone pine (*Pinus attenuata*) that was planted some time ago is located in the northern industrial yard. The understory vegetation in the upland forest is transitional between upland and wetland, and includes both upland and wetland species such as Pacific bramble (*Rubus ursinus*), Himalaya berry, sweet vernal grass, common velvet grass, Eucalyptus seedlings, holly (*Ilex aquifolium*), and English ivy (*Hedera helix*). Due to the mixed nature of the vegetation, and absence of hydric soil features and wetland hydrology, this habitat was classified as upland (Figure 3). Vegetation transitions to Palustrine shrub-scrub east of the upland forest on the southern Crowley property.

2.2.2 Wetlands

2.2.2.1 Estuarine Wetland

Estuarine intertidal irregularly exposed wetland habitat occupies a narrow band along the waterfront boundary of the study area, below and above the MHWM where there is frequent tidal inundation. The estuarine habitat extends the entire length of the study area from the parking lot at Truesdale Avenue to the existing Elk River Wildlife Trail and contains mostly intact mud flat and salt marsh habitat. Evidence of relict industry includes the former fuel line trestle and other miscellaneous pilings within the estuarine portion of the study area. Appendix A presents a more detailed discussion of the estuarine wetlands and the NWI classifications.

The estuarine habitat is comprised entirely of herbaceous vegetation that is interspersed with patches of intertidal mudflat scattered with brown and green algae. Pockets of this habitat have a fairly intact native species composition but the majority is dominated by substantial mono-stands of the non-native dense-flowered cordgrass (*Spartina densiflora*). Based on the salinity ranges throughout the intertidal emergent wetland, other dominant species include pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), sandspurry (*Spergularia macrotheca*), dodder (*Cuscuta salina*), spearscale (*Atriplex triangularis*), and spear oracle (A. *patula*) with lesser amounts of salt rush, gumweed, fleshy jaumea (*Jaumea carnosa*), and tufted hairgrass. The species composition transitions to a combination of the foredune/dunemat vegetation and Estuarine intertidal irregularly exposed wetland vegetation several feet above the MHWM. This wetland habitat is suitable habitat for a number of special status plant species, which is discussed in section 4.1 of this report.

2.2.2.2 Palustrine Emergent Wetland

Palustrine emergent wetland habitat is inundated either seasonally, periodically, semipermanently, or permanently by freshwater and is for the most part dominated with herbaceous hydrophytes. This habitat type is generally located within the eastern portion of the study area on the northern and southern Crowley properties. This densely vegetated habitat type is dominated by northern willow herb (*Epilobium ciliatum*), silverweed (*Potentilla anserina*), Pacific bramble, creeping buttercup (*Ranunculus repens*), slough sedge (*Carex obnupta*), small fruited bulrush (*Scirpus microcarpus*), lady fern (*Athyrium filix-femina*), nut sedge (*Cyperus eragrostis*), creeping bent-grass (*Agrostis stolonifera*), velvet grass, and rushes (*Juncus effuses* and *J. balticus*). Portions of the Palustrine emergent wetland habitat that have not been significantly disturbed from past land use activities, human encampments, or have had an adequate amount of time to recover from previous disturbances, exhibit a 1-2 inch organic layer on top of gleyed or low chroma soil. If mottles are present, they are abundant and prominent. Both primary and secondary hydrology indicators were found throughout this wetland habitat (Appendix A).

A tidally influenced drainage ditch is located along the eastern boundary of the northern and southern Crowley properties. The ditch originates at the Elk River Estuary, passes under Hilfiker Lane, borders the eastern edge of the southern Crowley property, and extends north along the railroad tracks before passing under Hilfiker Lane again. The ditch daylights at the southeast side of the northern Crowley property and terminates near the northern end of that property. Vegetation within and along the ditch includes a mix of freshwater and brackish tolerant hydrophytes. Dominant species include silverweed, spearscale, common rush, pickleweed, brass-buttons (*Cotula coronopifolia*), and dense-flowered cordgrass, with scattered seaside arrow grass (*Trigolchin maritima*).

2.2.2.3 Palustrine Scrub-Shrub Wetland

Freshwater wetland habitat that has a substantial shrub component is characterized as Palustrine scrub-shrub. The patchy to moderately closed overstory is dominated by willows (*Salix sitchensis*, *S. lucida*, and *S. lasiolepis*), California wax myrtle (*Myrica californica*), and cascara (*Rhamnus purshiana*), with scattered red alder (*Alnus rubra*). The dense understory consists of both shrub and herbaceous species including willows, Himalaya berry, Pacific bramble, slough sedge, silverweed, creeping bent-grass, common rush, and creeping buttercup with lesser amounts of sword fern (*Polystichum munitum*), lady fern, and northern willow herb. Palustrine scrub-shrub vegetation is scattered throughout the study area with the largest areas occurring in the eastern portion of the northern and southern Crowley properties. The scrub-shrub habitat in the northern Crowley property has been significantly impacted by human encampments and associated debris.

2.2.2.4 Palustrine Forested Wetland

A small stand of Palustrine forested wetland is located on the southern Crowley property between upland habitat and the drainage ditch located along the eastern boundary. The Palustrine forested wetland tends to range one to three feet higher than the ditch and appears to flood in the winter. This habitat is characterized by a pure stand of tall red alder, and an open park-like understory dominated by slough sedge, Pacific bramble, creeping buttercup, common horsetail, and native and non-native grass species. The Palustrine forested wetland transitions with scrub-shrub habitat at the northern and southern extents of it.

3.0 Special Status Species Analysis

Prior to conducting fieldwork, a California Natural Diversity Database (CNDDB, 2006) Rare Find and Biogeographical Information and Observation System (BIOS, 2006) search was completed for the 7.5-minute U.S. Geological Survey (USGS) Eureka quadrangle and all adjacent quadrangles (Table 1). The databases were queried for historical and existing occurrences of state and federally listed Threatened, Endangered, and Candidate species; species proposed for listing; special status species; and species listed by the California Native Plant Society (CNPS; Tibor, 2001).

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Plant Species				
Abronia umbellata ssp. *breviflora*	pink sand-verbena	1B	Coastal dunes below 50 feet above Mean Sea Level (MSL); blooms June-October.	Yes
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B	Mesic coastal dunes, coastal salt marshes and swamps below 100 feet above MSL; blooms April-October.	Yes
Carex arcta	northern clustered sedge	2	Mesic sites in North Coast coniferous forests, and bogs and fens between approximately 195 and 4,600 feet above MSL; blooms June-August.	No
Carex leptalea	flaccid sedge	2	Bogs and fens, meadows and seeps, marshes and swamps from sea level to 2,300 feet above MSL; blooms May-August.	Yes
Carex lyngbyei	Lyngbye's sedge	2	Brackish or freshwater marshes and swamps below 35 feet above MSL; blooms May-August.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Carex praticola	meadow sedge	2	Mesic meadows and seeps in North Coast coniferous forests from sea level to 10,500 feet above MSL; blooms May-July.	Yes
Castilleja affinis ssp. *litoralis*	Oregon coast Indian paintbrush	2	Coastal bluff scrub, sandy coastal scrub, and dunes from 50-330 feet above MSL; blooms in June.	Yes
Castilleja ambigua ssp. *humboltiensis*	Humboldt Bay owl's clover	1B	Coastal salt marsh and swamps up to 10 feet above MSL; blooms April-August.	Yes
Cordylanthus maritimus ssp. *palustris*	Point Reyes bird's-beak	1B	Coastal salt marsh and swamps up to 30 feet above MSL; blooms June-October.	Yes
Erysimum menziesii ssp. *eurekense*	Humboldt Bay wallflower	1B/FE/SE	Coastal dunes up to 30 feet above MSL; blooms March-April.	Yes
Erythronium revolutum	coast fawn lily	2	Bogs and fens, mesic areas in broadleaved forests and North Coast coniferous forest, and streambanks up to 3,500 feet above MSL; blooms March-June	No
Fissidens pauperculus	minute pocket-moss	1B	Grows on damp soil along the coast in North Coast coniferous forest from 30-330 feet above MSL.	No
Gilia capitata ssp. *pacifica*	Pacific gilia	1B	Various including coastal bluff scrub and coastal prairie generally below 1,000 feet above MSL; blooms May-August.	Yes
Gilia millefoliata	dark-eyed gilia	1B	Coastal dunes up to 65 feet above MSL; blooms April-July.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	2	Coastal bluff scrub and coastal dunes up to 700 feet above MSL; blooms March-June.	Yes
Lathyrus japonicus	sand pea	2	Coastal dunes up to 100 feet above MSL; flowers May-August.	Yes
Lathyrus palustris	marsh pea	2	Bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, North Coast coniferous forest/mesic up to 330 feet above MSL; blooms March-August.	Yes
Layia carnosa	beach layia	1B/FE/SE	Coastal dunes and coastal scrub up to 200 feet above MSL; blooms March-July.	Yes
Lilium occidentale	western lily	1B/FE/SE	Coastal bluff scrub, coastal prairies, openings in North Coast coniferous forests including edges of freshwater marshes and swamps up to 600 feet above MSL; blooms June-July.	Yes
Lycopodium clavatum	running pine	2	Typically on mesic substrate in redwood and mixed conifer forest including woody debris, old roads, and marshes and swamps from 200-2,600 feet above MSL. Identifiable year round; fertile July-August.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Mitella caulescens	leafy-stemmed mitrewort	2	Mesic sites in broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest, and meadows and seeps from 2,000-5,600 feet, above MSL; blooms May-July.	No
Monotropa uniflora	Indian pipe	2	North Coast coniferous forest and broadleaved upland forest from 30-650 feet above MSL; blooms June-July.	No
Montia howellii	Howell's montia	2	Vernally wet, open sites in North Coast coniferous forests including meadows and seeps/often in disturbed areas (e.g. roadsides); blooms in March-May.	No
Puccinellia pumila	dwarf alkali grass	2	Coastal salt marshes and swamps up to 30 feet above MSL; blooms in July.	Yes
Sidalcea malachroides	maple-leaved checkerbloom	1B	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest/ often in disturbed areas (e.g., roadsides) up to 2,300 feet above MSL; blooms April-August.	No
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	1B	Openings in North Coast coniferous forest and coastal prairie from 50-2,300 feet above MSL; blooms May-June.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Sidalcea oregana ssp. *eximia*	coast checkerbloom	1B	Openings in lower montane and North Coast coniferous forests, meadows and seeps, and coastal prairie from 15-4,400 feet above MSL; blooms June-August.	Yes
Spergularia canadensis var. *occidentalis*	western sand spurrey	2	Coastal salt marshes and swamps up to 10 feet above MSL; blooms June-August.	Yes
Usnea longissima	long-beard lichen/ Methuselah's beard	N/A	North Coast coniferous forests. Host trees include Douglas fir, redwood, big-leaf maple, oak, and California bay trees. Identifiable year round.	No
Viola palustris	marsh violet	2	Mesic coastal scrub and coastal bogs and fens up to 500 feet above MSL; blooms March-August.	Yes
Wildlife Species				
Accipiter cooperii	Cooper's Hawk	SSC	Non-breeding habitat preference highly variable from closed forests to urban interface. Nesting locations tend to be dense mixed-forests but can also be urban.	Yes
Accipiter striatus	Sharp-Shinned Hawk	SSC	Non-breeding habitat preference highly variable from closed forests to urban interface. Nesting locations tend to be dense mixed-forests but can also be urban.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Arborimus albipes	white-footed vole	SSC	Mature coastal forests with dense alder and shrubs, from the Mad River in Humboldt County north.	No
Arborimus pomo	red tree vole	SSC	Mature and immature North Coast coniferous forest; build nests within the living portion of the canopy.	No
Ardea alba	Great Egret	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Ardea herodias	Great Blue Heron	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Ascaphus truei	western tailed frog	SSC	Sea level to near timberline in cold fast flowing perennial streams in forested areas.	No
Charadrius alexandrinus nivosus	Western Snowy Plover	FT	Sparsely vegetated beaches, along coastal strip, also inland; ground nester and gregarious in non-breeding season.	Yes
Egretta thula	Snowy Egret	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Emys marmorata marmorata	northwestern pond turtle	SSC	Aquatic habitat with some slow water component, basking sites are important, with suitable upland nesting sites within a few hundred meters of aquatic habitat.	Yes
Eucyclogobius newberryi	tidewater goby	FE/SSC	Brackish water habitats along the California coast from San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, where water is fairly still but not stagnant water with high oxygen levels.	Yes
Haliaeetus leucocephalus	Bald Eagle	FT/SE	This species is generally found along ocean shores, lake margins, and rivers. Nests in large, old growth, or live trees with open branches, especially ponderosa pine, within 1 mile of water source. Species roosts communally in winter.	Yes
Martes americana humboldtensis	Humboldt marten	SSC	Mature North Coast coniferous forests.	No
Martes pennanti pacifica	Pacific fisher	FC/SSC	Coniferous forests with old-growth forest components.	No
Myotis evotis	long-eared myotis	N/A	All brushy, woodland, and forest habitats from sea level to approximately 9,000 feet.	No

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Nycticorax nycticorax	Black-crowned Night Heron	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Oncorhynchus clarii clarki	coast cutthroat trout	SSC	Spawns in small coastal tributary streams, and utilizes slow flowing backwater areas, low velocity pools, and side channels for rearing of young. Prefers good forest canopy cover, in-stream woody debris, from the Eel River north to the Oregon border.	Yes
Oncorhynchus kisutch	southern Oregon Northern California coast (SONCC) Coho salmon	FT/ST	Freshwater, nearshore and offshore environments throughout their lifecycles. Coho prefer low stream velocity, shallow water, and small gravel. Spawning and rearing habitat mainly in low gradient tributaries and side channels of river systems. Require beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water, and sufficient dissolved oxygen.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Oncorhynchus mykiss irideus	northern California steelhead	FT/SE	Coastal basins from Redwood Creek south to the Gualala River. Spawning and rearing habitat mainly in low-medium gradient tributaries, side channels, and mainstem of river systems.	Yes
Pandion haliaetus	Osprey	N/A	Primarily along rivers, lakes, bay, and seacoasts. Nests in dead snags, living trees, utility poles, etc. usually near or above water.	Yes
Pelecanus occidentalis	Brown Pelican	FE	Near-shore waters along coast; nests on islands in central and south America.	Yes
Phalacrocorax auritus	Double-crested Cormorant	SSC	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Yes
Plethodon elongates	Del Norte salamander	SSC	Rock talus in coniferous forest and under woody debris from sea level to 4,000 feet.	No
Rallus longirostris obsoletus	California Clapper Rail	FE/SE	Exclusively found in tidal salt marshes; thought to be extirpated from Humboldt County.	Yes
Rana aurora aurora	northern red-legged frog	SSC	North Coast coniferous forest; breeds in ponds and slow moving backwater in creeks.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present
Rana boylii	foothills yellow-legged frog	SSC	Shallow, shaded perennial streams with some open canopy; breeds in stream margins.	No
Rhyacotriton variegatus	southern torrent salamander	SSC	North Coast coniferous forest at edges of turbulent, shaded, clear streams.	No
Natural Communities				
Coastal terrace prairie				
Northern coastal salt marsh				
Northern foredune grassland				
Sitka spruce forest				

1. CNPS list 1B includes plants that are rare, threatened, or endangered in California and elsewhere. CNPS List 2 includes plants that are rare, threatened, or endangered in California but more common elsewhere.
   FE: Federally listed Endangered, pursuant to the Endangered Species Act of 1973, as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
   FT: Federally listed Threatened, pursuant to the Endangered Species Act of 1973, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.
   FC: Federal Candidate. This designation includes taxa that require additional information to propose for listing pursuant to the Endangered Species Act of 1973, as amended.
   SE: State listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range
   ST: State listed Threatened, pursuant to California Endangered Species Act (CESA). ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.
   DFG: California Department of Fish and Game
   SSC: Species of Special Concern are species that the DFG consider of conservation concern. These species must be considered pursuant to CEQA.
   N/A: Not Applicable; species is considered to be sensitive for other reasons such as colonial nesting or that the species is rare or uncommon. While no formal conservation status is afforded, the CNDDB still tracks the presence of these species and they must be considered.
2. Plant habitat descriptions are from CNDDB (August 2006), Tibor (2001), and Hickman (1993)

4.0 Species Descriptions and Habitat Suitability

4.1 Special Status Plant Species

Based on the 30 species reported by the CNDDB, the range of habitats present at the project site, and the geographical range of the various special status species, a list of species that are considered potentially likely to occur in the study area was developed, as described below. Refer to section 5.1 for the results of the focused botanical survey and a list of special status species that were detected in the study area. Focused botanical surveys were conducted on July 7, 10, and 31 and August 1 and 2, 2006.

4.2 Plant Species Descriptions

Pink sand verbena (*Abronia umbellata* ssp. *breviflora*) is an annual herb in the Nyctanginaceae Family that may live up to two years (BLM, March 2005). Pink sand verbena occurs in coastal beach and dune habitat, from sea level to approximately 30 feet above Mean Sea Level (MSL) (Tibor, 2001). This species occurs in foredunes and interdunes with minimal vegetation cover; it is often the closest plant species to the water (CNDDB, 2006). This species blooms June through October (Tibor, 2001). Associated species include sea rocket, burweed, European beachgrass, beach silvertop, and yellow sand verbena ((*Abronia latifolia*). Habitat within the project area for pink sand verbena includes the foredune/dunemat association and scattered patches within the disturbed habitat that intergrades with foredune/dunemat.

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) is a perennial herb in the Fabaceae Family that blooms April through October. According to the CNDDB, this species has been extirpated from Humboldt County (CNDDB, 2006). Coastal marsh milk-vetch occurs in mesic dunes and along streams or coastal salt marshes below 100 feet in elevation (Tibor, 2001). Suitable habitat within the project area for this special status species is scattered throughout the Estuarine intertidal wetlands and along the margins of the drainage ditch within the eastern portion of the study area. Due to the lack of a of higher elevation salt marsh with a diverse species assemblage, habitat within the project area is only considered moderately suitable for coastal marsh milk-vetch.

Flaccid sedge (*Carex leptalea*) and **meadow sedge** (*Carex praticola*) are perennials in the Cyperaceae Family. Flaccid sedge blooms May through August; meadow sedge blooms May through July. Suitable habitat for flaccid sedge and meadow sedge includes bogs and fens, mesic meadows, and marshes and swamps typically within North Coast coniferous forest that are variable in elevation (Tibor, 2001). Suitable habitat within the project area includes the Palustrine emergent wetland, specifically in the southern end of the south Crowley property where there is an abundance of herbaceous vegetation. Although these species can occur at or near sea level, habitat within the project area is only considered marginally suitable due to the vicinity of Humboldt Bay and the lack of known occurrences immediately surrounding the Bay.

Lyngbye's sedge (*Carex lyngbyei*) is a perennial in the Cyperaceae Family that blooms May through August (Tibor, 2001). This species occurs in brackish freshwater marshes or swamps (CNDDB, 2006). Suitable habitat for Lyngbye's sedge is scattered throughout the project area and includes

the Palustrine emergent wetland habitat and along the margins of the drainage ditch located in the eastern portion of the study area. Habitat along the brackish drainage ditch is considered highly suitable for this species.

Oregon coast Indian paintbrush (*Castilleja affinis* ssp. *litoralis*) is a perennial in the Scrophulariaceae Family. This species occurs in coastal bluff scrub, coastal dunes, and sandy substrate in coastal scrub that ranges from 50 to 330 feet above MSL (CNDDB, 2006). This special status species blooms in June (Tibor, 2001). Suitable habitat for Oregon coast Indian paintbrush does not occur within the project area but moderately suitable habitat is located south of the project area in the dunes along the Elk River Spit.

Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboltiensis*) is a hemiparasitic annual herb in the Scrophulariaceae Family. This species occurs in salt marshes that range from sea level to approximately 10 feet above MSL around Humboldt Bay and Point Reyes in Marin County (Tibor, 2001). Humboldt Bay owl's clover blooms April through August (Tibor, 2001). Suitable moderate to high quality habitat for this special status species is scattered throughout the salt marsh habitat. Portions of the salt marsh habitat that have an intact native species composition and lack or have minor components of dense-flowered cordgrass are most suitable for Humboldt Bay owl's clover.

Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) is an annual facultative hemiparasitic herb (Eicher, 1987) in the Scrophulariaceae Family. This species occurs in salt marsh habitat that ranges from sea level to 33 feet in elevation; this species blooms June through August (Tibor, 2001). Point Reyes bird's-beak was once rather common in suitable salt marsh habitat but the numbers of occurrences have been greatly reduced by development. Other threats include foot traffic, non-native plants, hydrological alterations, cattle grazing, and trampling (Tibor, 2001). Suitable moderate to high quality habitat for Point Reyes bird's-beak is scattered throughout the salt marsh habitat in the project area, which is identical to suitable habitat for Humboldt Bay owl's clover.

Humboldt Bay wallflower (*Erysimum menziesii* ssp. *eurekense*) is a perennial herb in the Brassicaceae Family. This species is endemic to Humboldt Bay and is known from only six occurrences around the Bay (CNDDB, 2006). Humboldt Bay wallflower blooms March through April (Tibor, 2001). Suitable habitat for this state and federally listed species includes coastal dunes up to approximately 30 feet above MSL that are dominated by northern foredune vegetation (CNDDB, 2006). Suitable habitat for this species is restricted to the foredune/dunemat vegetation located south of the study area that has a fairly intact native species composition and lacks significant cover of European beachgrass.

Pacific gilia (*Gilia capitata* ssp. *pacifica*) is an annual herb in the Polemoniaceae Family. Suitable habitat for this special status species is various and includes coastal bluff scrub and coastal prairie (Tibor, 2001). Occurrences of this species have been reported on Pacific Lumber Company (PALCO) property within meadows and roadsides in Douglas fir dominated areas at elevations that range from 1,000 to 2,950 feet above MSL (CNDDB, 2006). Pacific gilia blooms May through August (Tibor, 2001). Suitable habitat within the project area is limited to the degraded coastal prairie habitat located within the parking and landscape area. This habitat is only considered marginally suitable for supporting occurrences of Pacific gilia.

Dark-eyed gilia (*Gilia millefoliata*) is an annual herb in the Polemoniaceae Family that blooms April through July (Tibor, 2001). This species occurs in coastal dunes up to approximately 65 feet above MSL. Suitable habitat within the project area includes the foredune/dunemat association. Habitat is only considered marginally suitable in the northern portion of the study area where there is greater distribution of non-native species; habitat south of the study area, adjacent to the existing EWWTP, is considered higher quality for a potential occurrence of dark-eyed gilia.

Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) is an annual herb in the Asteraceae Family. Suitable habitat for this species includes sandy substrate on coastal bluff scrub and coastal dunes from sea level to approximately 700 feet above MSL (CNDDB, 2006). This annual herb blooms March through June (Tibor, 2001). Suitable habitat within the project area includes the foredune/dunemat association. Habitat is only considered marginally suitable in the northern portion of the study area where there is greater distribution of non-native species; habitat south of the study area, adjacent to the existing EWWTP, is considered higher quality for a potential occurrence of short-leaved evax.

Sand pea (*Lathyrus japonicus*) is a rhizomatous herb in the Fabaceae Family that blooms May through August (Tibor, 2001). This species occurs in coastal dune habitat, from sea level to approximately 100 feet above MSL (CNDDB, 2006). Based on known occurrences in the Crescent City area of California, sand pea is relatively tolerant of disturbance and competition from non-native species. The foredune/dunemat association throughout the study area is considered moderate to high quality habitat for sand pea.

Marsh pea (*Lathyrus palustris*) is a perennial herb in the Fabaceae Family that blooms March through August (Tibor, 2001). This species occurs in a variety of habitats that include bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, and mesic locations in North Coast coniferous forest up to 330 feet above MSL (CNDDB, 2006). Suitable habitat within the project area includes the Palustrine emergent wetland and Palustrine scrub shrub. Portions of the study area that are considered most suitable for supporting an occurrence of marsh pea is the Palustrine emergent wetland on the southern Crowley property that has a predominance of native herbaceous vegetation.

Beach layia (*Layia carnosa*) is an annual herb in the Asteraceae that blooms March through July (Tibor, 2001). Suitable habitat for this state and federally listed species includes coastal dunes and coastal scrub up to 200 feet above MSL (CNDDB, 2006). Suitable habitat within the project area includes the foredune/dunemat association. Habitat is only considered marginally suitable in the northern portion of the study area where there is greater distribution of non-native species; habitat south of the study area, adjacent to the existing EWWTP, is considered higher quality for a potential occurrence of beach layia.

Western lily (*Lilium occidentale*) is an herbaceous perennial in the Liliaceae that grows from a deep, rhizatomous bulb. This state and federally listed species occurs within 4 miles of the coast, generally on marine terraces below 300 feet above MSL (CNDDB, 2006). Western lily is known to occur from early successional fens and coastal scrub habitat in northwestern California to southwest Oregon (Kalt, 2006). Habitats with which this species is associated include coastal bluff scrub, coastal prairie, and openings in coastal coniferous forest (Sitka spruce dominated) including freshwater marshes and swamps (CNDDB, 2006). This species emerges in late March or early April and flowers in late June or July (Imper and Sawyer, 1992). The species grows in soils that are

described as well drained or poorly drained, and have a significant layer of organic topsoil (Imper and Sawyer, 1992). The soil profile also includes an iron or clay confining layer, which serves to perch moisture late in the growing season (Imper, 2003). Suitable habitat within the project area for western lily is limited to the Palustrine emergent wetland and the perimeter of the Palustrine scrub shrub that borders the emergent wetland. This habitat is considered marginal to moderately suitable for supporting an occurrence of western lily.

Running pine (*Lycopodium clavatum*) is a trailing rhizomatous herb in the Lycopodiaceae Family. This spore bearing plant is fertile July through August but is identifiable year round (Tibor, 2001). Running pine occurs in a variety of habitats. Suitable habitat ranges from moist areas in redwood or mixed evergreen forests under moderately open to semi-closed canopy (generally on northern aspects or ridge tops), to drier, more exposed areas at the edge of (or within) old skid and haul roads (SHN, 2001). Suitable habitat also includes marshes and swamps from 200-2,600 feet above MSL (Tibor, 2001). Suitable habitat within the project area is limited to the Palustrine emergent wetland. This habitat is only considered marginally suitable because most running pine occurrences are located at higher elevations and further inland from the coast.

Dwarf alkali grass (*Puccinellia pumila*) is a perennial herb in the Poaceae Family that blooms in July (Tibor, 2001). This species occurs in coastal salt marshes and swamps up to 30 feet above MSL (Tibor, 2001). This species is known from only two occurrences in California with only one historical occurrence reported from the Humboldt Bay area (CNDDB, 2006). Suitable moderate to high quality habitat for this is scattered throughout the salt marsh habitat.

Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) is a perennial in the Malvaceae Family that blooms May to June (Tibor, 2001). This species occurs in openings in North Coast coniferous forest and broadleaved upland forest such as roadsides, grasslands, and meadows and in coastal prairie habitat up to 2,300 feet above MSL (CNDDB, 2006). Suitable habitat within the project area is limited to the degraded coastal prairie habitat located within the parking and landscape area. This habitat is only considered marginally suitable for supporting an occurrence of Siskiyou checkerbloom because of its degraded nature.

Coast checkerbloom (*Sidalcea oregana* ssp. *eximia*) is a perennial in the Malvaceae Family that blooms June to August (Tibor, 2001). This species occurs in openings in lower montane and North Coast coniferous forests and meadows and seeps up to 4,400 feet above MSL (CNDDB, 2006); this species is reported to occur in gravelly soils or native soils that are largely intact (CNDDB, 2006). Both coast checkerbloom and Siskiyou checkerbloom closely resemble each other and their habitats and ranges overlap, which although not specified in the CNDDB or by Tibor (2001), suitable habitat for coast checkerbloom is considered to include coastal bluff and coastal prairie habitats. Suitable habitat within the project area for coast checkerbloom is limited to the degraded coastal prairie habitat located within the parking and landscape area.

Western sand spurrey (*Spergularia canadensis* var. *occidentalis*) is a delicate annual in the Caryophyllaceae Family that blooms June through August (Tibor, 2001). This species is known in California only from Humboldt Bay salt marshes up to 10 feet above MSL (CNDDB, 2006); western sand spurrey is more widespread in Oregon, Washington, and British Columbia (Tibor, 2001). Suitable moderate to high quality habitat is scattered throughout the salt marsh in the project area.

Marsh violet (*Viola palustris*) is perennial (rhizomatous) herb in the Violaceae Family that blooms March through August (Tibor, 2001). This species occurs in mesic coastal scrub and coastal bogs and fens up to 500 feet above MSL; marsh violet is known from only five occurrences in California (CNDDB, 2006). Suitable moderate to high quality habitat for this species includes the Palustrine emergent wetland and Palustrine scrub shrub throughout the project area. A potential occurrence of marsh violet is considered most likely in the Palustrine emergent wetland in the southeast portion of the southern Crowley property where there is a predominance of native herbaceous species.

4.4 Special Status Wildlife Species

Based on the 27 species reported by the CNDDB and BIOS, the range of habitats present at the project site, and the geographical range of the various special status species, a list of species considered potentially likely to occur in the study area was developed, as described below. Refer to section 5.2 of this report for the results of wildlife species detected in the study area.

Cooper's Hawk (*Accipiter cooperii*) and **Sharp-shinned Hawks** (*A. striatus*) are in the Family Accipitridae and are primarily associated with dense forests but can be found in several habitat types including ecotones and urban environments. Passerines (songbirds) are the primary prey of Accipiters and are abundant throughout the project site. Nesting habitat is limited to willow thickets on the northern Crowley property. Other potential nest sites include the knobcone pine trees in the northern industrial yard, and eucalyptus and alder stands on the southern Crowley property. However, these stands lack the structure typical of accipiter nest sites. Human encampments during the breeding season decrease the probability of nesting use by either the Cooper's Hawk or Sharp-shinned Hawk on the northern Crowley property.

Wading birds, including **Great Egrets** (*Ardea alba*), Cattle Egret (*Bubulcus ibis*), **Great Blue Herons** (*A. herodias*), **Snowy Egrets** (*Egretta thula*), **Black-crowned Night Herons** (*Nycticorax nycticorax*) are in the Family Ardeidae. Herons and egrets are primarily associated with shallow wetland and estuarine habitats where they prey upon fish and amphibians. Other important foraging habitat for herons and egrets includes fields and pastures, where they prey upon abundant small mammals. Wading birds congregate in large breeding colonies during the breeding season making them susceptible to failure if disturbed. While no nesting colonies currently exist within the study area, herons and egrets are common along the estuarine habitat of the Elk River Estuary.

Brown Pelican (*Pelecanus occidentalis*) are in the Family Pelecanidae. The Brown Pelican has a large range extending from North America to South America. Brown Pelican diet consists mostly of fish, especially menhaden, mullet, sardines, pinfish and anchovies in U.S. waters (USFWS, 2005b). Brown Pelicans nest on small islands and are colonial; clutch size is typically 3. Stick nests are built on either low vegetation or the ground. Habitat for the Brown Pelican is mostly along the coast and pelicans are rarely seen inland or far out at sea. Brown Pelicans winter along the west coast of the United States including Humboldt Bay and nest in Central and South America. The northern end of the Elk River Spit is an important loafing and preening area and pelicans were commonly observed during field visits. The Elk River Estuary and Humboldt Bay are important feeding areas for the brown pelican. The current project as proposed will not affect the Brown Pelican.

Western Snowy Plover (*Charadrius alexandrinus nivosus*) are in the Family Charadriidae. The Western Snowy Plover is a small shorebird that typically forages on invertebrates above and below the mean high-water line of coastal beaches. The breeding range of the coastal population of the Western Snowy Plover is between southern Washington and Magdalena Bay, Baja Sur Mexico, and is associated with beach habitats, lagoons, salt evaporation ponds (USFWS, 2005), and in Humboldt County, along gravel bars on the lower Eel River (Colwell et al., 2005). Western Snowy Plovers are facultatively polyandrous and polygynous, and produce 1-3 broods per season. Young are precocial and leave the nest 1-3 hours after hatching to independently forage. Western Snowy Plovers are gregarious and form roosting flocks in the winter.

The U.S. Fish and Wildlife Service (USFWS) listed the coastal population of the Western Snowy Plover as a threatened population segment in 1993 under the federal Endangered Species Act (USFWS, 1993; 58 FR 12864-12874). In 1999, the USFWS designated critical habitat; however, the designation was rescinded due to inadequacies in the economic evaluation component of the designation. Final designation of critical habitat for the Western Snowy Plover occurred in 2005 and included several beaches in Humboldt County and gravel bars on the lower Eel River near Fortuna. The Elk River Wildlife Trail Improvement project area was not included in the final 2005 critical habitat designation for the Western Snowy Plover (USFWS, 2005a).

Since the Western Snowy Plover population segment was listed as Threatened, there has been a concerted effort in Humboldt County by biologists, resource agencies, and university counterparts to survey for plovers primarily during the spring/summer breeding season as well as the late summer and fall non-breeding season. Surveys have primarily focused on Recovery Unit 2, which includes Del Norte, Humboldt, and Mendocino Counties. Based on the preponderance of surveys, the majority of Western Snowy Plovers occur in Humboldt County (USFWS, 2001; Colwell et al., 2005); and primary survey areas within Humboldt County include Little River State Beach and Clam Beach, the South Spit of Humboldt Bay and Eel River Wildlife Areas, and the Eel River gravel bars. Coupled with surveys, numerous recovery actions have occurred within Recovery Unit 2 designed to improve plover nesting success and post-fledging survival in order to recover populations to sustainable levels.

In addition to the aforementioned primary survey locations, "fringe" areas have been surveyed where historical observations exist and suitable habitat remains. This serves to either confirm the presence or absence of plovers, or to detect occupancy as populations shift or habitat changes or more importantly, as populations recover.

The following information represents a summary of surveys completed by a consortium of local biologists (provided by R. LeValley, Mad River Biologists, 2006); as well as historical occurrences contained within the CNDDB. According to the CNDDB, one museum egg set was collected in 1920 from the Elk River Spit, and one pair of plovers was observed in May 1977 (Page and Stenzel, 1981), as well as a single bird three days later. Furthermore, a single plover was observed in October 1979. Three surveys were completed in 1993 and no plovers were observed; a single survey was conducted in 1999 and 2000 and no plovers were observed. From 2001 to present, surveys have been completed that have included multiple visits per year, especially in 2002 when surveys were completed twice a month from January through September (excluding February), resulting in five individual Western Snowy Plover detections. In summary, three surveys were completed in the 1970s, none in the 1980s, four in the 1990s, and 47 surveys since 2000,

culminating in nine Western Snowy Plover detections on the Elk River Spit. Despite survey efforts, nesting on the Elk River Spit by Western Snowy Plovers has not been documented since the 1920 museum egg collection.

On the pacific coast, western snowy plovers are associated with flat, open areas with sandy or saline substrates; the exception would be Eel River gravel bars (USFWS, 2001). In winter, western snowy plovers are found on many of the beaches used for nesting and some of the beaches where they do not nest including estuarine sand and mud flats (USFWS, 2001).

The east side of the Elk River Estuary closest to the project area contains extremely limited foraging habitat and no nesting habitat for the Western Snowy Plover. The most substantial portion of beach habitat is located at the northern extreme of the project area near the proposed Truesdale beach and Park section of the project area. Beach habitat is roughly 20 feet wide, tidally influenced, and abuts disturbed upland habitat and a series of planted knobcone pine trees. The remainder of waterfront habitat adjacent to the project area is Estuarine intertidal emergent wetland habitat located at or near MHWM. Vegetation within this Estuarine intertidal habitat is comprised entirely of herbaceous species with scattered patches of bare ground and brown and green algae (mudflats).

On the west side of the Elk River Estuary, open sand habitat most suitable for Western Snowy Plover use starts around the former fuel line trestle and proceeds to the northern extent of the Elk River Spit. Although beach habitat in this portion of the spit can be fairly wide and seemingly suitable for foraging, nesting is unlikely simply because this is a substantial loafing area (resting and preening) for other shorebird species, waterfowl, gulls, pelicans, wading birds (egrets and herons), and cormorants. Several hundred to a few thousands birds routinely use the northern extent of the spit.

The outer portion of the Elk River Spit from Stinky Beach north contains the most suitable Western Snowy Plover habitat within the vicinity of the project area. As described above, the preponderance of plover detections have occurred on the outer Elk River Spit beach; however, nesting remains to be detected.

The Elk River Estuary and Spit is an important resource for resident and migratory avian species. While surveys have yet to demonstrate Western Snowy Plover nesting activities, plover presence has been detected nine times since 2000. The Humboldt Bay side of the Elk River Spit remains the most suitable Western Snowy Plover habitat in proximity to the project area. It is unlikely that the project as proposed will have any impact on Western Snowy Plover presence, use, or nesting potential on the Elk River Spit.

Northern red-legged frogs (*Rana aurora aurora*) are in the Family Ranidae and are associated with lentic (standing to low flow) conditions for breeding sites. Adults and other age classes are know to disperse great distances (more than 300 meters) and are associated with mesic forests and riparian areas (Pearl, 2005). Due to the mobility of northern red-legged frog, and greater thermal tolerances, northern red-legged frogs are relatively common within the coastal fog belt of Humboldt County. Two ponds located on the south Crowley property have suitable breeding habitat for the northern red-legged frog assuming that salinity is not limiting. Northern red-legged frog were not observed during any of the site visits, however, Pacific tree frogs (*Hyla regilla*) are present, and are often found in similar breeding and non-breeding habitat. Northern red-legged frogs typically breed earliest along the coast compared to inland; however, no egg masses were observed in the northern

pond on December 19, 2006, during a focused survey. Additional surveys in January, February, and March would be necessary to determine if northern red-legged frogs are breeding in the south Crowley ponds.

Northwestern Pond Turtle (*Emys marmorata marmorata*) are in the Family Emydidae and use similar habitat types to the northern red-legged frog. Western pond turtles are also commonly found in lotic (flowing) habitats. Western pond turtles were not observed in the southern Crowley property and their presence is unlikely. However, any conservation measures adopted to benefit the northern red-legged frog will likely benefit the western pond turtle as well.

Tidewater Goby (*Eucyclogobius newberryi*) are in the Family Gobiidae and are endemic to brackish lagoons and estuaries of coastal California from the Smith River in Del Norte County to Agua Hediona Lagoon in San Diego County (Swift et al., 1989). A recent survey by Chamberlain (2006) investigated the environmental variables important to tidewater goby in California lagoons and estuaries in historical locations, as well as documented the current distribution of the species. Surveys were conducted in Humboldt Bay; however, none were conducted in the Elk River Estuary, suggesting that tidewater goby may not be present within the Elk River Estuary or in adjacent wetland habitat. The project as proposed will not affect the Elk River Estuary or wetlands with tidal influence; therefore, no impacts to the tidewater goby are anticipated with implementation of the proposed project.

Coastal cutthroat trout (*Oncorhynchus clarii clarki*) are in the Family Salmonidae and are found in coastal streams from the Eel River to Seward in southeastern Alaska. Populations in the lower Eel River drainage (including tributaries) represent the southern extent of the species range. The project as proposed will not affect the Elk River Estuary; therefore, no impacts to coastal cutthroat trout are anticipated.

Southern Oregon Northern California Coast (SONCC) Coho Salmon (*Oncorhynchus kisutch*) **and northern California steelhead** (*Oncorhynchus mykiss irideus*) are in the Family Salmonidae. The Elk River is an important watershed for both species. However, the project as proposed will not affect the Elk River Estuary; therefore, no impacts to the Coho salmon or steelhead are anticipated.

Ospreys (*Pandion haliaetus*) are in the Family Accipitridae. Ospreys are commonly observed hunting for fish over Humboldt Bay and along the Humboldt County coastline. The Elk River watershed is an important nesting area (Hunter et al., 2005) as prominent snags suitable for nesting are abundant and river corridors appear to be a preferred landscape attribute for Osprey occupancy. The project as proposed will have no impact on Osprey.

Double-crested Cormorants (*Phalacrocorax auritus*) are in the Family Phalacrocoracidae. Double-crested cormorants are piscivorous and common along rocky coasts, beaches, and inland lakes and rivers. Double-crested cormorants were commonly observed sunning and preening on the northern extent of the Elk River Spit. The project as proposed will not affect the Double-crested Cormorant.

The **California Clapper Rail** (*Rallus longirostris obsoletus*)is in the family Rallidae and was once present in Humboldt County; however, habitat loss and alteration from both human activities and invasion by non-native plant species has largely contributed to the extirpation of this species in Humboldt County (Hunter et al., 2005). One specimen was collected in 1917, and the last

unverified reports of California Clapper Rails in Humboldt Bay occurred in the 1930s (Hunter et al., 2005). The California Clapper Rail is almost entirely associated with the remaining salt marsh habitat of the San Francisco Bay. The project as proposed will not affect the California Clapper Rail.

The Bald Eagle (*Haliaeetus leucocephalus*) is a member of the Family Accipitridae. Bald Eagles are found throughout North America. Bald Eagles are opportunistic foragers with variable diets based of prey availability. Bald Eagles build large stick nests that are often reused from year to year by the same pair. Breeding habitat is associated with aquatic habitats (coastal areas, rivers, lakes, and reservoirs) with forested shorelines or cliffs in North America (USFWS, 2005c). Bald Eagles will not be affected by the project as proposed.

4.5 CNDDB Natural Communities

Natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. CNDDB natural communities are habitat for numerous special status plant and animal species. The natural communities that are included in the CNDDB are based on the state and global ranking status, which provides an estimate of the number of acres that remains of a particular community and threat level designation. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California.

Coastal Terrace Prairie. Coastal terrace prairie is a native grassland community found on sandy, marine terraces within the zone of fog intrusion. This habitat is dominated by fairly tall (greater than 3 feet) sod and tussock-forming perennial grasses. Herbaceous annual species are typically scattered amongst the grasses. Much of California's coastal prairie habitat has been destroyed by agricultural conversion and development. The remaining areas are also threatened by the invasion of non-native species such as annual fescues (*Vulpia* sp.), nonnative bromes (*Bromus* sp.), and oats (*Avena* sp.). The state rarity status for coastal terrace prairie is very threatened (S2.1) with 2,000-10,000 acres remaining in the state. A disturbed form of coastal prairie that intergrades with disturbed upland habitat is located within the parking and landscaping portion of the study area.

Northern Coastal Salt Marshes. Northern coastal salt marshes develop along the intertidal shores of bays, lagoons, and estuaries. The historic distribution of northern coastal salt marsh in Humboldt County and throughout California has been greatly reduced by agricultural conversion, diking, and coastal development. Native species commonly associated with northern coastal salt marsh include spearscale, tufted hairgrass, saltgrass, gumweed, salt rush, pickleweed, and silverweed. A number of sensitive plant species are found within this habitat type (refer to Table 1). The state rarity status for northern coastal salt marsh is very threatened (state rank S2) with 2,000 to 10,000 acres remaining in the state. This natural community is located throughout the western portion of the study area.

Northern Foredune Grassland. Northern foredune grassland habitat is located in active coastal dune areas where plants are subject to desiccating, salt-bearing winds. Perennial grasses that are up to 2.5 feet tall dominate this habitat. Coverage varies from dense to scattered. Dominant grass species in North Coast foredune habitat are almost always European dunegrass and American dunegrass. Succulent, perennial herbs and stunted shrubs approximately 10 inches tall are often interspersed amongst the grasses. Associates typically include yellow sand verbena, silver beachweed, and sea rocket in areas most exposed to the wind and beach morning glory, and beach

primrose (*Camissonia cheiranthifolia)* in more sheltered sites (Holland, 1986). The state rarity status for northern foredune grassland is very threatened (state rank S1) with less than 2,000 acres remaining in the state. A disturbed form of northern foredune grassland and dunemat vegetation is located throughout the western portion of the study area.

Sitka Spruce Forest. Sitka spruce grows in mild wet coastal climates and occurs in a narrow band along the Pacific coast from Northern California to Alaska. Sitka spruce forest is usually found growing on steep seaward upland slopes or topographically flat areas, but can also occur in wetlands, such as stream and river backwaters, bottoms, and floodplains. Species commonly associated with upland Sitka spruce forests include redwood (*Sequoia sempervirens*), western hemlock (*Tsuga heterophylla*), hazelnut (*Corylus cornuta*), cascara (*Rhamnus purshiana*), salmonberry (*Rubus spectabilis*), Douglas's iris (*Iris douglasiana*), false lily-of-the-valley (*Maianthemum dilatatum*), and sword fern. The state rarity status for Sitka spruce forest is very threatened (state rank S1.1) with less than 2,000 acres remaining in the state.

Palustrine forested wetlands that are dominated with Sitka spruce have a different assemblage of species. The overstory typically consists of Sitka spruce, Oregon crabapple (*Malus fusca*), red alder, with a subcanopy of cascara, willows, twinberry (*Lonicera involucrate*), and wax myrtle (*Myrica californica*). Dominant shrubs include salmonberry, thimbleberry (*Rubus parviflorus*), and elderberry (*Sambucus racemosa*). Common herbaceous species are sword fern, false lily-of-the-valley, milk maids (*Cardamine californica*), Douglas iris, and grass species including Pacific reed grass (*Calamagrostis nutkaensis*).

No Sitka spruce forests are located within the project area.

5.0 Survey Results

5.1 Special Status Plant Species

Out of the 22 special status plant species that have suitable habitat in the study area, the only species that was detected during the focused botanical surveys was Point Reyes bird's-beak. Four occurrences of this species were encountered in the Estuarine intertidal emergent habitat (Figure 3). Table 2 presents dominant species and phenological stage information for each occurrence.

Table 2 Point Reyes Bird's-Beak Occurrence Information Elk River Wildlife Trail Improvement Project, Eureka, California			
Occurrence No.	**Number of Plants**	**Phenological Stage**	**Dominant Species**
1	1	Flower	*Salicornia virginica* 50% *Spartina densiflora* 25% Bare ground 20% *Triglochin maritima* 5% *Cordlylanthus maritimus* ssp. *palustris* 5%
2	>100	Half flower/ half fruit	*Salicornia virginica* 50% *Cordlylanthus maritimus* ssp. *palustris* 25% *Spartina densiflora* 10% *Spergularia macrotheca* 10% *Jaumea carnosa* 5%
3	1	Flower	*Salicornia virginica* 50% *Distichlis spicata* 25% *Spartina densiflora* 10% *Jaumea carnosa* 5% *Atriplex patula* 5% *Cordlylanthus maritimus* ssp. *palustris* 5%
4	44	Flower	*Salicornia virginica* 50% *Cordlylanthus maritimus* ssp. *palustris* *Cordlylanthus maritimus* ssp. *palustris* 20% *Spergularia macrotheca* 15% *Spartina densiflora* 10% Bare ground 5%

The northernmost occurrence consisted of only one individual flowering plant, without fruit developing. Occurrence number 2 was the largest out of the four occurrences and consisted of over 100 individuals (Figure 3). Occurrence number 3 was located in a salt marsh pocket that is infrequently tidally inundated and is located above the MHWM. This occurrence was the only one where salt grass was a dominant species. Threats to the Point Reyes bird's-beak occurrences include competition with non-native species but, otherwise, the occurrences are relatively protected from other threats such as foot traffic and trampling. A CNDDB occurrence form will be submitted to the database.

Pink sand verbena was not detected in the study area during the 2006 focused surveys but it should be noted that one plant was detected in the study area during a 1999 survey (SHN, 1999). The individual occurred in the foredune/dunemat habitat located west of the northern Crowley property (SHN, 1999).

5.2 Special Status Plant Wildlife Survey Results

Thirty-four avian species and two mammal species were observed during the field visits (Table 3). Three of the 27 special status species know to occur within the vicinity of the study area were observed including the Osprey, Brown Pelican, and Double-crested Cormorant.

Table 3
Wildlife Species Observed During
Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California

Species	Date Observed	Area where bird was observed
Violet Green Swallow	7/7	NIY[1], NCP[2]
Cliff swallow	7/7	NIY, NCP
Barn Swallow	7/7	NIY, NCP
American Goldfinch	7/7/, 7/12	NIY, NCP, SCP[3]
Lesser Goldfinch	11/30	SCP
House Sparrow	7/7	NIY, NCP
Song Sparrow	7/7/, 7/12	NIY, NCP, SCP
Fox Sparrow	11/29, 11/30	NCP, SCP
White-crowned Sparrow	7/12, 11/30	SCP
Osprey	7/7/, 7/12	Over Bay
Red-shouldered Hawk	11/29	SCP
American Kestrel	11/30	SCP
Forester's Tern	7/7/, 7/10	Estuary/Spit
Double-crested Cormorant	7/7, 11/29	Estuary/Spit
Brown Pelican	7/7	Estuary/Spit
Great Egret	7/7, 11/29	Estuary/Spit
Great Blue Heron	7/12, 11/29	SCP
European Starling	7/7	NIY, NCP
Cedar Waxwing	7/7/06	NIY, NCP
Marbled Godwit	7/7, 7/10, 11/29	Estuary/Spit
Western Sandpiper	7/7/06	Estuary/Spit
Western Gull	7/7, 11/29	Estuary/Spit
Herring Gull	7/7, 11/29	Estuary/Spit
Black Phoebe	7/12, 11/30	SCP
Bushtit	11/30	SCP
Marsh Wren	11/30	SCP
California Towhee	11/30	SCP
Western Meadowlark	11/30	SCP
American Robin	11/30	SCP
Purple Finch	7/12	SCP
Ruby-crowned Kinglet	11/29	NCP
Bufflehead	11/29	Estuary/Spit
Widgeon	11/29	Estuary/Spit
Mallard	7/7, 11/30	Estuary/Spit, SCP
Mammals		
Raccoon	7/7/06	Estuary/Spit
Gray Fox	7/12	SCP

1. NIY: Industrial yard located on the north end of the study area.
2. NCP: North Crowley Property located immediately north of Hilfiker Road.
3. SCP: South Crowley Property located immediately south and east of Hilfiker Road.

6.0 Recommendations

6.1 Wetlands

The study area contains a total of approximately 8.12 acres of wetlands (Figure 3). Approximately 6.58 acres are Palustrine emergent/scrub shrub and approximately 1.54 acres are Estuarine intertidal. In addition to delineating jurisdictional wetlands, approximately 0.35 acres were delineated as ESHAs (Figure 3).

6.2 Special Status Plant Species

If the proposed trail improvement project includes any impacts to the high quality sand dune and northern foredune vegetation located south of the study area, adjacent to the existing EWWTP, a focused survey should be conducted for Humboldt Bay wallflower. This species flowers March through April and was not surveyed during the floristically appropriate period in 2006 because floristic surveys started in July.

Avoidance of the Point Reyes bird's-beak occurrences in the study area is highly recommended. Any impacts to these plants would not only require mitigation that reduces potential impacts to a less than significant level pursuant to §15380 of the California Environmental Quality Act (CEQA), but would also require state and federal permits if the wetland habitat that this special status species occurs in is impacted. The proposed project should avoid all salt marsh habitat, as this is a jurisdictional wetland that is regulated by a number of resource agencies and supports special status plant species. The proposed project should incorporate a buffer and best management practices during construction operations to ensure that there are no impacts, including but not limited to alteration of the hydrologic regime. Altering the hydrology of the salt marsh, which could include increased erosion into the salt marsh, could result in secondary impacts such as displacement of native salt marsh species and an increase in the cover of non-native species.

If the proposed project avoids the Point Reyes bird's-beak occurrences and does not include any impacts to suitable habitat for Humboldt Bay wallflower, no further botanical coordination is recommended for the proposed project.

6.3 Wildlife Species

The northern industrial yard currently offers little to no habitat value for wildlife and could be greatly improved by removing construction debris and human encampments. Replanting the northern industrial yard with native trees and shrubs would greatly improve the overall habitat values of this section of the study area. The majority of the northern Crowley property has the potential to be high quality habitat for wildlife. The wetland/upland mosaic is attractive to many bird species. Unfortunately, the current condition of the northern Crowley property is degraded due to human encampments in nearly every willow thicket. This portion of the study area would be greatly improved by the development of the Elk River Wildlife Trail and removal of human encampments and debris. The southern Crowley property has great potential for wildlife use primarily due to the extensive wetlands that exist on this portion of the study area. The estuarine habitat portion of the study area could be greatly improved for wildlife by removing invasive non-native plants that form low-diversity monocultures and restoring native plants.

All wetlands should be avoided to the extent possible and areas delineated as ESHAs should be preserved. Additionally, the clusters of American dunegrass in the western portion of the study area should be preserved and enhanced to the extent possible. There is a unique opportunity to incorporate the wetlands and ESHA throughout the project area with the proposed trail improvements. Quality wildlife viewing occurs on the northern Crowley property and placement of the trail between the ESHA and wetlands would contribute immensely to this opportunity. If the trail is placed on the southern Crowley property, we recommend locating it close to the wetlands to maximize viewing the area's natural resources. There is ample upland habitat along the western portion of the study area to place the trail in a manner to maximize viewing scenic and natural resources in Humboldt Bay and the Elk River Estuary. The trail should be routed around the Palustrine emergent wetland and salt marsh habitat in the parking and landscape area to avoid impacts to these environmentally sensitive resources.

7.0 References Cited

Bureau of Land Management. (March 2005). *Status Report: Abronia umbellata Lamark var. breviflora (Standley) L. A. Galloway (Pink sand verbena).* North Bend: BLM, Coos Bay District.

California Department of Fish & Game. (June 2006). California Natural Diversity Database (CNNDB) RareFind 3 Program.<http://www.dfg.ca.gov/whdab/html/cnddb.html>. NR:DFG.

---. (June 2006). Biogeographical Information and Observation System (BIOS) viewed at http://bios.dfg.ca.gov/

Chamberlain, C.D. (2006). *Environmental Variables of Northern California Lagoons and Estuaries and the Distribution of Tidewater Goby (Eucyclogobius newberryi).* Arcata Fisheries Technical Report Number TR 2006-04. Arcata:USFWS, Arcata Fish and Wildlife Office,

Colwell, M.A., C.B. Millet, J.J. Meyer, J.N. Hall, S.J. Hurley, S.E. McAllister, A.N. Transou, and R.R. LeValley. (2005). "Snowy Plover Reproduction Success in Beach and River Habitats." *J. Field Ornithology* 76:373-382. NR: U.S. Geological Survey, Biological Resources Division.

Eicher, A. L. (1987). *Salt Marsh Vascular Plant Distribution in Relation to Tidal Elevation, Humboldt Bay, California.* A Thesis Presented to the Faculty of Humboldt State University. Arcata:HSU.

Hickman, J. C., ed. (1993). *The Jepson Manual Higher Plants of California.* Berkeley:University of California Press Berkeley.

Holland, R. F. (1986). *Preliminary Descriptions of Terrestrial Natural Communities of California.* Non-game Heritage Program. Sacramento:DFG. 156 pp.

Hunter, J. E., D. Fix, G. A. Schmidt, and J. C. Power. (2005). Atlas of the Breeding Birds of Humboldt County, California. Seattle:Reischling Press, Inc., 440 pgs.

Imper, D. K. (February 18, 2003). "Port Orford Sewage Offshore Discharge—Proposed Drilling Location." unpublished letter/email to Rob Burns, USFWS Roseburg Office. Arcata: USFWS.

Imper, D. K. and John O. Sawyer, PhD. (October 1992). *Botanical Survey of the Crescent City Marsh Wildlife Area.* Arcata:CSU & DFG.

Kalt, J. (Winter 2006). "Crescent City Marsh and Western Lily Threatened by Two Proposed Developments," *Darlingtonia.* Arcata: CNPS, North Coast Chapter.

LeValley, R. (2006). Summary of Western Snowy Plover detections and survey effort. Received by electronic mail on 11/14/2006. Arcata:Mad River Biologists.

Page, G. W., and L.E. Stenzel. (1981). "The Breeding Status of the Snowy Plover In California, *Western Birds* 12:1-39. Albuquerque: University of New Mexico.

Pearl, C.A. (2005). "Rana aurora aurora (Northern red-legged frog)"in *Amphibian Declines--The Conservation Status of United States Species*. Berkeley: University of California Press.

SHN Consulting Engineers & Geologists, Inc. (August 21, 2001). Sensitive Plant Survey, Happy Harp Timber Harvest Plan, Humboldt County, California . Eureka:SHN.

---. (December, 1999). Botanical Survey and Wetland Delineation City Of Eureka Crowley Property, Hilfiker Lane Eureka, California. . Eureka:SHN.

Swift, C. C., J. L. Nelson, C. Maslow, and T. Stein. (1989). *Biology and Distribution of the Tidewater Goby, Eucyclogobius newberryi (Pisces: Gobiidae) of California*. Los Angeles Co. Museum of Natural History. Contributions in Science 404:1-19. Los Angeles: Los Angeles Co. Museum of Natural History.

Tibor, David P., ed. (2001). *Inventory of Rare and Endangered Plants of California, 6th Edition; Special Publication No. 1*. Sacramento: California Native Plant Society.

U.S. Fish & Wildlife Service. (1993). "Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Pacific Coast Population of the Western Snowy Plover. 50 CFR Part 17; Vol. 58, No. 42: 12864-12874." Portland: USFWS.

---.. (2001). *Western Snowy Plover (Charadrius alexandrinus nivosus) Pacific Coast Population Draft Recovery Plan*, Xix + 630 pp. *Portland*: USFWS.

---. (2005). Western Snowy Plover Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B07C.html

---. (2005a). *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover*. 50 CFR Part 17; Vol. 70, No. 188: 56970-57119. Portland:USFWS.

---. (2005b). California Brown Pelican Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B02L.html

---. (2005c). Bald Eagle Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B008.html

Appendix A

Wetland Delineation

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 •shninfo@shn-engr.com

Reference: 006107

January 30, 2007

Mr. Gary Bird
City of Eureka
531 K Street
Eureka, CA 95501-1146

Subject: Wetland Delineation for the Proposed Elk River Trail Improvement Project, Eureka, California

Dear Mr. Bird:

On July 10 and 31, August 1, and November 29 and 30, 2006, SHN Consulting Engineers & Geologists, Inc. (SHN) completed a wetland delineation within the city limits of Eureka, California (west ½ of Section 33, Township 5 North, Range 1 West Humboldt Base Meridian; Figure 1). The study area encompasses approximately 29 acres and is bordered to the north by industrial and residential property, to the east by railroad tracks and industrial/retail businesses, to the south by the Eureka Wastewater Treatment Plant, and to the west by the Elk River Estuary. A 2002 aerial photograph obtained from the City of Eureka (City) was used as the base map for fieldwork and reporting.

This wetland delineation was conducted in accordance with the U.S. Army Corps of Engineers (ACOE) 1987 *ACOE Wetland Delineation Manual* (Environmental Laboratories, 1987), *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (California Coastal Commission, 1994), and the City of Eureka General Plan Policy Document (City of Eureka, 1999).

Under Section 404 of the Clean Water Act, waters of the United States (including associated wetlands) are placed under federal jurisdiction of the ACOE. Furthermore, within California's coastal zone, the Coastal Act as administered by the California Coastal Commission (CCC) affords wetlands additional protection and regulation. As stated in the 1987 *ACOE Wetland Delineation Manual* (Environmental Laboratories, 1987) and discussed further in the California Coastal Commission's *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (California Coastal Commission, 1994), specific criteria are used to identify wetlands or determine wetland status, including: hydrophytic vegetation, hydric soils, and wetland hydrology.

The objective of this wetland delineation was to identify and delineate all wetlands within the study area using the specific criterion, as stated above. The following definitions are from ACOE (1987) unless specified otherwise. Hydrophytic vegetation is dominated by plant species known to be adapted to wetland sites, as specified in the regional index (U.S. National Ecology Research Center, 1988). Hydric soils have characteristics that developed in a reducing atmosphere, which exists when periods of prolonged soil saturation result in anaerobic conditions within the upper 12 inches of the soil profile. Hydric soils support the growth and regeneration of hydrophytic vegetation. Wetland hydrology is the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.

Wetland hydrology is demonstrated through direct or indirect evidence of flooding, ponding, or saturation for a significant portion of the growing season (Environmental Laboratories, 1987; California Coastal Commission, 1994; ODSL, 2005). Wetlands identified in this report had the presence of all three indicators. Refer to Section 4.3.6 of this report for other regulated/sensitive habitats that were delineated.

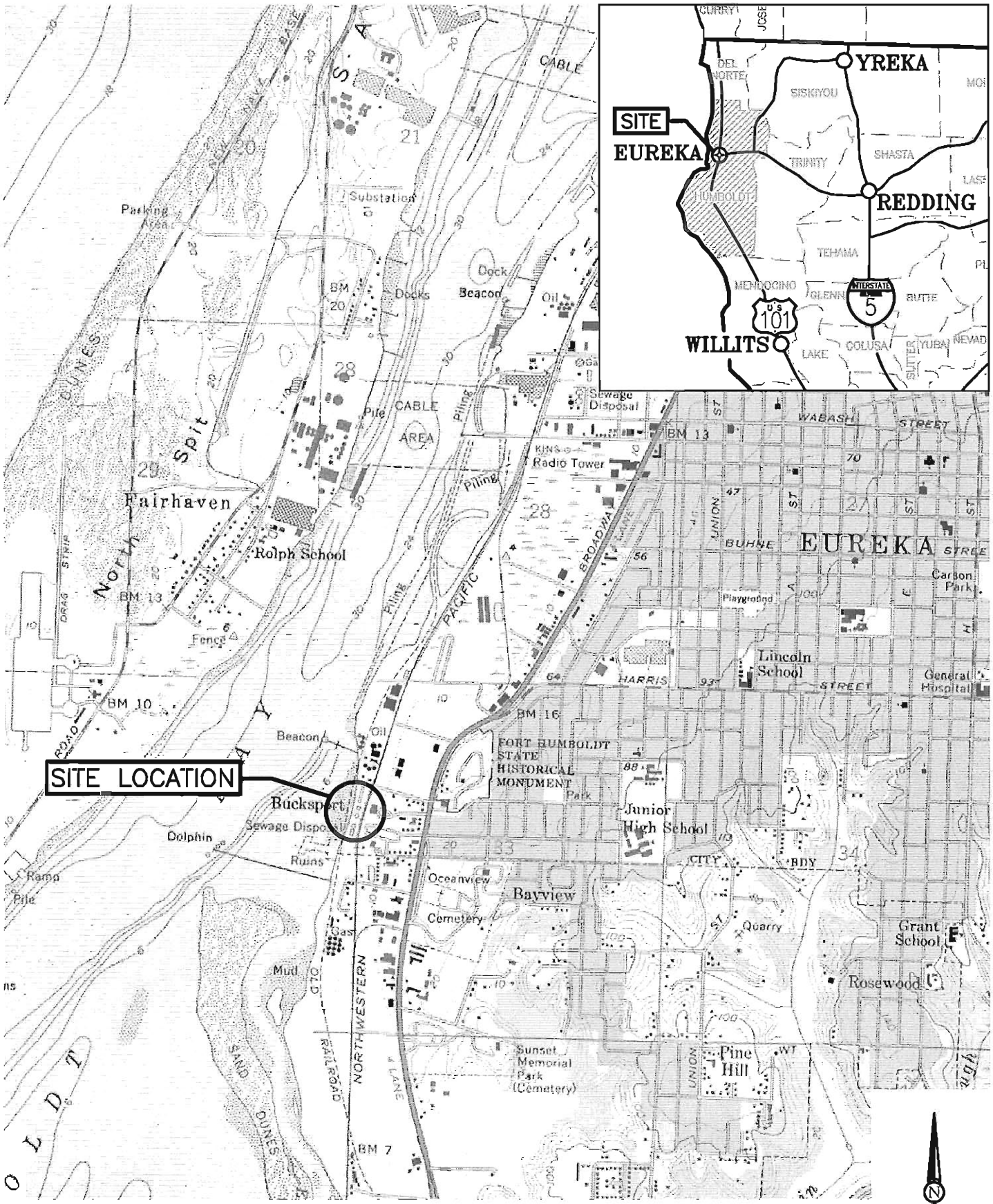
1.0 Environmental Setting

The study area is located on undeveloped land in the southwest portion of Eureka. For organizational purposes, portions of the study area are referenced as: 1) the northern industrial yard, 2) the northern Crowley property, 3) the southern Crowley property, 4) the parking and landscaping area, and 5) estuarine habitat (Figure 2). Assessors Parcel Numbers (APNs) that correspond with the five sections of the study area are as follows:

- Northern industrial yard: APNs 007-081-013, -015, -016; and APNs 007-091-002 and –003
- Northern Crowley property: APNs 007-091-005, -006, -007, -008, -011, and –012; and portions of APNs 019-321-009 and –012
- Southern Crowley property: APNs 019-321-004 and 019-271-004; and portions of APNs 091-321-005 and –012
- Parking and landscape area: APNs 091-331-001, -002, -011, and–009; and APN 019-321-006
- Estuarine habitat: APNs 007-081-001; APNs 007-091-001 and portions of –005, –011, and -012; and portions of APNs 091-321-006, 019-331-001 and 019-331-009.

The northern industrial yard contains miscellaneous construction material and debris, dilapidated fencing, and several human encampments and associated debris. The northern Crowley property is mostly natural, lacking construction debris or remnants of development/ industry; however, it contains several human encampments and associated debris, as well as dilapidated fencing along the railroad tracks on the east side and along the estuary. The southern Crowley property has intact perimeter fencing and an access road in the center of the property where the Eureka Fire Department conducts training exercises. Furthermore, the southern Crowley property contains various debris piles, and infrastructure remnants including building foundations, overhead lighting, ponds, and fencing. The southern Crowley property also appears to have been partially cleared of vegetation within the past five years and is now in early stages of regeneration or succession. The parking and landscaping section of the study area contains a parking lot for the Elk River Wildlife Trail and a mowed area directly north of the parking lot. The estuarine habitat extends the entire length of the study area from the northern industrial yard to the existing Elk River Wildlife Trail and contains mostly intact mud flat and salt marsh habitat. Other forms of relict industry including the former fuel line trestle and other miscellaneous pilings occur within the estuarine portion of the study area.

A tidally-influenced drainage ditch is located along the eastern boundary of the northern and southern Crowley properties. The ditch originates at the Elk River Estuary, passes under Hilfiker Lane, borders the eastern edge of the southern Crowley property and extends north along the railroad tracks before passing under Hilfiker Lane again. The ditch daylights at the southeast side



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Eureka, California	Site Location Map Wetland Delineation SHN 006107
	January 2007	006107-LOCATION	Figure 1

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SHN
CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Eureka, CA 95501 FAX (707)441-8855 (707)441-8877

NO.	DATE	REVISION	BY

DSGN
DR CN/CMR
CHK
APVD

CITY OF EUREKA
ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT
EUREKA, CALIFORNIA

WETLAND DELINEATION STUDY AREA

SHEET 2 OF 4
DATE 1/2007
PROJ. NO. 006107

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of the northern Crowley property and terminates near the northern end of that property. Vegetation within and along the ditch includes a mix of freshwater and brackish tolerant hydrophytes. Dominant species include silverweed (*Potentilla anserina*), spearscale (*Atriplex triangularis*), common rush (*Juncus effuses*), pickleweed (*Salicornia virginica*), brass-buttons (*Cotula coronopifolia*), and dense-flowered cordgrass (*Spartina densiflora*), with scattered seaside arrow grass (*Trigolchin maritima*).

2.0 Soils

Elevations within the study area range from sea level to approximately 10 feet above Mean Sea Level (MSL). Soil types for the study area are described in the *Soils of Western Humboldt County California* (McLaughlin and Harradine, 1966) as Sand Dune (SD), and may include portions of Bayside silty clay loam (Ba6). According to McLaughlin and Harradine (1966), Bayside silty clay loam is formed in very low-lying areas, is very poorly drained and is often affected by salts, and the surface horizon is frequently puddled. The average annual precipitation is 38.10 inches and the average annual air temperature is 53.2 degrees Fahrenheit (NOWData-NOAA online weather data, 2006).

3.0 National Wetland Inventory

The U.S. Fish and Wildlife Service is the federal agency responsible for tracking wetland trends as well as maintaining a reliable inventory through its National Wetland Inventory (NWI; USDI, 1987). The NWI can be queried for specific locations throughout the United States to aid federal, state, and local agencies in making informed decisions concerning wetlands. The study area has both freshwater and estuarine wetland habitat types (Figure 3):

3.1 Freshwater Wetlands

According to the NWI (USDI, 1987), the northern and southern Crowley property portion of the study area contains a mix of two freshwater wetland types:

- PEM/SS1C: Palustrine Emergent, Scrub-Shrub, Broadleaved deciduous, and Seasonally Flooded. This wetland type is a combination of two common freshwater wetlands in the Eureka area, Palustrine emergent seasonally flooded wetland that is dominated by herbaceous species and Palustrine scrub-shrub seasonally flooded wetland that is dominated by broadleaved deciduous trees and shrubs.

3.2 Estuarine Wetlands

The NWI (USDI, 1987) identifies several wetland class and sub-class types within the estuary and mouth of Elk River. The following two types apply to the study area:

- E2AB3M: Estuarine, Intertidal, Aquatic Bed, Rooted Vascular, and Irregularly Exposed. The NWI identifies the tidally influenced wetlands in the northern portion of the study area as this type (Figure 3). This estuarine wetland is typical of salt marshes that occur near the

Mean High Water Mark (MHWM) that are dominated with saline tolerant herbaceous hydrophytes and are regularly inundated.

- E2US3N: Estuarine, Intertidal, Unconsolidated Shore, Mud, and Regularly Exposed. The NWI identifies the tidally influenced wetlands in the southern portion of the study area as this type (Figure 3). This estuarine wetland is often referred to as mudflat, is regularly tidally inundated, and may be vegetated with brown and green algae.

While NWI maps are an excellent reference point for the presence or absence of wetlands, the resolution of the NWI tends to be on a macro scale, and can underestimate the full extent of a given wetland or miss wetlands that are dominated by herbaceous vegetation.

4.0 Wetland Delineation

4.1 Methodology

Prior to conducting fieldwork, the SHN wetland delineation team reviewed existing information to assist with the determination of wetland boundaries within the study area. This review included *Soils of Western Humboldt County California* (McLaughlin and Harradine, 1966); NWI maps (USDI, 1987), U.S. Geological Survey (USGS) topographic quadrangle maps (Eureka), and aerial photographs. All field mapping was completed with a Trimble GeoExplorer XT™ handheld Global Positions System (GPS) differentially corrected for horizontal accuracy of less than three feet.

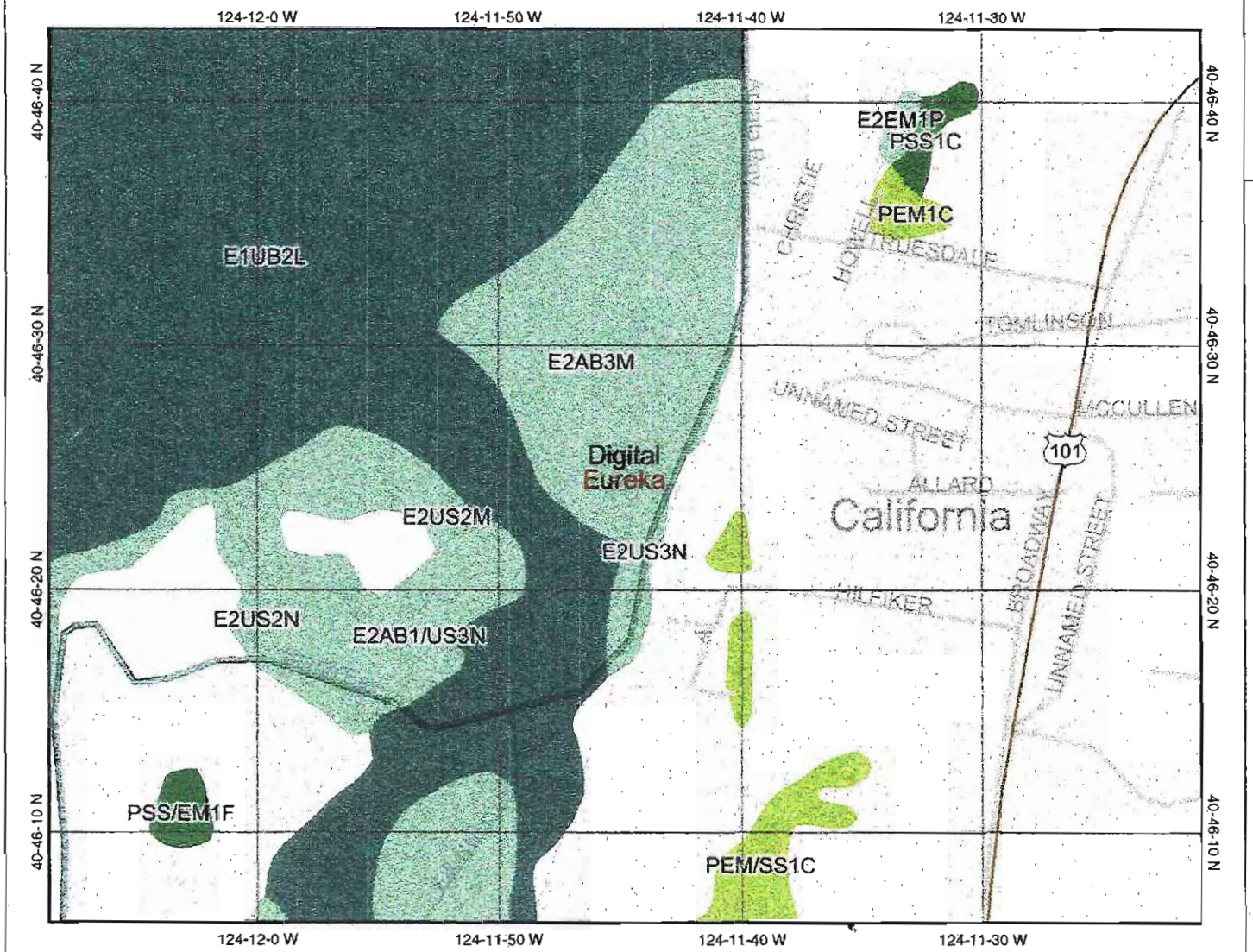
4.2 Overview

Twenty-eight sample points were characterized in the study area for the aforementioned botanical, hydrological, and soil parameters (Figure 4). Point locations were selected:

1. to achieve appropriate coverage and characterization of wetland and upland habitats;
2. to determine the approximate boundary line between wetlands and uplands by determining the extent of one or more key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation);
3. to document potential changes in the vegetative community; and
4. in locations where habitat alteration has occurred, to verify presence/absence of hydric soils and hydrology.

With the exception of two sample points (14 SC and 17 SC), soils at all sample points were dug to a minimum depth of 12 inches, with most sample points dug to a depth of 16 inches. Sample points are typically paired or are located along a transect to determine wetland boundaries. Furthermore, the distribution of sampling points allows for extrapolation to other similar vegetation types and elevations within the study area. Soil profile depths were measured from the surface to each horizon, and the thickness of each horizon was also measured; the Munsell Soil Color Chart (Kollmorgen, 1990) was referenced to determine the matrix and mottle colors (if present). Soils

Elk River Access Project



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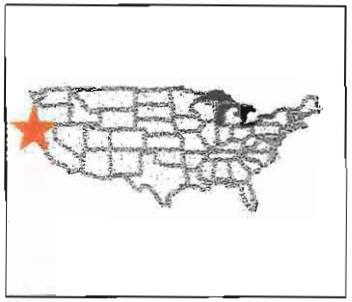


Legend

- Interstate
- Major Roads
- Other Road
- Interstate
- State highway
- US highway
- Roads
- Cities
- USGS Quad Index 24K
- Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan
- NHD Streams
- Counties 100K
- Urban Areas 300K
- States 100K
- South America
- North America

Scale: 1:10,577

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

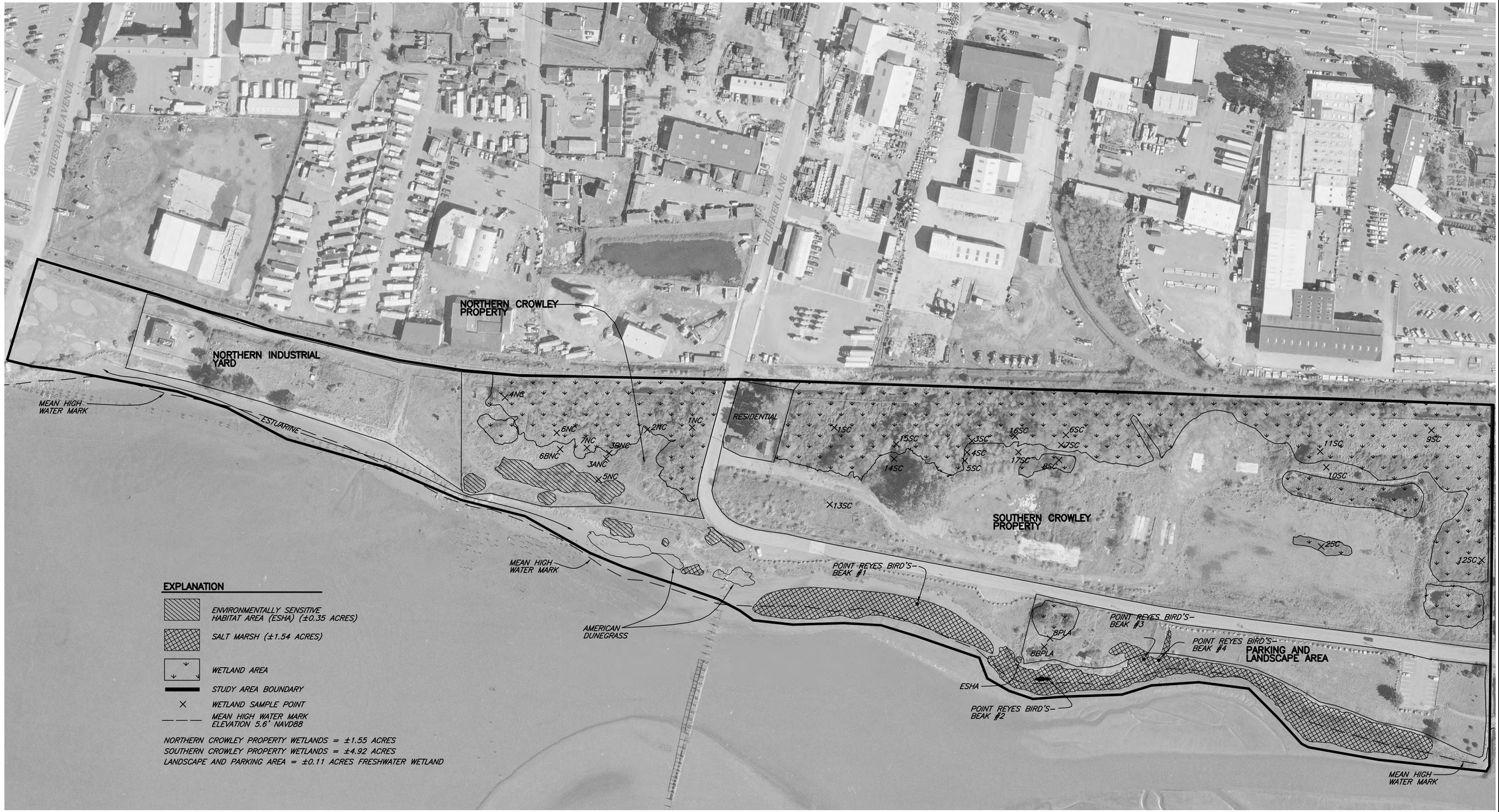
Map created from U.S. Fish and Wildlife's National Wetland Inventory webpage:http://www.fws.gov/nwi/

SHN Consulting Engineers & Geologists, Inc.

City of Eureka
Elk River Wildlife Trail Improvement Project
Eureka, California

Wetland Delineation
SHN 006107

January 2007	Wetland.cdr	Figure 3



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DSGN
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CITY OF EUREKA
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EUREKA, CALIFORNIA

WETLAND DELINEATION

SHEET 4 OF 4
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were closely inspected for hydric soil indicators as well as primary and secondary hydrology indicators. Each pit was located by GPS, flagged with a pine stake, and refilled at the conclusion of data collection.

At each sample point, the vegetation stratum was inspected and identified to the lowest taxonomic level (species) possible at the time of the field visit. However, it should be noted that seasonality dictates species presence or absence so it is possible that some herbaceous species were not present during all the surveys. Relative percent cover of each plant species was visually estimated within the sample point and within each stratum. The 50/20 method was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. The herbaceous stratum was inspected at a 5-foot radius centered on the sample point; shrub and tree strata were inspected similarly at a 30-foot radius. The wetland indicator status of plant species for this investigation was based on the regional index (U.S. National Ecology Research Center, 1988); botanical nomenclature follows *The Jepson Manual, Higher Plants of California* (Hickman, 1993).

4.3 Results

For each sample point, an ACOE Routine Wetland Determination Data Form was completed. Copies of all data forms are included in Attachment 1. Photos of representative sample points are included in Attachment 2.

4.3.1 Northern Industrial Yard

The northern industrial yard portion of the study area does not contain any wetland features. The site is dry and heavily disturbed. This area is dominated by ruderal vegetation that is characteristic of disturbed upland habitat (Photo 1).

4.3.2 Northern Crowley Property

Nine sample points (4 paired, 5 single) were inspected to characterize the northern Crowley (NC) property.

Sample Points 1 NC and 4 NC were taken within the willow thicket (*Salix sitchensis* and *S. lucida*) in the eastern portion of the northern Crowley property (Photo 2). Vegetation is hydrophytic and indicative of Palustrine scrub-shrub wetland. Soils have low chroma (10YR 2/1), two or more horizons, a gley matrix color at 12 inches (where mottles became abundant and contrasted), and tended to be sandy in texture. These soils are likely native Bayside silty clay loam.

Sample points 2 NC, 3B NC, 6 NC and 7 NC were taken west of the willow boundary, within the Palustrine emergent and scrub-shrub transition zone that is dominated by the herbaceous hydrophyte slough sedge (*Carex obnupta*; Photo 3). At these points, vegetation remained predominately hydrophytic and indicative of Palustrine emergent/scrub-shrub type wetland. However, although soils were still low in chroma, their value increased to 10 YR 4/2 or 4/3. Profiles remained relatively uniform with one or two horizons, mottles were absent, and texture was sandy.

At sample point 7 NC a well-defined organic pan (approximately 1-inch in diameter) was observed 12 inches from the surface; the formation of an organic pan is an indicator of hydric conditions within sandy soils (Environmental Laboratories, 1987).

Sample points 3A NC and 6B NC are upland points based on the shift in vegetation communities from a preponderance of hydrophytes found at 3B NC and 6 NC (wetland paired plot sample points) to upland species. Though sample points 3A NC and 6B NC have relatively low chroma (10YR 4/2), this indicator appears to be relatively widespread in this portion of the study area and is not necessarily a good indicator of wetland status. Furthermore, both sample point profiles were uniform, showed little to no variation in matrix color, mottles and streaking were absent, and lacked organic pan formation or organic horizons. Likewise, hydrology indicators were completely absent from these sample points.

Sample point 5 NC is an upland point characterized on the edge of the arroyo willow (*Salix lasiolepsis*) thicket on the western portion of the northern Crowley property (Figure 4). Although arroyo willow is a hydrophyte (FACW), it is found in drier portions of the study area when compared to sample points where Sitka willow was dominant (FACW+; sample points 1 NC and 4 NC). Furthermore, the sandy soils at sample point 5 NC are clearly well drained, and both value and chroma are higher (10YR 5/2 dry; 10YR 3/1 wetted) than wetland points located nearby. This sample point was inspected during both the dry and wet weather seasons. The soil profile showed no horizon change or mottle formation, and hydrology indicators were absent during both field inspections.

The northern Crowley property portion of the study area contains approximately 1.55 acres of wetland habitat but it is degraded from ongoing human encampments and associated debris (Photo 4).

4.3.3 Southern Crowley Property

The southern Crowley property (SC) was characterized using 17 sample points (five single points, six paired points, and six points along two transects). The western half of the southern Crowley property is clearly defined from the eastern half by the placement of fill from historic industrial activities. Topography is several feet higher on the western half due to the historic fill.

Sample points 10 SC, 13 SC, 14 SC, and 17 SC are upland points located on fill. In general, fill sample points lacked hydrophytes; contain non-native gravel and debris-dominated soils, and generally lacked hydrology. Sample point 2 SC also occurs on the fill prism; however, soil compaction and the wet climate has allowed for standing water to persist long enough to form a small isolated wetland dominated by the obligate hydrophyte pennyroyal (*Mentha pulegium*; Photo 5).

Sample points 1 SC, 15 SC, 3 SC, 16 SC, 8 SC, 7 SC, 6 SC, 11SC, 9 SC, and 12 SC occur in wetlands in the eastern and southern halves of the southern Crowley property (Figure 4). These sampling points are hydrophyte dominated (Photo 6), contain soils low in chroma and value; furthermore, soils tended to be well developed with abundant mottles and contrast, and hydrology is evident.

Evidence of recent vegetation removal or other disturbance is scattered in the eastern portion of the northern Crowley property (Photo 7). These soils appear to be consistent with Bayside silty clay loam.

At sample points 4 SC and 5 SC recent disturbance (dumping of gravel and wood chips, as well as goat grazing) made determining the wetland boundary more difficult (Photo 8). These two sample points were inspected during both the dry and wet weather seasons. No evidence of hydrology or redoximorphic features in the soil was observed during either of the site inspections therefore these sample points were determined to be upland.

Two transects were used to determine wetland boundaries through remnant industrial infrastructure on the southern Crowley property. One transect includes sample points 3 SC, 4 SC, and 5 SC and the other transect corresponds with sample points 6 SC, 7 SC, and 8 SC. As stated above, sample points 4 SC and 5 SC are upland and have been recently disturbed. Sample point 3 SC is wetland; it had a predominance of hydrophytes, hydrology was detected during the August field inspection, and the soil was low chroma with an abundance of gley mottles between 10 and 16 inches of the surface. Sample points 6 SC, 7 SC, and 8 SC were all determined to be wetland but 6 SC and 7 SC are separated from 8 SC by an old road prism, which was confirmed with upland sample point 17 SC. The road prism lacked hydrology and hydric soil indicators.

Sample points 9 SC, 10 SC, and 12 SC are located in the southern portion of the southern Crowley property (Photo 10). All three characterizations points are dominated by hydrophytes and hydrology was evident with saturation in the upper 12-inches of the soil profile. The three-sample points contained mottles in the lower profile, while sample points 9 SC and 12 SC where gley within 8-10 inches of the surface. Sample point 12 SC has been by construction of the historic pond features in that area of the site.

The southern Crowley property also contains two cattail (*Typha latifolia*) dominated human-made ponds (Photo 11). Sample points were not necessary to characterize these wetlands because hydrophyte vegetation is highly confined by water levels and then rapidly transitions to upland dominated vegetation beyond the water line.

The southern Crowley property portion of the study area contains approximately 4.92 acres of wetlands. The wetlands within the northeastern portion of the site have been substantially altered, such as filled, during previous industrial activities or contain remnants of historic infrastructure. The wetlands within the southern portion of the site are far less disturbed, as evident by the intact soil profiles, and are relatively high quality.

4.3.4 Parking and Landscaping Area

The pre-existing parking and landscape area contains no wetlands except at the northern extent where paired sample points 8 PLA and 8B PLA were characterized. Sample point 8 PLA is located in a small depression that has a higher percentage of hydrophytes and a lower percentage of upland species than the upland sample point 8B PLA. Soil colors and values were similar between the sample points, however, saturation within the soil profile was apparent in 8 PLA.

The parking and landscape area of the study area contains approximately 0.11 acres of Palustrine emergent/scrub-shrub wetland and 0.04 acres of salt marsh for a total of approximately 0.15 acres of within this portion of the study area.

4.3.5 Estuarine Habitat

Estuarine habitat, including both NWI wetland classes E2AB3M and E2US3N, was not characterized with sample points because it either clearly resides below the MHWM or is vegetated with salt marsh species and/or there is evidence of periodic tidal intrusion, including eel grass remnants. Habitat delineated as salt marsh encompasses approximately 1.54 acres (Figure 4). This total includes the 0.04 acres of salt marsh delineated in the parking and landscape area. Habitat delineated as estuarine includes both of the NWI classes; however our delineation map varies from the NWI map. As stated above, the NWI maps depict wetlands on a macro scale and to do not correspond with ground truthing, as is the case with this project.

4.3.6 Sensitive Areas

As stated at the beginning of this report, wetlands within the California Coastal Zone are under the regulation of a number of agencies including ACOE, CCC, California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS), and local lead agencies. The definition of a wetland varies among the agencies ranging from a stricter mandate regarding the quality of water resources to a broader mandate concerning the protection of sensitive habitats (DFG, 1994). ACOE regulates wetlands pursuant to Section 404 of the Clean Water Act and requires the presence of all three wetland criteria to meet the ACOE definition of jurisdictional wetlands. CCC and DFG have broader mandates including the protection of coastal resources, biological resources (biodiversity), and ecological functions; therefore, the presence of all three wetland criteria is not required to identify these environmentally sensitive areas (CCC, 1994; DFG, 1994). For the purpose of this study, areas that provide important habitat for wildlife, contribute to the functional values of adjacent wetlands, and/or provide habitat for special status species are considered Environmentally Sensitive Habitat Areas (ESHA) and have been identified. Areas identified as ESHA are not meant to meet a strict regulatory definition of any resource agency but instead have been delineated based on SHN's scientific understanding of the important values of these areas and our best professional judgment. Habitat that has been delineated as ESHA is consistent with Section 6.A.6 of the City of Eureka General Plan Policy Document (City of Eureka, 1999).

4.3.7 Wetland/Upland Acreage

Out of the approximately 29-acre study area, approximately 8.12 acres were delineated as wetlands (Figure 4). Although portions of the study area tend to dry out due to the lack of an impermeable confining layer, hydrologic factors (such as, a high and fluctuating water table and high precipitation) exert an overriding influence on the plant species that occur in the wetland portions (Environmental Laboratories, 1987), as well as the morphology and structure of the soils present in the study area. The majority of the study area included some species considered to be hydrophytic. However, in Humboldt County, many species listed as facultative wetland indicators occur frequently in transitional or upland habitats, and are poor indicators of wetland status in the

absence of the other corroborating soils and hydrological factors. Overall, the combination of hydrophytic vegetation, hydric soils, and saturation or ponding was used in this delineation to define wetlands. Please see Attachment 2 for representative photos of the study area.

4.3.8 ESHA Acreage

Areas that have been identified as ESHA are located adjacent to habitat delineated as wetlands, particularly on the southern Crowley property, or are distinct segments particularly on the northern Crowley property. ESHA encompasses approximately 0.35 acres in the study area.

5.0 Limitations

The conclusions in this wetland delineation reflect the best professional judgment of the SHN wetland delineation team and should not be considered final until verified by the ACOE and California Coastal Commission, as well as reviewed by the California Department of Fish and Game, and/or other local agencies with interest in wetland regulation/conservation. Property boundaries and wetland/upland mapping is approximate. Furthermore, the conclusions in this report represent a "snap shot in time" and not all herbaceous species were present at the time of the fieldwork. In addition, the delineation was not completed at the height of the wet season.

Please feel free to call us anytime at 707-441-8855 regarding the results of this report or the project.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Aimee C. Weber, CAE
Botanist and Certified Associate Ecologist

Michael G. van Hattem
Wildlife Biologist

ACW:MvH:lms
Attachments: 1. Wetland Delineation Data Forms
2. Study Area Photos

References Cited

California Coastal Commission. (1994). *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone*. Downloaded on 11-11-2005 at http://www.coastal.ca.gov/wetrev/wettitle.html.

California Department of Fish & Game. (December 14, 1994). Wetland Resources Policy. NRDFG.

City or Eureka. (1999). City or Eureka General Plan and Policy Document. Eureka:City of Eureka.

Environmental Laboratory. (1987). *Corps of Engineers Wetland Delineation Manual.* Technical Report Y-87-1. Vicksburg: U.S. Army Engineers Waterways Experiment Station.

Hickman, J.C., ed. (1993). *The Jepson Manual, Higher Plants of California*. Berkeley: University of California Press.

Kollmorgen Instruments Corporation. (1990). *Munsell Soil Color Charts*. Baltimore: Macbeth Division of Kollmorgen Instruments Corporation.

McLaughlin James and F. Harradine. (March 1966). *Soils of Coastal Del Norte County California*. Davis: UC Davis, Department of Soils and Plant Nutrition and County of Del Norte County, California.

National Oceanic & Atmospheric Administration. (viewed January 2007). NOAA online weather data, years 1971-2000. http://nowdata.rcc.acic.org/EKA/pubACIS_results. NR:NOAA.

Oregon Department of State Lands. (2005). *Wetland Delineation Report Guidelines July 2005*; Oregon Department of State Lands, Portland District Corps of Engineers, U.S. Environmental Protection Agency, Region 10- Interagency Wetland Delineation Report Guidance. Viewed at http://www.oregon.gov/DSL/PERMITS/docs/wet_det_rpt_guidance.pdf

U.S. Department of the Interior. (1987). "National Wetland Inventory Map," Eureka California Quadrangle. U.S. Department of the Interior Fish and Wildlife Service. Downloaded on 12-23-2006 at http://www.fws.gov/nwi/.

U.S. National Ecology Research Center. (1988). National List of Plant Species That Occur in Wetlands: California (Region 0). Biological Report 88(26.10), Springfield:U.S. Dept. of Commerce, National Technical Information Center.

U.S. Geological Survey. (1972). 7.5-minute USGS Quadrangle Map: Eureka, California. NR:USGS.

Attachment 1

Wetland Delineation Data Forms

Sample point 1 NC - WET

GPS SOIL PIT 1.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River - Northern Corridor Applicant/Owner: CITY OF EUREKA Investigator: ACLD & MHT	Date: 7/10/2006 County: Hum State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Willow-shrub emergent Transect ID: Plot ID: 1NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Equisetum arvense	H	FAC	9.		
2. Rubus ursinus	H	FACW*	10.		
3. Aster chilensis	H	FAC	11.		
4. Athyrium felix-femina	H	FAC	12.		
5. Aster chilensis	H	FAC	13.		
6. Salix sitchensis	T	FACW*	14.		
7. Morina californica	S	FAC+	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/7 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)

Depth to Free Water in Pit: N/A (in.)

Depth to Saturated Soil: ENTIRE PROFILE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: At Peak of Wet Season, STANDING WATER would be in pit

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	C	10YR 2/1	N/A	N/A	LOAM
1-12	A	10YR 2/1	N/A	N/A	SAND
12-16	B	10YR 3/1	① Gley1 3/5G	Abundant/w/contrast	SAND
			② 7.5YR 3/6	" " "	" "

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: DARK PROFILE

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Sample point B-NC-WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Wildlife trail - Crowley North Applicant/Owner: City of Eureka Investigator: AW, MH, JMA	Date: 7-10-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Herbaceous Transect ID: Plot ID: B NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Anthoxanthum odoratum	H	FACU	10.		
3. Carex densa	H	FACW	11.		
4. Rubus ursinus	H	FACW*	12.		
5. Rubus discolor	S	FACW*	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/5 = 80%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches 11-06
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no hydrology at this time of year but is probably inundated for at least 5% of year. Due to low-lying topography (confirmed during November 2006 site visit)

SOILS

Map Unit Name (Series and Phase): _____ Drainage Class: well-drain

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-9"	A_1	10YR 3/2	—	—	sand
9-16"	A_2	10YR 4/3	—	—	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: soil consists of river rock & rail road ties w/in upper 6" - evidence of historic fill. No organic streaking no redox features

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (circled)	No (Circle)
Wetland Hydrology Present?	Yes (circled)	No
Hydric Soils Present?	Yes (circled)	No

(Circle)

Is this Sampling Point Within a Wetland? Yes (circled) No

Remarks: hydrology confirmed during the wet season.

Approved by HQUSACE 3/92

sample point 3A NC - upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River - Homeless Zone Applicant/Owner: Investigator: ACW & MVH	Date: 11-29-06 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: herbaceous Transect ID: Plot ID: 3A NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Agrostis sp.	H	—	9.		
2. Anthoxanthum odoratum	H	FACU	10.		
3. Juncus lesguri	H	FACW	11.		
4. Rubus discolor	S	FACW*	12.		
5. Briza maxima	H	UPL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/4 = 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available	Wetland Hydrology Indicators: N/A Primary Indicators: ___ Inundated ___ Saturated in Upper 12 Inches ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: ___/___ (in.) Depth to Free Water in Pit: ___/___ (in.) Depth to Saturated Soil: ___/___ (in.)	Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches none ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test — FAILS ___ Other (Explain in Remarks)

Remarks: no hydrology indicators. Soil moist from recent rain

GPS file | Elk River WT verification | ERWT-3A | sample point

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10YR 4/2	—	—	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: uniform profile - no organic layer, profile development, or streaking

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Good location to put trail through not CC wetland because of the presence of UPL grass spp, no hydrology, and low chroma is only a function of parent material - not from hydric soil conditions

Dominant

Approved by HQUSACE 3/92

Sample Point 23 NC-WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Homeless Zone Applicant/Owner: Investigator: ACW & MUH	Date: 11-29-06 County: State:
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: herb/shrub mix Transect ID: Plot ID: 3B NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Rubus discolor	S	FACW*	10.		
3. Juncus bufonius	H	FACW	11.		
4. Rubus ursinus	H	FACW*	12.		
5. Cytisus scoparius	S	UPL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/5 = 90%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches (inferred)
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Peak of wet season pit would be inundated but is dry now because sand is well drained

[ERWT-3B]

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 3/1	—	—	SAND
3-16"	B	10YR 4/2	—	—	SAND

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: This is a wetland compared to 3A because there are OBL plants, only 1 UPL spp, 90% are hydrophytes, more developed profile (2 horizons); explanation for lack of hydro indicators is we are not at peak of wet season and soil is well drained.

Approved by HQUSACE 3/92

Sample point 4 NC - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River W.T. - Crowley north Applicant/Owner: Investigator: ACW, MVH, JMA	Date: 7-10-06 & 11-29-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Scrub-Shrub Transect ID: Plot ID: 4 NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Salix sitchensis	T	FACW*	10.		
3. Lonicera involucrata	S	FAC	11.		
4. Rubus ursinus	H	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Soil was saturated in November site visit.

Remarks: Inferred hydrology for at least 5% of g.s. Soil was saturated in upper 12" during November site visit.

SOILS

Map Unit Name (Series and Phase): _____ Drainage Class: well drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"	A_1	10YR 2/1	—	—	Sand
8-12"	A_2	10YR 5/1	—	—	Sand
12-16"	A_3	Gley 2 5/5pb	7.5YR 3/4	abundant/lots of contrast	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Algal crust in vicinity of sample point

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No	(Circle)

Remarks: Habitat in vicinity of soil pit has been degraded due to human encampments and associated debris.

Approved by HQUSACE 3/92

Sample Point 5NC - upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

11-29-06

Project/Site: Elk River W.T./Crowley North Applicant/Owner: City of Eureka Investigator: ARD, MUR, TMA	Date: 7-10-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Scrub-shrub Transect ID: Plot ID: 5NC

West side of encampment

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	S	FACW	9.		
2. Anthoxanthum od.	H	FACU	10.		
3. Foeniculum vulgare	H	FACU	11.		
4. Rubus ursinus	H	FACU*	12.		
5. Rubus discolor	S	FACU*	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/5 = 60%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators: N/A

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no evidence of hydrology during both July and November site visits (except FAC-neutral passed)

SOILS

Map Unit Name (Series and Phase): _____ Drainage Class: well - drained

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-110"	A	10YR 3/1	—	—	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: soil is 5/2 when dry but 3/1 when

verified on 11/29/06 visit

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: 7/10/06 recheck pit during wet weather season. If there is still no evidence of hydrology, then this willow thicket will be delineated as ESHA.

Approved by HQUSACE 3/92

11-29-06 Sand is moist (recent rain events) but otherwise no evidence of hydrology - Not a wetland but is ESHA. Soil is very well drained, no streaking, some organic layer on top so profile is developing but not sufficient enough to be delineated as wetland

Sample point 6NC-WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River WET/Crowley north
Applicant/Owner: City of Eureka
Investigator: ACW, MWH, SMM

Date: 7-10-06
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: herb
Transect ID:
Plot ID: 6NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Salix lasiolepis	S	FACW	10.		
3. Anthoxanthum odr.	H	FACU	11.		
4. Rubus ursinus	H	FACU*	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/4 = 75%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches (confirmed during 11/06 visit)
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: soil is more moist than SP-5 but doesn't have mottles like the Scrub-Shrub areas

Likely inundated for at least 5% of growing season

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	10YR 4/2	—	—	Sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: Hydrology was confirmed during November 2006 site visit.

Approved by HQUSACE 3/92

Sample Point 6B UPLAND

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Trail/Crowley North Applicant/Owner: City of Eureka Investigator: ACW & MHT	Date: 11-29-06 County: State:
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: herbaceous Transect ID: Plot ID: 6B NC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ammophila arenaria	H	UPL	9.		
2. Anthoxanthum odoratum	H	FACU	10.		
3. Carex sp.	H	—	11.		
4. Holcus lanatus	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/3 = 33%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators: N/A

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

sample point

no hydrology, probably not even at peak of wet season

ERWT-6B

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"	A	10YR 3/2	—	—	sand
2-16"	B	10YR 4/3	—	—	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	
		(Circle)
Is this Sampling Point Within a Wetland?		Yes (No)

Remarks:

Entire region has low chroma, so the presence of low chroma soil alone should not qualify as a 1-parameter wetland. Dominant plants are UPL spp.

No evidence of hydrology during the wet season.

Approved by HQUSACE 3/92

Sample point 7 NL-WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Trail/Crowley North Applicant/Owner: City of Eureka Investigator: Acwa Mint	Date: 11-29-06 County: State:
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Palustrine herbaceous emergent Transect ID: Plot ID: 7

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Salix sitchensis	T	FACW*	10.		
3. Rubus ursinus	H	FACW*	11.		
4. Holcus lanatus	H	FAC	12.		
5. Cytisus scoparius	S	UPL	13.		
6. Carex sp	H	—	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/6 = 83%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 12" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: ERWT-7 Sample point

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 3/1	—	—	sand
4-12	B	10YR 4/2		—	"
12-13	PAN	10YR 2/1		—	sand w/ organic
13+		10YR 4/2		—	component "

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: organic pan 12-13", different matrix color & some organics in it

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:
This sample point represents the mapped Carex obnupta wetland addition

Approved by HQUSACE 3/92

Start of Crowley site delineation Sample Point 1 SC - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley / Elk River Wildlife Trail
Applicant/Owner: City of Eureka
Investigator: Allard Smith

Date: 7-31-06 / 11-30-06
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? Yes (circled) No
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)
Is the area a potential Problem Area? Yes No (circled)
(If needed, explain on reverse.)

Community ID: herbaceous
Transect ID:
Plot ID: TSC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Potentilla anserina	H	OBL	9.		
2. Juncus balticus	H	OBL	10.		
3. Atriplex patula	H	FACW	11.		
4. Triglochin maritimum	H	OBL	12.		
5. Polygonum monspeliensis	H	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: 11-30-2006 Revisit soil pit 1 has standing water 1-6" on surface

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	O	—	—	—	organic
1-8"	A_1	10YR 3/1	7.5YR 3/4	abundant medium contrast	silty sand
8-16"	A_2	6Gley1 3/10Y	7.5YR 3/4	abundant medium contrast	" "

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: upper 8" 10YR 3/1
8"-16" 6Gley1 3/10Y but no distinct change in profile between the two matrix colors

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes) No		
Hydric Soils Present?	(Yes) No	Is this Sampling Point Within a Wetland?	(Yes) No

Remarks:

Approved by HQUSACE 3/92

Sample Point 2SC - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cowlen South / Elk River Trail Applicant/Owner: City of Eka Investigator: MVH & ACW	Date: 7-31-06 / 11-30-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: herb Transect ID: Plot ID: 2 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Mentha Pulegium	H	OBL	9.		
2. Cyperus eragrostis	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: plant Coverage 50%; Bareground 50%. Salix spp trying to germinate but goats have eaten most seedlings

HYDROLOGY

___ Recorded Data (Describe in Remarks): ___ Stream, Lake, or Tide Gauge ___ Aerial Photographs ___ Other ___ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: X Inundated 11-30-06 X Saturated in Upper 12 Inches 11-30-06 ___ Water Marks ___ Drift Lines ___ Sediment Deposits ___ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ___ Oxidized Root Channels in Upper 12 Inches ___ Water-Stained Leaves ___ Local Soil Survey Data ___ FAC-Neutral Test ___ Other (Explain in Remarks)
Field Observations: 11/30/06 Depth of Surface Water: to surface (in.) Depth to Free Water in Pit: to surface (in.) Depth to Saturated Soil: to surface (in.)	

Remarks: No evidence of hydrology but it likely inundated (ponded) for at least 5% of growing season

revisit on 11-30-06. This area is saturated to surface. GPS Mentha wetland

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12"	A	2.5Y 3/1	—		sandy loam w/ river gravel

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: soil is heavily compacted 0" w/ crusty surface

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
		(Circle)
Is this Sampling Point Within a Wetland?		Yes No

Remarks:
* Due to extremely dry soil, any evidence of oxidized rhizospheres is obscured

Approved by HQUSACE 3/92

other evidence of disturbance are tire tracks, goat grazing, herbicide, and fire scars.
11/30/06 jurisdictional wetland, saturated to surface

Sample point SSC - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

South

Project/Site: Crowley site / Elk River Trail
Applicant/Owner: City of Eureka
Investigator: Arcata MGH

Date: 8-1-06
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Scrub-Shrub
Transect ID: 1
Plot ID: 3 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eragrostis	H	FACW	9.		
2. Athyrium felix-femina	H	FAC	10.		
3. Rubus ursinus	H	FACW*	11.		
4. Alnus rubra	T	FACW	12.		
5. Salix sitchensis	T	FACW+	13.		
6. Ranunculus repens	H	FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/6 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 16" (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Soil moist @ 16" w/ shake test - assumed to be inundated for atleast 5% of g.s.

11-30-2006 - Conditions the same - no standing water

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	O				organic
1-10"	A_1	10YR 2/2	—	—	Sandy loam
10-16"	A_2	10YR 2/2	6Gy1 3/10Y 5/10YR 3/4	Abundant / subtle contrast	Sandy loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: no mottles w/in upper 10" but are abundant 10-16"

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (circled)	No (Circle)
Wetland Hydrology Present?	Yes (circled)	No
Hydric Soils Present?	Yes (circled)	No

(Circle)
Is this Sampling Point Within a Wetland? Yes (circled) No

Remarks:
Soil pit is near disturbed area (i.e. covered slab and lots of wood mulch, which makes it significantly disturbed)

Approved by HQUSACE 3/92

Sample point 4 SC upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

South

Project/Site: Crowley/ Elk River	Date: 8-1-06 / 11-30-06
Applicant/Owner: City of Eka	County: Humboldt
Investigator: Acid & MVH	State: CA
Do Normal Circumstances exist on the site? **Yes** No	Community ID: herb/shrub
Is the site significantly disturbed (Atypical Situation)? Yes **No**	Transect ID: 1
Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Plot ID: 4SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lucida	S	NI	9.		
2. Rubus discolor	S	FACW*	10.		
3. Alnus rubra	T	FACW	11.		
4. Agrostis stolonifera	H	FACW	12.		
5. Salix sitchensis	S	FACW+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/4 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators: N/A

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no redox - soil not saturated
11-30-06 recheck hydrology - no evidence

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	O	—	—	—	organic
1-16"	A	10YR 3/2	—	—	gravelly loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: soil contains unsorted rock - evidence of disturbance

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (circled)	No (Circle)
Wetland Hydrology Present?	Yes	No (circled)
Hydric Soils Present?	Yes (circled)	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No (circled)

Remarks: No hydrology detected at either site visit. Low chroma is a function of the soils throughout the region and by itself is not a reliable enough indicator of the presence of hydric soil. Soils have been significantly disturbed and there is no historic or current evidence of redox features.

Approved by HQUSACE 3/92

Sample point 5 SC upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley/Elk River Trail Applicant/Owner: City of Eureka Investigator: ACW & MJH	Date: 8-1-06 / 11-30-06 County: Humboldt State: CA.
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? **Yes** No Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: herbaceous Transect ID: I Plot ID: 5 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus ursinus	H	FACW*	9.		
2. Epilobium ciliatum	H	FACW	10.		
3. Holcus lanatus	H	FAC	11.		
4. Salix sitchensis	S	FACW+	12.		
5. Salix lucida	S	NI	13.		
6. Alnus rubra	S	FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators: n/a

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

no hydrology indicators, sample point rechecked 11-30-06, again no hydrology.

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1/2"	O				organic
1/2-10"	A	10YR 3/2			gravelly loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: a lot of gravel/disturbance

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (circled) No	(Circle)
Wetland Hydrology Present?	Yes No (circled)	
Hydric Soils Present?	Yes (circled) No	Is this Sampling Point Within a Wetland? Yes No (circled)

Remarks: Vegetation (Salix) has been recently grazed by goats but is still identifiable. See remarks for sample point 4SC, which explains why this point isn't in a wetland

Approved by HQUSACE 3/92

Sample point 6 SC - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ELK RIVER - CROWLEY South
Applicant/Owner: CITY OF EUREKA
Investigator: MWH, AW

Date: 8/1/06 / 11-30-06
County: Hum
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: herb/scrub shrub
Transect ID: 2
Plot ID: #6 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus ursinus	H	FACW*	9.		
2. Rubus discolor	H	FACW*	10.		
3. Equisetum arvense	H	FAC	11.		
4.			12.		
5. Alnus rubra	T	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 14 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: 11-30-06 recheck sample point, Saturated within upper 12 inches.

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 2/2	N/A	N/A	LOAM

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: 1/2" ORGANIC MATTER AT TOP OF PROFILE

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No	(Circle)

Remarks: SAMPLE POINT would ~~be~~ likely be inundated during PEAK OF RAINY SEASON - This is the point on transect closest to fence / RAILROAD in mature alder grove.

Approved by HQUSACE 3/92

11-30-2006 - Some standing water in low/depressions within alder grove.

Sample point 7 SC 2 wet

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ELK RIVER/CROWLEY SITE
Applicant/Owner: CITY OF EUREKA
Investigator: MVM / AW

Date: 8-1-06
County: HUM
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Alder Stand
Transect ID: 2
Plot ID: #7 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus discolor	H	FACW*	9.		
2. Rubus ursinus	H	FACW*	10.		
3. Equisetum arvense	H	FAC	11.		
4. Agrostis exerata	H	FACW	12.		
5. Ranunculus repens	H	FACW	13.		
6. Alnus rubra	T	FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches 11-30-06
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Probably saturated at peak of wet season

11-30-2006 Some standing water in low/depressions within alder grove.

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	N/A	N/A	LOAM

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: SOME UNSORTED ROCK in soil profile. Soil Pit adjacent to old ROAD BASE and Fence.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?	Yes No (Circle)	

Remarks: See above - ~~[illegible]~~ soil pit has sign of previous disturbance but probably occured more than 5 years ago so its not significantly disturbed.

* At Peak of wet season or for 5% of growing season this location/Soil pit would qualify for ~~[illegible]~~ Jurisdictional wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	South Crowley / Elk River W.T	Date:	8/1/06 & 11/30/06
Applicant/Owner:	City of Eureka	County:	Humboldt
Investigator:	MVH & VACW	State:	CA.

Do Normal Circumstances exist on the site?	Yes	(No)	Community ID:	Riparian/Scrub-shrub
Is the site significantly disturbed (Atypical Situation)?	(Yes)	No	Transect ID:	2
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:	8 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus ursinus	H	FACW*	9.		
2. Rubus ulmifolius	S	FACW*	10.		
3. Agrostis exarata	H	FACW	11.		
4. Equisetum arvense	H	FAC	12.		
5. Alnus rubra	T	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (In.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: 14" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:
Soil saturated at 14" during dry season. Site visit on 11-30-06 confirmed presence of water in some low spots / depressions within alder grove.

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class _____

Field Observations

Taxonomy (Subgroup) _____ Confirm Mapped Type? Yes No

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10YR 3/4	5YR 3/4	not very abundant/ with contrast	Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks soil has been historically disturbed. Sample point is located between old building foundation and old road (based on location of fence).

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No (Circle)
Hydric Soils Present? Yes No * See above & below
Is this Sampling Point Within a Wetland? Yes No

Remarks
Transect #2, sample points 7 and 8 are bisected by upland road prism. Pit was not dug on old road prism due to a dominance of upland species

Approved by HQUSACE 3/92

Although soil does not have low chroma, this point was determined to be a wetland due to the presence of redox features (rhizospheres and mottles) and presence of hydrology.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Crowley South - Elk River Trail	Date:	8-1-06
Applicant/Owner:	City of Eureka	County:	Humboldt
Investigator:	ACW & MWH	State:	CA

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID:	Emergent Herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:	9 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Potentilla anserina	H	OBL	9.		
2. Oenanthe sarmentosa	I	OBL	10.		
3. Holcus lanatus	I	FAC	11.		
4. Agrostis exarata	I	FACW	12.		
5. Juncus balticus	I	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: >10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels In Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain In Remarks)

Remarks: Hydrology present during dry season. This portion of the southern Crowley property doesn't need to be rechecked during the wet season.

SOILS

Map Unit Name
(Series and Phase): _____

Drainage Class _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-1/2"	O				organic
1/2-10"	A	10YR 3/2	2.5YR 4/8	abundant/contrasted	sandy
10-16"	B	Gley1 3/5G	2.5YR 4/8	" "	"

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley Elk River Trail	Date: 8-1-06
Applicant/Owner: City of Eureka	County: Humboldt
Investigator: ACW & MVH	State: CA

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID: Herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID: 10 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus discolor	S	FACW+	9.		
2. Anthoxanthum odoratum	H	FACU	10.		
3. Juncus leesii	H	FACW	11.		
4. Equisetum arvense	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 3/4 = 75%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: / (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

no hydrology indicators

SOILS

Map Unit Name
(Series and Phase): _____

Drainage Class _____

Field Observations

Taxonomy (Subgroup) _____

Confirm Mapped Type? Yes No

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 4/3	—	—	sandy/silty fine texture

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks no hydric soil indicators

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No (Circle)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks Sample point has historical disturbance due to pond/berm, but that disturbance was some time ago that upland indicators are indicative of normal conditions

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	South Crowley / Elk River Trail	Date:	8-1-06
Applicant/Owner:	City of Eureka	County:	Humboldt
Investigator:	ACW & MVH	State:	CA.

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID:	Scrub-shrub/ Herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:	11 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Equisetum arvense	H	FAC	9.		
2. Holcus lanatus	1	FAC	10.		
3. Polypogon monspeliensis	1	FACW+	11.		
4. Rubus ursinus	1	FACW*	12.		
5. Salix lasiolepis	S	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 10" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____

Drainage Class _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0 - 1/2"	O	—	—		Organic
1/2 - 8"	A	10YR 2/2	10YR 3/4	Abundant/Strong/Contrast	Sandy
8 - 16"	B	Gley 2 4/10gy	2.5YR 3/6	" "	sandy

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- X Aquic Moisture Regime
- Gleyed or Low-Chroma Colors
- ____ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks
Sample point representative of Palustrine scrub-shrub vegetation community that extends east beyond the Study Area

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley / Elk River Trail	Date: 8-1-06
Applicant/Owner: City of Eureka	County: Humboldt
Investigator: ACW & MVH	State: CA

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID: Herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID: 12 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Potentilla anserina	H	OBL	9.		
2. Rubus ursinus	I	FACW*	10.		
3. Holcus lanatus	I	FAC	11.		
4. Anthoxanthum odor.	I	FACU	12.		
5. Ranunculus repens	I	FACW	13.		
6. Rubus discolor	S	FACW*	14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 5/6 = 83%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: 8" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Based on topography (abandoned pond) sample point is inundated at least at the peak of the wet season, is not the majority of it.

SOILS

Map Unit Name
(Series and Phase): _____

Drainage Class _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-1"					organic
1-10"	A1	10YR 4/2	*		sand
10-11½"	A2	10YR 3/2	*		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer In Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks * mottles abundant but too small to differentiate color

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks
Based on similar vegetation in abandoned pond to the west, hydric soils & hydrology observed at this sample point are extrapolated to western pond.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	South Crowley - Elk River Trail	Date:	11-30-06
Applicant/Owner:	City of Eureka	County:	Humboldt
Investigator:	ACW & MVH	State:	CA

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID:	herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:	
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:	13 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Agrostis sp.	H	—	9.		
2. Juncus leiseri		FACW	10.		
3. Rumex acetosella		FAC-	11.		
4. Holcus lanatus		FAC	12.		
5. Trifolium repens		FACU+	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 2/4 = 50%

Remarks:
Plants are a function of the wet maritime climate. A few hydrophytes without reliable soil and hydrology indicators is not substantial enough to delineate as wetland.

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: ____ (in.)
- Depth to Free Water in Pit: ____ (in.)
- Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test — FAILS
- ____ Other (Explain in Remarks)

Remarks: no evidence of ponding, inundation, saturation or other hydrology indicators

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class _____
Field Observations
Taxonomy (Subgroup) _____ Confirm Mapped Type? Yes No

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14"	A	10YR 2/1			fill
14-16"	A/B	10YR 4/2			"

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks non-native soils, fill material consisting of unconsolidated rocks, rubble, gravel, and wood chips - even at 16"

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks Substantial fill prism. Sample point taken at presumably wettest spot in this disturbed habitat. No evidence suggesting a trend towards developing wetland conditions. Vegetation along east side of South Crowley access road, which is ± 24" lower in elevation than west side, does not have as significant of fill prism and is dominated by hydrophytes.

Approved by HQUSACE 3/92

Sample point 14 SC upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

South

Project/Site: Crowley Site / Elk River Trail Applicant/Owner: City of Eureka Investigator: ACW & MVH	Date: 11-30-06 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? (Yes) No (If needed, explain on reverse.) Fill	Community ID: herb/shrub Transect ID: Plot ID: 14 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Equisetum arvense	H	FAC	9.		
2. Rubus discolor	/	FACW	10.		
3. Rubus ursinus	/	FACW	11.		
4. Fuschia sp	/	NI	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3 = 100 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators: N/A

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no hydrology indicators

ERWT-Crowley 14

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	10YR 3/2	—	—	loam
hit concrete @ 12"					

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:
not saturated but moist / not native soil fill unconsolidated rubble w/ concrete

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
Is this Sampling Point Within a Wetland?		(Circle) Yes No

Remarks:
This soil pit represents the fill prism on which hydrophytes have established due to the wet coastal climate but has no evidence of hydrology and the low chroma soil is not a good enough indicator (need some reducing conditions to support as a wetland).

Approved by HQUSACE 3/92

• This sample point is potential problem area because natural conditions may be altered on top of a concrete slab.

Sample Point #5 SC - 0527

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley Site / Elk River Trail Applicant/Owner: City of Eureka Investigator: ACW & MKH	Date: 11-30-06 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Scrub-Shrub Transect ID: Plot ID: 15SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix sitchensis	S	FACW+	9.		
2. Juncus effusus	H	OBL	10.		
3. Epilobium ciliatum		FACW	11.		
4. Agrostis stolonifera		FACW	12.		
5. Ranunculus repens		FACW	13.		
6. Triglochin maximum		FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 5" (in.)

Depth to Free Water in Pit: 5" (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

0-1" organic layer

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8"	A	10YR 2/1	—	—	Sandy loam
8-12+	B	10YR 3/1	10YR 4/3	abundant/prominent	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Soil horizons difficult to distinguish due to water in pit

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Sample point 16 SC - wet

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

South

Project/Site: Crowley Site / Elk River Trail Applicant/Owner: City of Eureka Investigator: ACW & MWH	Date: 11-30-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? Yes **No** Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Scrub-shrub Transect ID: Plot ID: 16 SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Alnus rubra	S/T	FACW	9.		
2. Salix lucida	T	NI	10.		
3. Lonicera involucrata	S	FAC	11.		
4. Rubus discolor	S	FACW*	12.		
5. Rubus ursinus	H	FACW*	13.		
6. Juncus balticus	H	OBL	14.		
7. Epilobium ciliatum	H	FACW	15.		
8. Oenanthe sarmentosa	H	OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/7 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 7" (in.)

Depth to Free Water in Pit: 7" (in.)

Depth to Saturated Soil: 0 Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2"	O	10YR 2/1	—	—	organic
2-6"	A	10YR 2/1	—	—	sandy
6-16"	B	Gley1 3/10Y	10YR 5/1	abundant/prominent	sandy

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: upper couple inches of soil pit may have debris (wood chips from veg clearing w/in last 5-10 yrs but otherwise soils appear intact / native

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	
		(Circle)
Is this Sampling Point Within a Wetland?		Yes No

Remarks:

Approved by HQUSACE 3/92

Sample point 1/SC upland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: South Crowley / Elk River Trail Applicant/Owner: City of Eureka Investigator: ADW & MVH	Date: 11-30-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Scrub-shrub/herbaceous Transect ID: Plot ID: 1SC

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Geranium molle	H	UPL	9.		
2. Agrostis stolonifera		FACW	10.		
3. Rubus ursinus		FACU	11.		
4. Anthoxanthum odoratum		UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/4 = 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators: N/A

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no hydrology

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR 4/1			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Soil is road prism fill

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (Circle)	No
Wetland Hydrology Present?	Yes	No (Circle)
Hydric Soils Present?	Yes (Circle)	No

(Circle)
Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks:
Could only dig pit 4" because this is the road fill (road fill prism in front on old gate - road divides the ATRU stand)

Approved by HQUSACE 3/92

only meets hydric condition because of low chroma but no evidence of reducing conditions or hydrology.

Sample point 8 PARK/LAND - WET

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River West side of Hilliker Applicant/Owner: City of Eureka Investigator: ACW & MWH	Date: 11-29-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? **Yes** No Is the site significantly disturbed (Atypical Situation)? **Yes** No Is the area a potential Problem Area? Yes **No** (If needed, explain on reverse.)	Community ID: Herb Transect ID: Plot ID: 8 PLA

VEGETATION

Associate

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex pansa	H	FACU	9. Daucus carota	H	
2. Juncus patens	H	FAC	10. Hypochaeris radicata	H	
3. Holcus lanatus	H	FAC	11. Nemophila arenaria	H	
4. Juncus leseurii	H	FACW	12. Vicia sp.		
5. Anthoxanthum odoratum	H	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/5 = 66 %

Remarks: Area mowed. No inflorescence on C. pansa

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: / (in.)

Depth to Free Water in Pit: / (in.)

Depth to Saturated Soil: 1/2" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: inundated at peak of wet season

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4"	A	10YR 3/2	—	—	sand
4-16"	B	10YR 4/2	—	—	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No	(Circle)
Wetland Hydrology Present?	Yes	No	
Hydric Soils Present?	Yes	No	

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:
sample point is located in a depression. Just downslope from sample point 8BPLA, vegetation is dominated by upland herbaceous species.

Approved by HQUSACE 3/92

SAMPLE POINT 8b - UPLAND

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Wildlife Trail/Parking Applicant/Owner: City of Eureka Landscape Area Investigator: ACW & MVH	Date: 11-29-06 County: Humboldt State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Herbaceous Transect ID: Plot ID: 8b PLA

VEGETATION

Associates

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ammannia arenaria	H	UPL	9. Daucus carota	H	UPL
2. Grindelia stricta	H	FACW	10. Hypochaeris radicata	H	UPL
3. Juncus leseurii	H	FACW	11. Vicia sp.		—
4. Rumex acetosella	H	FAC-	12.		
5. Anthox odoratum	H	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/5 = 40%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: no hydrology

ERWT-8B SAMPLE POINT

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	A	10 YR 3/2	—	—	sand
1-16"	B	10 YR 5/2	—	—	"

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Sand not saturated unlike 8 - clearly UPL

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Approved by HQUSACE 3/92

Attachment 2

Study Area Photos

Photo 1. Photo 1 shows the northern industrial yard with ruderal vegetation, historic and ongoing disturbance, and a lack of wetland habitat. Photo taken by SHN on 11-29-2006, orientation is to the south.

Photo 2. Photo 2 shows the willow dominated Palustrine scrub-shrub wetland on the northern Crowley property portion of the study area. Photo taken by SHN on 11-29-2006, orientation is to the east.

Photo 3. In the foreground (green arrow), slough sedge is dominant similar to sample points 2 NC, 3B NC, 6 NC and 7 NC, whereas sample point's 3A NC, 6B NC, and 5 NC are upland sample points (red arrow). Photo taken by SHN on 11-29-2006, orientation is to the south.

Photo 4. Willow dominated (Palustrine scrub-shrub) portions of the study area were degraded due to human encampments and debris.

Photo 5. A small depression on the compacted fill prism holds water long enough to support a small wetland dominated by penny-royal (*Mentha pulegium*). Photo taken by SHN on 7-31-2006, orientation is to the south.

Photo 6. Sample point 1 SC is dominated by obligate hydrophytes, remains wet year round, and exhibits well developed hydric soils. Photo taken by SHN on 7-31-2006, orientation is to the south.

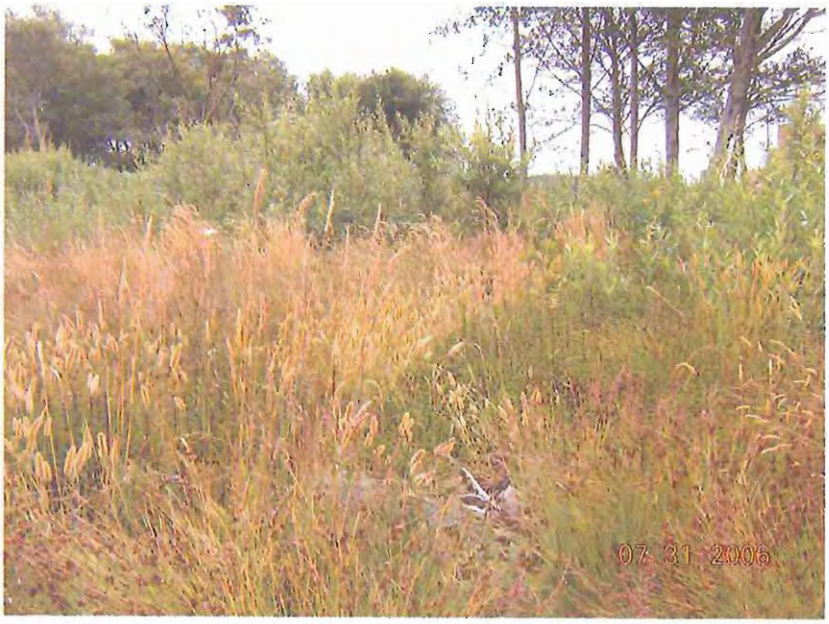

Photo 7. Sample point 15 SC is dominated by obligate hydrophytes, but also was hand cleared of willows within the last five years. Photo taken by SHN on 7-31-2006, orientation is to the south.

Photo 8. Wetland boundaries at sample point 4 SC and 5 SC were difficult to discern due to relatively recent disturbance and goat grazing. Photo taken by SHN on 7-31-2006, orientation is to the north.

Photo 9. Remnant industrial infrastructure remains at several wetland locations on the southern Crowley property. Photo taken at sample points 16 SC and 17 SC just north of sample points 6 SC through 8 SC. Photo taken by SHN on 7-31-2006, orientation is to the south.

Photo 10. All three characterizations points (9 SC, 10 SC, and 12 SC) are dominated by hydrophytes, hydrology is evident, and hydric soils are present including gley horizons in the profile. Photo taken by SHN on 7-31-2006, orientation is to the south.

Photo 11. Two cattail-dominated ponds occur on the south Crowley property. The soil removed to create these depression forms the upland berm enclosing each pond. Photo taken by SHN on 7-31-2006, orientation is to the south.

Appendix B

Species List

Species List Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Alnus rubra	red alder	1
Eucalyptus globulus	blue gum	1
Ilex aquifolium	English holly	1
Malus fusca	Oregon crab apple	1
Pinus attenuata	knobcone pine	1
Pinus contorta ssp. *contorta*	beach pine	1
Pseudotsuga menziesii var. *menziesii*	Douglas-fir	1
Rhamnus purshiana	cascara	1
Salix hookeriana	Hooker's willow	1
Salix lasiolepis	arroyo willow	1
Salix sitchensis	Sitka willow	1
Sequoia sempervirens	coast redwood	1
Baccharis pilularis	coyote brush	2
Cytisus scoparius	Scotch broom	2
Gaultheria shallon	salal	2
Genista monspessulana	French broom	2
Lonicera involucrata var. *ledebourii*	black twinberry	2
Lupinus arboreus	yellow bush lupine	2
Myrica californica	wax myrtle	2
Ribes sanguinuem var. *glutinosum*	pink-flowering currant	2
Rosa sp.	rose	2
Rubus discolor	Himalaya berry	2
Rubus parviflorus	thimbleberry	2
Rubus spectabilis	salmonberry	2
Sambucus racemosa	red elderberry	2
Vaccinium ovatum	evergreen huckleberry	2
Abronia latifolia	yellow sand-verbena	3
Achillea millefolium	common yarrow	3
Agrostis exarata	western bent-grass	3
Agrostis sp.	bent grass	3
Agrostis stolonifera	creeping bent-grass	3
Aira caryophyllea	silver European hairgrass	3
Ambrosia chamissonis	silver burweed	3
Ammophila arenaria	European beachgrass	3
Anagallis arvensis	scarlet pimpernel	3
Anaphalis margaritacea	pearly everlasting	3
Anthoxanthum odoratum	sweet vernal grass	3
Armeria maritima ssp. californica	sea-pink	3
Artemisia sp.		3

Species List Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Aster chilensis	common California aster	3
Athyrium filix-femina	lady fern	3
Atriplex leucophylla	beach saltbush	3
Atriplex patula	spear oracle	3
Atriplex triangularis	spearscale	3
Bellis perennis	English daisy	3
Blechnum spicant	deer fern	3
Brassica nigra	black mustard	3
Briza maxima	large quaking or rattlesnake grass	3
Briza minor	small quaking or rattlesnake grass	3
Bromus spp.	brome grasses	3
Cakile maritima	sea rocket	3
Calystegia soldanella	beach morning-glory	3
Camissonia cheiranthifolia	beach primrose	3
Cardamine oligosperma	western bittercress	3
Cardionema ramosissimum	sandmat	3
Carex deweyana ssp. *leptopoda*	short-scaled sedge	3
Carex obnupta	slough sedge	3
Carex sp.	sedge	3
Chamomilla suaveolens	pineapple weed	3
Cichorium intybus	chicory	3
Cirsium arvense	Canada thistle	3
Cirsium vulgare	bull thistle	3
Claytonia sibirica	Siberian candyflower	3
Conium maculatum	poison hemlock	3
Cordylanthus maritimus ssp. *palustris*	Point Reyes bird's-beak	3
Cortaderia jubata	pampas grass	3
Crocosmia sp.	crocosmia	3
Cuscata salina	Dodder	3
Cynosurus echinatus	hedgehog dogtail grass	3
Cyperus eragrostis	nut-grass or tall flat-sedge	3
Dactylis glomerata	orchard grass	3
Daucus carota	wild carrot or Queen Anne's lace	3
Deschampsia cespitosa ssp cespitosa	tufted hair-grass	3
Digitalis purpurea	foxglove	3
Distichlis spicata	saltgrass	3
Eleocharis sp.	spike-rush	3
Epilobium ciliatum	northern willow herb	3
Equisetum arvense	common horsetail	3

Species List Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Equisetum hyemale ssp. *affine*	common scouring rush	3
Erechtites minima	toothed coast fireweed	3
Eriogonum latifolium	beach buckwheat	3
Eschscholzia californica	California poppy	3
Festuca arundinacea	tall fescue	3
Festuca rubra	red fescue	3
Foeniculum vulgare	fennel	3
Fragaria vesca	wood strawberry	3
Fuschia sp.	ornamental fuschia	3
Galium sp.	bedstraw	3
Geranium dissectum	cut-leaved geranium	3
Geranium molle	dovefoot geranium	3
Geranium sp.	geranium	3
Gnaphalium sp.	cudweed	3
Grindelia stricta	gumweed	3
Hedera helix	English ivy	3
Heracleum lanatum	cow parsnip	3
Holcus lanatus	common velvet grass	3
Hordeum jubatum	foxtail barley	3
Hypericum perforatum	Klamath weed or common St. John's-wort	3
Hypochaeris radicata	hairy cat's-ear	3
Iris douglasiana	Douglas iris	3
Jaumea carnosa	fleshy jaumea	3
Juncus balticus	Baltic rush	3
Juncus bolanderi	Bolander's rush	3
Juncus bufonius	common toad rush	3
Juncus effusus	common rush	3
Juncus ensifolius	dagger-leaf rush	3
Juncus leseurii	salt grass	3
Juncus patens	spreading rush	3
Lathyrus latifolius	everlasting pea	3
Lathyrus sp.	pea	3
Lemna sp.	duckweed	3
Lessingia filaginifolia	beach aster	3
Leucanthemum vulgare	ox-eye daisy	3
Leymus mollis	American dunegrass	3
Linum bienne	western blue flax	3
Lolium perenne	perennial ryegrass	3

Species List Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Lolum multiflorum	Italian ryegrass	3
Lonicera hispidula var. *vacillans*	hairy honeysuckle	3
Lotus corniculatus	birdfoot trefoil	3
Lotus micranthus	rose-flowered lotus	3
Lupinus bicolor	miniature lupine	3
Lysichiton americanum	skunk cabbage	3
Melilotus officinalis	yellow sweet clover	3
Mentha pulegium	pennyroyal	3
Montia parvifolia	streambank spring beauty	3
Navarretia squarrosa	skunkweed	3
Oenanthe sarmentosa	Pacific water-parsley	3
Parentucellia viscosa	yellow parentucellia	3
Petasites frigidis var. *palmatus*	western coltsfoot	3
Phalaris arundinacea	reed canary grass	3
Plantago lanceolata	English plantain	3
Plantago major	common plantain	3
Poa sp.	bluegrass	3
Polygonum arenastrum	beach knotweed	3
Polypogon monspeliensis	rabbitfoot grass or annual beard grass	3
Polystichum munitum	sword fern	3
Potentilla anserina	silverweed	3
Prunella vulgaris	self-heal	3
Pteridium aquilinum var. *pubescens*	western bracken fern	3
Ranunculus occidentalis	western buttercup	3
Ranunculus repens	creeping buttercup	3
Raphanus sativus	wild radish	3
Rorippa nasturtium-aquaticum	water cress	3
Rubus ursinus	Pacific bramble or California blackberry	3
Rumex acetosella	sheep sorrel	3
Rumex crispus	curly dock	3
Rumex salicfolius	willow dock	3
Salicornia virginica	pickleweed	3
Scirpus americanus	three-square bulrush	3
Scirpus cernuus	low club-rush	3
Scirpus microcarpus	small-flowered bulrush	3
Scrophularia californica	coast figwort	3
Senecio vulgaris	common butterweed	3
Solidago spathulata	dune goldenrod	3

Species List Elk River Wildlife Trail Improvement Project 2006 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence (1=tree, 2=shrub, 3=herb)**
Sonchus asper ssp. *asper*	prickly sow thistle	3
Spartina densiflora	cordgrass	3
Spergularia macrotheca	sandspurry	3
Stachys ajugoides	hedge nettle	3
Stachys chamissonis	Chamisso's hedge nettle	3
Tanacetum camphoratum	dune tansy	3
Trifolium pratense	red clover	3
Trifolium repens	white clover	3
Trifolium wormskioldii	springbank clover	3
Triglochin maritima	seaside arrow-grass	3
Typha latifolia	broadleaf cattail	3
Urtica dioica ssp. *holosericea*	stinging nettle	3
Verbascum thapsis	woolly mullein	3
Veronica americana	American brooklime	3
Vicia americana var. *americana*	American vetch	3
Vicia hirsuta	hairy vetch	3
Vinca major	greater periwinkle	3

Biological Resources Assessment

Phase II
Elk River Wildlife Trail Improvement Project

Prepared for:

City of Eureka

Consulting Engineers & Geologists, Inc.

812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

October 2007
006107.100

Reference: 006107.100

Biological Resources Assessment

Phase II
Elk River Wildlife Trail Improvement Project

Prepared for:

City of Eureka

Prepared by:

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812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

October 2007

QA/QC: FLC___

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Acronyms and Abbreviations

BIOS	Biogeographical Information and Observation System
BLM	Bureau of Land Management
CDFG	California Department of Fish and Game
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
ERWTIP	Elk River Wildlife Trail Improvement Project
ESHA	Environmentally Sensitive Habitat Areas
FC	Federal Candidate
FE	Federally listed Endangered
FT	Federally listed Threatened
GPS	Global Positions System
MSL	Mean Sea Level
N/A	Not Applicable
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
PALCO	Pacific Lumber Company
RCAA	Redwood Community Action Agency
SE	State listed Endangered
SHN	SHN Consulting Engineers & Geologists, Inc.
SONCC	Southern Oregon Northern California Coast
sq. ft.	square foot
SSC	Species of Special Concern
ST	State listed Threatened
TBD	To Be Determined
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WWTP	Wastewater Treatment Plant

1.0 Project Introduction and Location

On April 13, June 19, July 20, August 2, and October 4, 2007, SHN Consulting Engineers & Geologists, Inc. (SHN) conducted fieldwork for Phase II of the Elk River Wildlife Trail Improvement Project (ERWTIP). The project site is located in the west ½ of Section 33, Township 5 North, Range 1 West Humboldt Base Meridian (Figure 1). Fieldwork for Phase I of the ERWTIP was completed in 2006 and is documented in the *Biological Assessment Elk River Wildlife Trail Improvement Project*, *Eureka, California* (SHN, 2007a) and the *Wetland Delineation for the Proposed Elk River Trail Improvement Project, Eureka, California* (SHN, 2007b). Phase II of the ERWTIP focused on the existing Elk River Wildlife Trail, which is located adjacent to the northern boundary of the Eureka Wastewater Treatment Plant (WWTP) and extends south to the railroad tracks and from the railroad tracks to Herrick Avenue Park and Ride (Figure 1). Phase II includes improvements to the existing Elk River Wildlife Trail (hereafter, trail or ERWT), whereas Phase I consists of expanding the trail north. Due to the similarity in habitat types between the Phase I and Phase II of the project and the extensive assessment and analysis that was performed for Phase I, the results of Phase I work (SHN, 2007a and 2007b) are used as background for this report. Please refer to Appendix A for detailed results of the Phase II wetland delineation.

2.0 Methods

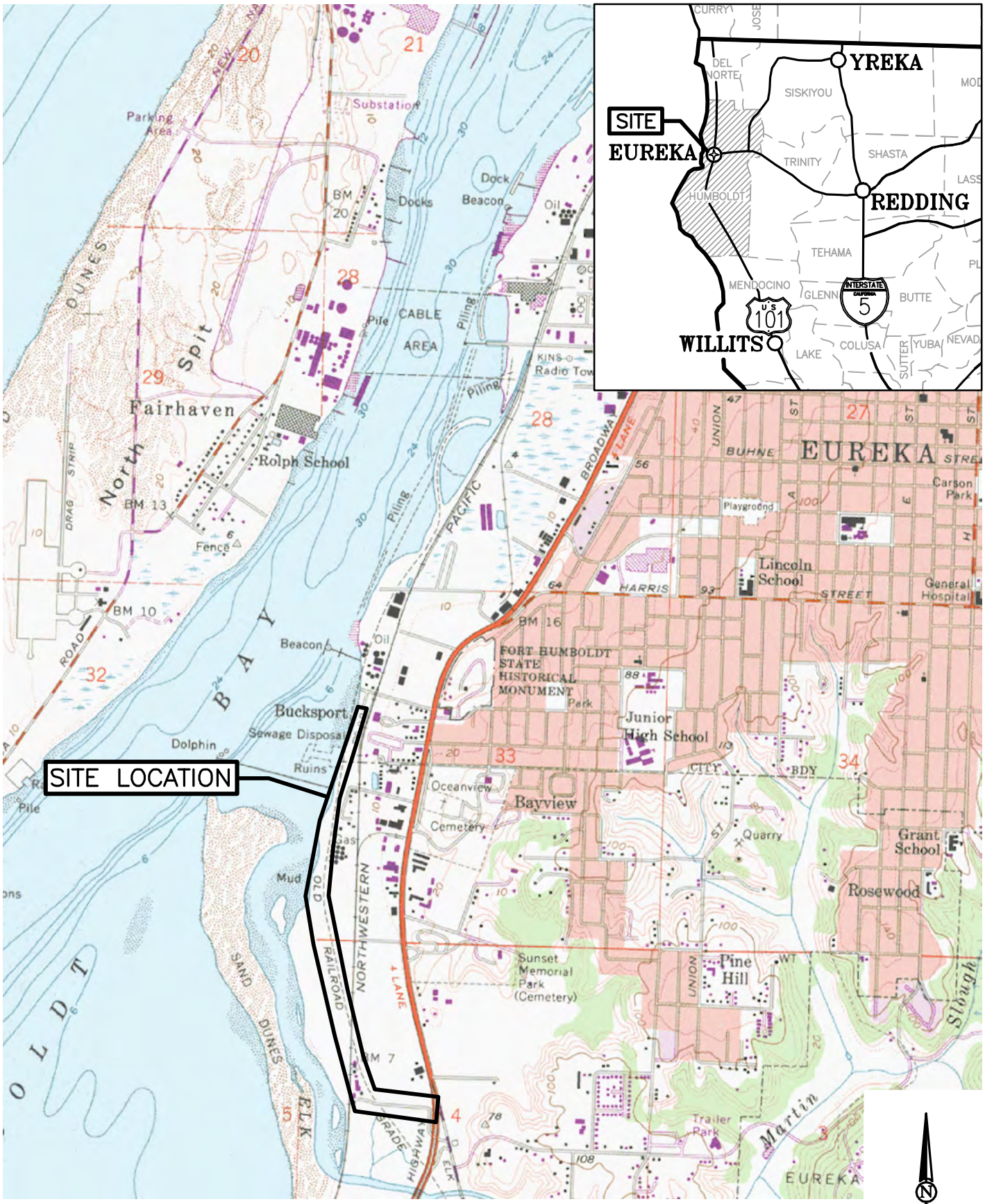
The existing trail was systematically surveyed from the northern parking lot, south to the Herrick Avenue Park and Ride. For organizational purposes, portions of the study area are referenced as the following segments: 1) the main trail, 2) footpath, 3) railroad to Pound Road parking lot, and 4) Pound Road parking lot east and south to the Herrick Avenue Park and Ride (Figure 2).

Each representative section, as identified above, was visually assessed and quantified. Important resource variables included the presence of wetlands, Environmentally Sensitive Habitat Areas (ESHA), special status plant species, important wildlife areas, and/or the degree to which vegetation would be affected to allow for trail improvements, including but not limited to widening. Refer to Appendix A for detailed results of the wetland delineation.

The area of potential effects were assessed along the main trail using a 14-foot PVC pipe (i.e., measuring rod) which represented the desired/hypothetical trail width with an additional six feet added to each end of the measuring rod to represent the actual or potential disturbance area (26-foot total width).

The footpath trail was assessed for a 4-foot trail width, with four feet added at each end of the shortened measuring rod to represent the potential or actual disturbance area (12 feet total width). The study areas were defined based on the recommendations included in the *Elk River Access Project Recommendations* (RCAA, 2002), SHN's knowledge of the trail area, and coordination with the City of Eureka. The measuring rod was not used for the portion of the study area from the Pound Road parking lot to the Herrick Avenue Park and Ride because a study area could not be defined due to existing site constraints, such as fencing; however, sensitive resources were evaluated and mapped in that portion of the project area.

Each trail segment was quantified by walking the representative trail with the measuring rod centered on, and perpendicular to the trail, with the exception of the portion from the Pound Road



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Phase II Eureka, California	Site Location Map Biological Resources Assessment SHN 006107.100
	October 2007	006107.100-LOCATION	Figure 1

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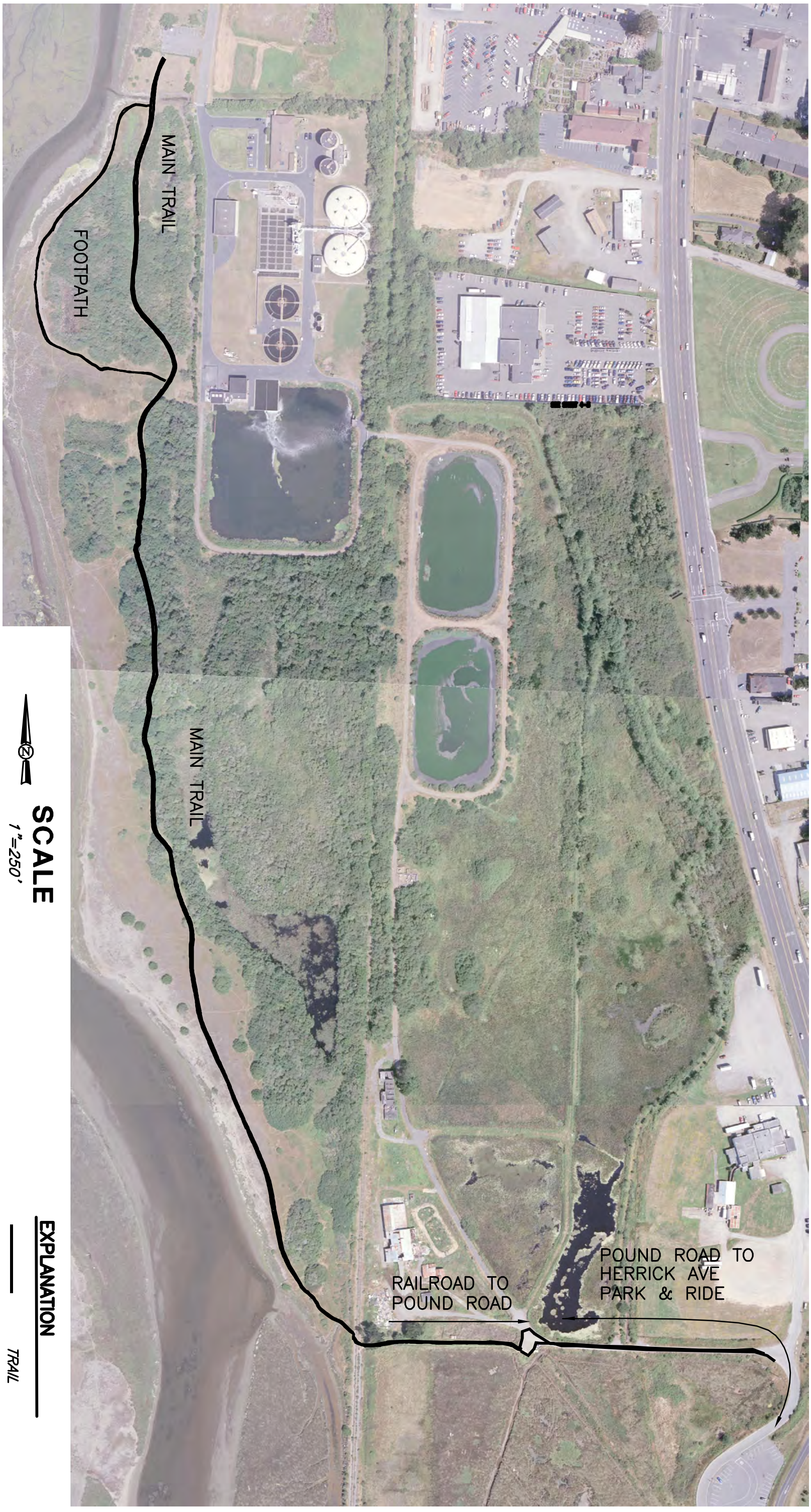

SHN Consulting Engineers & Geologists, Inc.

City of Eureka
Elk River Trail Improvement Project Phase II
Eureka, California

Study Area
Biological Resources Assessment
SHN 006107.100

October 2007

006107.100-STUDY-AREA

Figure 2

parking lot to the Herrick Avenue Park and Ride. Where the measuring rod (or additional 6-feet {main trail} or 4-feet {foot path}) intercepted one of the aforementioned important resource variables, each was noted, mapped, and quantified to the degree possible; for example, some limited trimming to clearing large diameter stems. To the extent possible (i.e., based on canopy closure), a Trimble GeoXT hand-held Global Positions System (GPS) was used to map and quantify the existing trail, the presence of wetlands, and ESHA. Collected GPS data was post processed and differentially corrected for sub-meter accuracy and overlaid on the City's 2002 aerial photograph.

3.0 Environmental Setting

3.1 Climate and Project Location

The environmental setting within the City of Eureka is predominately affected by the mild maritime climate, active tectonic processes that are manifested in the geomorphic landscape, and current and historical development. Influence from these factors is evident in the variety of habitat types found throughout the City, which include freshwater wetlands, salt marshes, deepwater channels, intertidal areas, and North Coast coniferous forest.

3.2 Study Area Habitats

Habitats within the project area consist of uplands and wetlands, with several corresponding vegetation communities in each. Upland communities include disturbed and dunemat. Wetland communities consist of Estuarine intertidal irregularly exposed wetland, Estuarine intertidal regularly exposed, Estuarine subtidal regularly inundated, Palustrine emergent wetland, an Palustrine scrub-shrub, and a combination of Palustrine emergent and scrub-shrub. The wetland community names are consistent with the National Wetland Inventory (NWI) classification system. Additional information regarding wetlands within the study area is provided in the Wetland Delineation (Appendix A). Appendix B presents a list of all plant species encountered at the site. Botanical nomenclature follows the *Jepson Manual Higher Plants of California* (Hickman, 1993). A list of wildlife species observed within and adjacent to the study area is included in Table 2 in Section 5.5.2 of this report.

The three major habitat types located in Phase II study area are Palustrine scrub-shrub, disturbed, dunemat. Salt marsh habitat is extensive along the western boundary of the study area. Refer to Appendix C for representative photos of habitats within and adjacent to the study area.

3.2.1 Upland Habitat

3.2.1.1 Disturbed

Disturbed habitat is scattered throughout the project area, with the majority located in the northern and southern portions of the study area from the railroad to Pound Road, and the Herrick Avenue Park and Ride. Disturbed habitat is not as extensive in Phase II compared to Phase I (SHN, 2007a) due to a lack of former parking areas, existing and former building pads, miscellaneous construction material and debris, and human encampments and associated debris. Soils within the disturbed areas are sandy (either native or imported fill) and have generally been heavily compacted and are mixed with unsorted rocks, rubble, and other debris. Dominant shrubs within

the disturbed areas include coyote bush (*Baccharis pilularis*), Himalayan berry (*Rubus discolor*), pampas grass (*Cortaderia jubata*), fennel (*Foeniculum vulgare*), and Scotch broom (*Cytisus scoparius*) with scattered yellow bush lupine (*Lupinus arboreus).* Although pampas grass and fennel are herbaceous species, they function as dominant shrubs in the disturbed upland habitat because they do not die back and form dense thickets that provide a canopy over the majority of the other herbaceous species. The herbaceous layer is typically dominated by non-native ruderal species that include hairy cat's ear (*Hypochaeris radicata*), English plantain (*Plantago lanceolata*), sweet white clover (*Melilotus alba*), Queen Anne's lace (*Daucus carota*), wild radish (*Raphanus sativus*), sweet vernal grass (*Anthoxanthum odoratum*), common velvet grass (*Holcus lanatus*), rattlesnake grass (*Briza maxima*), Mediterranean barley (*Hordeum marinum*), mustards (*Brassica* spp.), and St. John's wort (*Hypericum perforatum*). Native species, including yarrow (*Achillea millefolium*) and red fescue (*Festuca rubra*), are scattered throughout the disturbed habitat.

3.2.1.2 Dunemat

Vegetation that is characterized as dunemat is located along the upper margins of Humboldt Bay, east of the estuarine habitat, in more uniformly sandy soils that lack significant disturbance found in the disturbed habitat (Figures 3 and 4). The dunemat community described herein is consistent with habitat described as dune community in other references. This community consists of a mix of native and non-native species in the northern 1/4 of the Phase II study area along the main trail, and then transitions to a more intact native species composition from the northern footpath south to the railroad tracks (Figures 3, 4, and 5). The highest quality dunemat vegetation is located along the southern half of the main trial, where the existing trail is widest (Figure 4). Dunemat vegetation in the northern half of the study area is dominated by sandmat (*Cardionema ramosissimum),* European beachgrass (*Ammophila arenaria*), European hairgrass (*Aira caryophyllea*), soft chess (*Bromus hordeaceus*), salt rush (*Juncus leseurii),* yarrow, sweet vernal grass, hairy cat's ear, wild radish, and sheep sorrel (*Rumex acetosella*), with lesser amounts of beach knotweed (*Polygonum paronychia),* beach bursage (*Ambrosia chamissonis*), and beach morning glory (*Calystegia soldanella*). The higher quality dunemat vegetation lacks a significant abundance of European beachgrass, European hairgrass, and sweet vernal grass. Instead, these species are largely replaced with native grasses including red fescue and large-flowered sand-dune bluegrass (*Poa macrantha*). Native dunemat species, including beach primrose (*Camissonia cheiranthifolia),* beach morning glory, yellow sand verbena (*Abronia latifolia*), beach knotweed, beach bursage, dune tansy (*Tanacetum camphoratum*), dune goldenrod (*Solidago spathulata*), and beach buckwheat (*Eriogonum latifolium*) with scattered sea thrift (*Armeria maritima* ssp. *californica)* and beach pea (*Lathyrus littoralis*) are more widespread in the southern section of the dunemat community and along a portion of the footpath.

The sensitive natural community northern foredune grassland (refer to Section 5.4 for additional description) intergrades with the dunemat community in scattered portions of the study area including a section of the footpath and along the southern section of the main trail. This sensitive natural community was dominated by American dunegrass *(Leymus mollis* ssp. *mollis*) prior to the introduction of European beachgrass (*Ammophila arenaria*) to the west coast and associated with native dunemat species. Scattered patches of American dunegrass are located west of the study area, outside the potential trail expansion impact area.

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PROJ. NO. 006107	DATE 10/2007	FIGURE 3	CITY OF EUREKA ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT PHASE II EUREKA, CALIFORNIA **BIOLOGICAL RESOURCE ASSESSMENT**	DSGN DR DSL CHK APVD	NO. / DATE / REVISION / BY	SHN CONSULTING ENGINEERS & GEOLOGISTS, INC. 812 W. Wabash Eureka, CA 95501 (707)441-8855 FAX (707)441-8877	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 — 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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PROJ. NO. 006107	DATE 10/2007	FIGURE 4	CITY OF EUREKA ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT PHASE II EUREKA, CALIFORNIA **BIOLOGICAL RESOURCE ASSESSMENT**	DR DSL CHK APVD	NO.	DATE	REVISION	BY

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash Eureka, CA 95501 (707)441-8855 FAX (707)441-8877

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PROJ. NO. 006107	DATE 10/2007	FIGURE 5	CITY OF EUREKA ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT PHASE II EUREKA, CALIFORNIA **BIOLOGICAL RESOURCE ASSESSMENT**	DSGN DR DSL CHK APVD	NO. / DATE / REVISION / BY	SHN CONSULTING ENGINEERS & GEOLOGISTS, INC. 812 W. Wabash Eureka, CA 95501 (707)441-8855 FAX (707)441-8877	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

3.2.2 Wetlands

3.2.2.1 Estuarine Wetland

Estuarine intertidal irregularly exposed wetland habitat occupies a narrow band west of the study area, below and above the Ordinary High Water Mark (OHWM) where there is frequent tidal inundation. This vegetation community is referred to as salt marsh. Estuarine habitat is located west of the study area from the north slough to the south slough and is interspersed along both sides of the study area from the railroad tracks south to the Herrick Avenue Park and Ride (Figures 3, 4, and 5). A significant amount of high quality salt mash is located well above the OHWM and immediately adjacent to the footpath in the northern portion of the study area.

The estuarine habitat is comprised entirely of herbaceous vegetation that is interspersed with patches of intertidal mudflat scattered with brown and green algae. Pockets of this habitat have a fairly intact native species composition but the majority is dominated by substantial mono-stands of the non-native dense-flowered cordgrass (*Spartina densiflora*). Based on the salinity ranges throughout the intertidal emergent wetland, other dominant species include pickleweed (*Salicornia virginica),* saltgrass *(Distichlis spicata*), sandspurry (*Spergularia macrotheca*), seaside arrow grass (*Trigolchin maritima*), dodder (*Cuscuta salina),* spearscale (*Atriplex triangularis),* and spear oracle (*A. patula)* with lesser amounts of salt rush, gumweed (*Grindelia stricta*), sea lavendar (*Limonium californica*), fleshy jaumea (*Jaumea carnosa*), and tufted hairgrass. The species composition transitions to a combination of dunemat and salt mash vegetation, particularly near the footpath (Figure 3). High quality salt marsh habitat is located adjacent to the footpath. Northern coastal salt marshes are a sensitive natural community, which is described in Section 5.4 of this report, and are suitable habitat for a number of special status plant species. Salt marsh habitat is scattered throughout the study area and includes both the north and south sloughs (Figures 3, 4, and 5).

3.2.2.2 Palustrine Emergent Wetland

Palustrine emergent wetland habitat is inundated either seasonally, periodically, semipermanently, or permanently by freshwater and is for the most part dominated with herbaceous hydrophytes. The most significant area of this wetland habitat is located in the northern portion of the study area, adjacent to the WWTP in the open water ponds located just east of the study area (Figure 3). These ponds are permanently inundated and are dominated by hydrophytes including cattail (*Typha latifolia*), American bulrush (*Scirpus americanus*), silverweed (*Potentilla anserina*), nut sedge (*Cyperus eragrostis*), brass buttons (*Cotula coronopifolia*), Chamissonis' hedge-nettle (*Stachys chamissonis),* small fruited bulrush (*Scirpus microcarpus*), Pacific water parsley (*Oenanthe sarmentosa*), and rushes (*Juncus effuses* and *J. balticus).* This permanently inundated wetland habitat is surrounded by Palustrine scrub-shrub.

Emergent wetlands that are seasonally inundated are scattered throughout the trail area, but are generally located beyond the boundaries of the Phase II study area.

3.2.2.3 Palustrine Scrub-Shrub Wetland

Freshwater wetland habitat that has a substantial shrub component is characterized as Palustrine scrub-shrub. This is the most widespread wetland habitat in the Phase II study area. The patchy to moderately closed overstory is dominated by willows (*Salix sitchensis, S. lucida*, and *S. lasiolepis*), California wax myrtle (*Myrica californica*), and cascara (*Rhamnus purshiana*), with scattered red alder (*Alnus rubra*). The dense understory consists of both shrub and herbaceous species including willows, Himalayan berry, Pacific bramble (*Rubus ursinus*), slough sedge (*Carex obnupta*), silverweed, common rush, bent-grass (*Agrostis viridus*), and creeping buttercup (*Ranunculus repens*) with lesser amounts of sword fern (*Polystichum munitum*) and lady fern (*Athyrium felix-femina*). Some portions of the scrub-shrub habitat have been impacted by human encampments and associated debris, but not to the extent that was reported in portions of the Phase I study area (SHN, 2007a). Soils in the scrub-shrub habitat exhibited dark chroma and significant redoximorphic features, including concentrations and depletions. Both primary (saturated in the upper 12 inches) and secondary hydrology indicators (oxidized rhizospheres) were observed during the dry season (Appendix A).

4.0 Special Status Species Analysis

Prior to conducting fieldwork, a California Natural Diversity Database (CNDDB; CDFG, 2007a) Rare Find and Biogeographical Information and Observation System (BIOS; CDFG, 2007b) search was completed for the 7.5-minute U.S. Geological Survey (USGS) Eureka quadrangle and all adjacent quadrangles (Table 1). The databases were queried for historical and existing occurrences of state and federally listed Threatened, Endangered, and Candidate species; species proposed for listing; special status species; and species listed by the California Native Plant Society (CNPS; On-line 2007 inventory and Tibor, 2001).

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Plant Species				
Abronia umbellata ssp. *breviflora*	pink sand-verbena	1B	Coastal dunes below 50 feet above Mean Sea Level (MSL); blooms June-October.	Yes
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B	Mesic coastal dunes, coastal salt marshes and swamps below 100 feet above MSL; blooms April-October.	Yes
Carex arcta	northern clustered sedge	2	Mesic sites in North Coast coniferous forests, and bogs and fens between approximately 195 and 4,600 feet above MSL; blooms June-August.	No

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Carex leptalea	flaccid sedge	2	Bogs and fens, meadows and seeps, marshes and swamps from sea level to 2,300 feet above MSL; blooms May-August.	Yes
Carex lyngbyei	Lyngbye's sedge	2	Brackish or freshwater marshes and swamps below 35 feet above MSL; blooms May-August.	Yes
Carex praticola	meadow sedge	2	Mesic meadows and seeps in North Coast coniferous forests from sea level to 10,500 feet above MSL; blooms May-July.	Yes
Castilleja affinis ssp. *litoralis*	Oregon coast Indian paintbrush	2	Coastal bluff scrub, sandy coastal scrub, and dunes from 50-330 feet above MSL; blooms in June.	Yes
Castilleja ambigua ssp. *humboltiensis*	Humboldt Bay owl's clover	1B	Coastal salt marsh and swamps up to 10 feet above MSL; blooms April-August.	Yes
Cordylanthus maritimus ssp. *palustris*	Point Reyes bird's-beak	1B	Coastal salt marsh and swamps up to 30 feet above MSL; blooms June-October.	Yes
Erysimum menziesii ssp. *eurekense*	Humboldt Bay wallflower	1B/FE/SE	Coastal dunes up to 30 feet above MSL; blooms March-April.	Yes
Erythronium revolutum	coast fawn lily	2	Bogs and fens, mesic areas in broadleaved forests and North Coast coniferous forest, and streambanks up to 3,500 feet above MSL; blooms March-June.	No
Fissidens pauperculus	minute pocket-moss	1B	Grows on damp soil along the coast in North Coast coniferous forest from 30-330 feet above MSL.	No
Gilia capitata ssp. *pacifica*	Pacific gilia	1B	Various including coastal bluff scrub and coastal prairie generally below 1,000 feet above MSL; blooms May-August.	Yes
Gilia millefoliata	dark-eyed gilia	1B	Coastal dunes up to 65 feet above MSL; blooms April-July.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	2	Coastal bluff scrub and coastal dunes up to 700 feet above MSL; blooms March-June.	Yes
Lathyrus japonicus	sand pea	2	Coastal dunes up to 100 feet above MSL; flowers May-August.	Yes
Lathyrus palustris	marsh pea	2	Bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, North Coast coniferous forest/mesic up to 330 feet above MSL; blooms March-August.	Yes
Layia carnosa	beach layia	1B/FE/SE	Coastal dunes and coastal scrub up to 200 feet above MSL; blooms March-July.	Yes
Lilium occidentale	western lily	1B/FE/SE	Coastal bluff scrub, coastal prairies, openings in North Coast coniferous forests including edges of freshwater marshes and swamps up to 600 feet above MSL; blooms June-July.	Yes
Lycopodium clavatum	running pine	2	Typically on mesic substrate in redwood and mixed conifer forest including woody debris, old roads, and marshes and swamps from 200-2,600 feet above MSL. Identifiable year round; fertile July-August.	Yes
Mitella caulescens	leafy-stemmed mitrewort	4	Mesic sites in broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest, and meadows and seeps from 2,000-5,600 feet, above MSL; blooms May-July.	No
Monotropa uniflora	Indian pipe	2	North Coast coniferous forest and broadleaved upland forest from 30-650 feet above MSL; blooms June-July.	No

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Montia howellii	Howell's montia	2	Vernally wet, open sites in North Coast coniferous forests including meadows and seeps/often in disturbed areas (e.g. roadsides); blooms in March-May.	No
Puccinellia pumila	dwarf alkali grass	2	Coastal salt marshes and swamps up to 30 feet above MSL; blooms in July.	Yes
Sidalcea malachroides	maple-leaved checkerbloom	4	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest/ often in disturbed areas (e.g., roadsides) up to 2,300 feet above MSL; blooms April-August.	No
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	1B	Openings in North Coast coniferous forest and coastal prairie from 50-2,300 feet above MSL; blooms May-June.	Yes
Sidalcea oregana ssp. *eximia*	coast checkerbloom	1B	Openings in lower montane and North Coast coniferous forests, meadows and seeps, and coastal prairie from 15-4,400 feet above MSL; blooms June-August.	Yes
Spergularia canadensis var. *occidentalis*	western sand spurrey	2	Coastal salt marshes and swamps up to 10 feet above MSL; blooms June-August.	Yes
Usnea longissima	long-beard lichen/ Methuselah's beard	N/A	North Coast coniferous forests. Host trees include Douglas fir, redwood, big-leaf maple, oak, and California bay trees. Identifiable year round.	No
Viola palustris	marsh violet	2	Mesic coastal scrub and coastal bogs and fens up to 500 feet above MSL; blooms March-August.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Wildlife Species				
Accipiter cooperii	Cooper's Hawk	SSC	Non-breeding habitat preference highly variable from closed forests to urban interface. Nesting locations tend to be dense mixed-forests but can also be urban.	Yes
Accipiter striatus	Sharp-Shinned Hawk	SSC	Non-breeding habitat preference highly variable from closed forests to urban interface. Nesting locations tend to be dense mixed-forests but can also be urban.	Yes
Arborimus albipes	white-footed vole	SSC	Mature coastal forests with dense alder and shrubs, from the Mad River in Humboldt County north.	No
Arborimus pomo	red tree vole	SSC	Mature and immature North Coast coniferous forest; build nests within the living portion of the canopy.	No
Ardea alba	Great Egret	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Ardea herodias	Great Blue Heron	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Ascaphus truei	western tailed frog	SSC	Sea level to near timberline in cold fast flowing perennial streams in forested areas.	No
Charadrius alexandrinus nivosus	Western Snowy Plover	FT	Sparsely vegetated beaches, along coastal strip, also inland; ground nester and gregarious in non-breeding season.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Egretta thula	Snowy Egret	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes
Emys marmorata marmorata	northwestern pond turtle	SSC	Aquatic habitat with some slow water component, basking sites are important, with suitable upland nesting sites within a few hundred meters of aquatic habitat.	Yes
Eucyclogobius newberryi	tidewater goby	FE/SSC	Brackish water habitats along the California coast from San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, where water is fairly still but not stagnant water with high oxygen levels.	Yes
Haliaeetus leucocephalus	Bald Eagle	Federally delisted/SE	This species is generally found along ocean shores, lake margins, and rivers. Nests in large, old growth, or live trees with open branches, especially ponderosa pine, within 1 mile of water source. Species roosts communally in winter.	Yes
Martes americana humboldtensis	Humboldt marten	SSC	Mature North Coast coniferous forests.	No
Martes pennanti pacifica	Pacific fisher	FC/SSC	Coniferous forests with old-growth forest components.	No
Myotis evotis	long-eared myotis	N/A	All brushy, woodland, and forest habitats from sea level to approximately 9,000 feet.	No
Nycticorax nycticorax	Black-crowned Night Heron	N/A	Colonial nesting species; nests in trees near tideflats, marshes, irrigated pastures, and margins of lakes and rivers.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Oncorhynchus clarii clarki	coast cutthroat trout	SSC	Spawns in small coastal tributary streams, and utilizes slow flowing backwater areas, low velocity pools, and side channels for rearing of young. Prefers good forest canopy cover, in-stream woody debris, from the Eel River north to the Oregon border.	Yes
Oncorhynchus kisutch	Southern Oregon Northern California Coast (SONCC) Coho salmon	FT/ST	Freshwater, nearshore and offshore environments throughout their lifecycles. Coho prefer low stream velocity, shallow water, and small gravel. Spawning and rearing habitat mainly in low gradient tributaries and side channels of river systems. Require beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water, and sufficient dissolved oxygen.	Yes
Oncorhynchus mykiss irideus	northern California steelhead	FT/SE	Coastal basins from Redwood Creek south to the Gualala River. Spawning and rearing habitat mainly in low-medium gradient tributaries, side channels, and mainstem of river systems.	Yes
Pandion haliaetus	Osprey	SSC	Primarily along rivers, lakes, bay, and seacoasts. Nests in dead snags, living trees, utility poles, etc. usually near or above water.	Yes
Pelecanus occidentalis	Brown Pelican	FE	Near-shore waters along coast; nests on islands in central and south America.	Yes

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]
Phalacrocorax auritus	Double-crested Cormorant	SSC	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Yes
Plethodon elongates	Del Norte salamander	SSC	Rock talus in coniferous forest and under woody debris from sea level to 4,000 feet.	No
Rallus longirostris obsoletus	California Clapper Rail	FE/SE	Exclusively found in tidal salt marshes; thought to be extirpated from Humboldt County.	Yes
Rana aurora aurora	northern red-legged frog	SSC	North Coast coniferous forest; breeds in ponds and slow moving backwater in creeks.	Yes
Rana boylii	foothills yellow-legged frog	SSC	Shallow, shaded perennial streams with some open canopy; breeds in stream margins.	No
Rhyacotriton variegatus	southern torrent salamander	SSC	North Coast coniferous forest at edges of turbulent, shaded, clear streams.	No
Natural Communities				
Coastal terrace prairie				
Northern coastal salt marsh				
Northern foredune grassland				
Sitka spruce forest				

1. CNPS list 1B includes plants that are rare, threatened, or endangered in California and elsewhere.
CNPS List 2 includes plants that are rare, threatened, or endangered in California but more common elsewhere.
CNPS List 4 includes plants of limited distribution and should be documented as they are watch list species
FE: Federally listed Endangered, pursuant to the Endangered Species Act of 1973, as amended. This designation includes taxa that are in danger of extinction throughout all or a significant portion of their range.
FT: Federally listed Threatened, pursuant to the Endangered Species Act of 1973, as amended. This designation refers to species that are not presently threatened with extinction but are likely to become endangered throughout all or a significant portion of their range in the foreseeable future if special protection and management efforts are not undertaken.
FC: Federal Candidate. This designation includes taxa that require additional information to propose for listing pursuant to the Endangered Species Act of 1973, as amended.
SE: State listed Endangered, pursuant to California Endangered Species Act (CESA). SE designation includes taxa that are in danger of extinction throughout all or a significant portion of their range
ST: State listed Threatened, pursuant to California Endangered Species Act (CESA). ST designation includes taxa that are likely to become endangered throughout a significant portion of their range.

Table 1
Sensitive Botanical and Wildlife Species Reported from the Eureka Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species Latin Name	Common Name	Listing Status[1]	Preferred Habitat[2]	Habitat Present[3]

DFG: California Department of Fish and Game
SSC: Species of Special Concern are species that the DFG consider of conservation concern. These species must be considered pursuant to CEQA.
N/A: Not Applicable; species is considered to be sensitive for other reasons such as colonial nesting or that the species is rare or uncommon. While no formal conservation status is afforded, the CNDDB still tracks the presence of these species and they must be considered.
2. Plant habitat descriptions are from CNDDB (September 2007), Tibor (2001), and Hickman (1993).
3. Habitat that is defined as present is not restricted to the study area but also includes adjacent areas if they are identified as suitable for supporting the specified species.

5.0 Species Descriptions and Habitat Suitability

5.1 Special Status Plant Species

Based on the 30 species reported by the CNDDB (CDFG, 2007a), the range of habitats present at the project site, and the geographical range of the various special status species, a list of species that are considered potentially likely to occur in the study area was developed, as described below. Refer to Section 5.5.1 for the results of the focused botanical survey and a list of special status species that were detected in the study area. Focused botanical surveys were conducted on April 13, June 19, July 20, and August 2, 2007.

5.2 Plant Species Descriptions

Pink sand verbena (*Abronia umbellata* ssp. *breviflora*) is an annual herb in the Nyctanginaceae Family that may live up to two years (BLM, March 2005). Pink sand verbena occurs in coastal beach and dune habitat, from sea level to approximately 30 feet above Mean Sea Level (MSL) (Tibor, 2001). This species occurs in foredunes and interdunes with minimal vegetation cover; it is often the closest plant species to the water (CDFG, 2007a). This species blooms June through October (Tibor, 2001). Associate species include sea rocket, burweed, European beachgrass, beach silvertop, and yellow sand verbena (*Abronia latifolia*). Habitat within the project area for pink sand verbena includes the dunemat/northern foredune grassland. These areas are considered highly suitable to support an occurrence of this special status species.

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) is a perennial herb in the Fabaceae Family that blooms April through October. According to the CNDDB, there has only been one coastal marsh milk-vetch occurrence reported from the Humboldt Bay area (occurrence number 23; CDFG, 2007a). Fieldwork that has been conducted at this historical site in the last few years did not result in the detection of any plants; therefore this special status species may be extirpated from Humboldt County. Coastal marsh milk-vetch occurs in mesic dunes and along streams or coastal salt marshes below 100 feet in elevation (Tibor, 2001). Suitable habitat within the Phase II study area for this special status species is scattered throughout salt marsh habitat including the north and south sloughs. Due to the significant presence of cordgrass in salt marsh habitat located within the study area, this habitat is only considered marginally suitable for

supporting an occurrence of coastal marsh milk-vetch. Suitable high quality salt marsh habitat surrounds the study area, particularly near the footpath. Those areas are considered more likely to support an occurrence of this special status species.

Flaccid sedge (*Carex leptalea)* and **meadow sedge** (*C. praticola)* are perennials in the Cyperaceae Family. Flaccid sedge blooms May through August; meadow sedge blooms May through July. Suitable habitat for flaccid sedge and meadow sedge includes bogs and fens, mesic meadows, and marshes and swamps typically within North Coast coniferous forest that are variable in elevation (Tibor, 2001). Suitable habitat within the project area includes the Palustrine emergent wetland, which is scattered throughout the study area. Although these species can occur at or near sea level, habitat within the project area is only considered marginally suitable due to the vicinity of Humboldt Bay and the lack of known occurrences immediately surrounding the Bay.

Lyngbye's sedge (*Carex lyngbyei*) is a perennial in the Cyperaceae Family that blooms May through August (Tibor, 2001). This species occurs in brackish freshwater marshes or swamps (CDFG, 2007a). Suitable habitat for Lyngbye's sedge is scattered throughout the project area. The majority of suitable salt marsh habitat is located in the southern portion of the study area, and includes both sides of the existing path from the railroad tracks south to the Herrick Avenue Park and Ride. The north and south sloughs are also considered moderate to high quality habitat for supporting an occurrence of Lyngbye's sedge.

Oregon coast Indian paintbrush (*Castilleja affinis* ssp. *litoralis*) is a perennial in the Scrophulariaceae Family. This species occurs in coastal bluff scrub, coastal dunes, and sandy substrate in coastal scrub that ranges from 50 to 330 feet above MSL (CDFG, 2007a). This special status species blooms in June (Tibor, 2001). Suitable habitat moderate quality habitat for Oregon coast Indian paintbrush is located in the dunemat/northern foredune grassland.

Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboltiensis*) is a hemiparasitic annual herb in the Scrophulariaceae Family. This species occurs in salt marshes that range from sea level to approximately 10 feet above MSL around Humboldt Bay and Point Reyes in Marin County (Tibor, 2001). Humboldt Bay owl's clover blooms April through August (Tibor, 2001). Suitable moderate to high quality habitat for this special status species is scattered throughout the salt marsh habitat in the study area. Portions of the salt marsh habitat that have an intact native species composition and lack or have minor components of dense-flowered cordgrass are most suitable for Humboldt Bay owl's clover. This includes the high quality salt marsh that is located adjacent to the footpath and scattered sections throughout the study area including the north and south sloughs.

Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) is an annual facultative hemiparasitic herb (Eicher, 1987) in the Scrophulariaceae Family. This species occurs in salt marsh habitat that ranges from sea level to 33 feet in elevation; this species blooms June through August (Tibor, 2001). Point Reyes bird's-beak was once rather common in suitable salt marsh habitat but the numbers of occurrences have been greatly reduced by development. Other threats include foot traffic, non-native plants, hydrological alterations, cattle grazing, and trampling (Tibor, 2001). Suitable moderate to high quality habitat for Point Reyes bird's-beak is scattered throughout the salt marsh habitat in the study area, which is identical to suitable habitat for Humboldt Bay owl's clover.

Humboldt Bay wallflower (*Erysimum menziesii* ssp. *eurekense*) is a perennial herb in the Brassicaceae Family. This species is endemic to Humboldt Bay and is known from only six occurrences around the Bay (CDFG, 2007a). Humboldt Bay wallflower blooms March through April (Tibor, 2001). Suitable habitat for this state and federally listed species includes coastal dunes up to approximately 30 feet above MSL that are dominated by northern foredune vegetation (CNDDB, 2007). Suitable habitat in the study area includes portions of the dunemat association/northern foredune grassland that have a fairly intact native species composition and lacks significant cover of European beachgrass.

Pacific gilia (*Gilia capitata* ssp. *pacifica*) is an annual herb in the Polemoniaceae Family. Suitable habitat for this special status species is various and includes coastal bluff scrub and coastal prairie (Tibor, 2001). Occurrences of this species have been reported on Pacific Lumber Company (PALCO) property within meadows and roadsides in Douglas fir dominated areas at elevations that range from 1,000 to 2,950 feet above MSL (CDFG, 2007a). Pacific gilia blooms May through August (Tibor, 2001). Suitable habitat within the project area is limited to the dunemat association. This habitat is considered moderately suitable for supporting an occurrence of Pacific gilia.

Dark-eyed gilia (*Gilia millefoliata*) is an annual herb in the Polemoniaceae Family that blooms April through July (Tibor, 2001). This species occurs in coastal dunes up to approximately 65 feet above MSL. Suitable moderate to high quality habitat within the study area includes the dunemat/northern foredune grassland.

Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) is an annual herb in the Asteraceae Family. Suitable habitat for this species includes sandy substrate on coastal bluff scrub and coastal dunes from sea level to approximately 700 feet above MSL (CDFG, 2007a). This annual herb blooms March through June (Tibor, 2001). Suitable habitat within the study area includes the dunemat/northern foredune grassland. Areas within the dunemat association that have a substantial assemblage of native species are considered higher quality and more likely to support an occurrence if short-leaved evax.

Sand pea (*Lathyrus japonicus*) is a rhizomatous herb in the Fabaceae Family that blooms May through August (Tibor, 2001). This species occurs in coastal dune habitat, from sea level to approximately 100 feet above MSL (CDFG, 2007a). Based on known occurrences in the Crescent City area of California, sand pea is relatively tolerant of disturbance and competition from non-native species. The dunemat association throughout the study area is considered moderate to high quality habitat for sand pea.

Marsh pea (*Lathyrus palustris)* is a perennial herb in the Fabaceae Family that blooms March through August (Tibor, 2001). This species occurs in a variety of habitats that include bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, and mesic locations in North Coast coniferous forest up to 330 feet above MSL (CDFG, 2007a). Suitable habitat within the project area includes the Palustrine emergent wetland and Palustrine scrub shrub. Portions of the study area that are considered most suitable for supporting an occurrence of marsh pea are wetland areas that lack a dense overstory.

Beach layia (*Layia carnosa*) is an annual herb in the Asteraceae that blooms March through July (Tibor, 2001). Suitable habitat for this state and federally listed species includes coastal dunes and coastal scrub up to 200 feet above MSL (CDFG, 2007a). Suitable habitat within the project area

includes the dunemat association. Habitat in the northern portion of the study area is only considered marginally suitable because there is a greater distribution of non-native species compared to the southern portion of the study area along the main trail.

Western lily (*Lilium occidentale*) is an herbaceous perennial in the Liliaceae that grows from a deep, rhizatomous bulb. This state and federally listed species occurs within 4 miles of the coast, generally on marine terraces below 300 feet above MSL (CDFG, 2007a). Western lily is known to occur from early successional fens and coastal scrub habitat in northwestern California to southwest Oregon (Kalt, 2006). Habitats with which this species is associated include coastal bluff scrub, coastal prairie, and openings in coastal coniferous forest (Sitka spruce dominated) including freshwater marshes and swamps (CDFG, 2007a). This species emerges in late March or early April and flowers in late June or July (Imper and Sawyer, 1992). The species grows in soils that are described as well drained or poorly drained, and have a significant layer of organic topsoil (Imper and Sawyer, 1992). The soil profile also includes an iron or clay confining layer, which serves to perch moisture late in the growing season (Imper, 2003). Suitable habitat within the project area for western lily is limited to the Palustrine emergent wetland and the perimeter of the Palustrine scrub shrub association. This habitat is only considered marginally suitable for supporting an occurrence of western lily due to a lack of appropriate soils.

Running pine (*Lycopodium clavatum*) is a trailing rhizomatous herb in the Lycopodiaceae Family. This spore bearing plant is fertile July through August but is identifiable year round (Tibor, 2001). Running pine occurs in a variety of habitats. Suitable habitat ranges from moist areas in redwood or mixed evergreen forests under moderately open to semi-closed canopy (generally on northern aspects or ridge tops), to drier, more exposed areas at the edge of (or within) old skid and haul roads (SHN, 2001). Suitable habitat also includes marshes and swamps from 200-2,600 feet above MSL (Tibor, 2001). Suitable habitat within the project area is limited to the Palustrine emergent wetland. This habitat is only considered marginally suitable because most running pine occurrences are located at higher elevations and further inland from the coast.

Dwarf alkali grass (*Puccinellia pumila*) is a perennial herb in the Poaceae Family that blooms in July. This species occurs in coastal salt marshes and swamps up to 30 feet above MSL (Tibor, 2001). This species is known from only two occurrences in California with only one historical occurrence reported from Humboldt County (CDFG, 2007a). Suitable moderate to high quality habitat for this is scattered throughout the salt marsh habitat, particularly in area that lack or only have a moderate cover of cordgrass.

Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) is a perennial in the Malvaceae Family that blooms May to June (Tibor, 2001). This species occurs in openings in North Coast coniferous forest and broadleaved upland forest such as roadsides, grasslands, and meadows and in coastal prairie habitat up to 2,300 feet above MSL (CDFG, 2007a). Suitable moderate quality habitat within the study area includes the dunemat vegetation, particularly in areas where grasses are most dominant and there is some soil profile development. Suitable low quality habitat for Siskiyou checkerbloom also includes scattered locations throughout the disturbed habitat.

Coast checkerbloom (*Sidalcea oregana* ssp. *eximia*) is a perennial in the Malvaceae Family that blooms June to August (Tibor, 2001). This species occurs in openings in lower montane and North Coast coniferous forests and meadows and seeps up to 4,400 feet above MSL (CDFG, 2007a); this species is reported to occur in gravelly soils or native soils that are largely intact (CDFG, 2007a).

Both coast checkerbloom and Siskiyou checkerbloom closely resemble each other and their habitats and ranges overlap, which although not specified in the CNDDB or by Tibor (2001), suitable habitat for coast checkerbloom is considered to include coastal bluff and coastal prairie habitats. Suitable habitat within the study area is consistent with the habitat described above for Siskiyou checkerbloom.

Western sand spurrey (*Spergularia canadensis* var. o*ccidentalis*) is a delicate annual in the Caryophyllaceae Family that blooms June through August (Tibor, 2001). This species is known in California only from three occurrences in the Humboldt Bay area (CDFG, 2007a). Those occurrences are located in salt marshes up to 10 feet above MSL (CDFG 2007a); western sand spurrey is more widespread in Oregon, Washington, and British Columbia (Tibor, 2001). Suitable moderate to high quality habitat is scattered throughout the salt marsh in the study area.

Marsh violet (*Viola palustris)* is perennial (rhizomatous) herb in the Violaceae Family that blooms March through August (Tibor, 2001). This species occurs in mesic coastal scrub and coastal bogs and fens up to 500 feet above MSL; marsh violet is known from only five occurrences in California, which includes Mendocino, Humboldt and Del Norte counties (CDFG, 2007a). Suitable moderate to high quality habitat for this species includes the Palustrine emergent wetland and Palustrine scrub shrub located throughout the study area; however the majority of suitable habitat for marsh violet is located beyond the boundaries of the study area.

5.3 Special Status Wildlife Species

Based on the 27 species reported by the CNDDB (CDFG, 2007a) and BIOS (CDFG, 2007b), the range of habitats present at the project site, and the geographical range of the various special status species, a list of species considered potentially likely to occur in the study area was developed, as described below. Refer to Table 2 of this report for the results of wildlife species detected in and adjacent to the study area.

Cooper's Hawk (*Accipiter cooperii*) and **Sharp-shinned Hawk** (*A. striatus*) are in the Family Accipitridae and are primarily associated with dense forests but can be found in several habitat types including ecotones and urban environments. Passerines (songbirds) are the primary prey of Accipiters and are abundant throughout the project site. Nesting habitat is limited to willow thickets in the Palustrine scrub shrub habitat. However, this habitat lacks the structure typical of Accipiter nest sites. Human encampments during the breeding season decrease the probability of nesting use by either the Cooper's Hawk or Sharp-shinned Hawk throughout the study area.

Wading birds, including **Great Egret** (*Ardea alba),* **Cattle Egret** *(Bubulcus ibis)*, **Great Blue Heron** *(A. herodias),* **Snowy Egret (***Egretta thula)***, Black-crowned Night Heron** (*Nycticorax nycticorax)* are in the Family Ardeidae. Herons and egrets are primarily associated with shallow wetland and estuarine habitats where they prey upon fish and amphibians. Other important foraging habitat for herons and egrets includes fields and pastures, where they prey upon abundant small mammals. Wading birds congregate in large breeding colonies during the breeding season making them susceptible to failure if disturbed. While no nesting colonies currently exist within the study area, herons and egrets are common along the estuarine habitat of the Elk River Estuary.

Western Snowy Plover (*Charadrius alexandrinus nivosus*) are in the Family Charadriidae. The Western Snowy Plover is a small shorebird that typically forages on invertebrates above and below the mean high-water line of coastal beaches. The breeding range of the coastal population of the Western Snowy Plover is between southern Washington and Magdalena Bay, Baja Sur Mexico, and is associated with beach habitats, lagoons, salt evaporation ponds (USFWS, 2005d), and in Humboldt County, along gravel bars on the lower Eel River (Colwell et al., 2005). Western Snowy Plovers are facultatively polyandrous and polygynous, and produce 1-3 broods per season. Young are precocial and leave the nest 1-3 hours after hatching to independently forage. Western Snowy Plovers are gregarious and form roosting flocks in the winter.

The U.S. Fish and Wildlife Service (USFWS) listed the coastal population of the Western Snowy Plover as a threatened population segment in 1993 under the federal Endangered Species Act (USFWS, 1993; 58 FR 12864-12874). In 1999, the USFWS designated critical habitat; however, the designation was rescinded due to inadequacies in the economic evaluation component of the designation. Final designation of critical habitat for the Western Snowy Plover occurred in 2005 and included several beaches in Humboldt County and gravel bars on the lower Eel River near Fortuna. The Elk River Wildlife Trail Improvement project area was not included in the final 2005 critical habitat designation for the Western Snowy Plover (USFWS, 2005a).

Since the Western Snowy Plover population segment was listed as Threatened, there has been a concerted effort in Humboldt County by biologists, resource agencies, and university counterparts to survey for plovers primarily during the spring/summer breeding season as well as the late summer and fall non-breeding season. Surveys have primarily focused on Recovery Unit 2, which includes Del Norte, Humboldt, and Mendocino Counties. Based on the preponderance of surveys, the majority of Western Snowy Plovers occur in Humboldt County (USFWS, 2001; Colwell et al., 2005); and primary survey areas within Humboldt County include Little River State Beach and Clam Beach, the South Spit of Humboldt Bay and Eel River Wildlife Areas, and the Eel River gravel bars. Coupled with surveys, numerous recovery actions have occurred within Recovery Unit 2 designed to improve plover nesting success and post-fledging survival in order to recover populations to sustainable levels.

In addition to the aforementioned primary survey locations, "fringe" areas have been surveyed where historical observations exist and suitable habitat remains. This serves to either confirm the presence or absence of plovers, or to detect occupancy as populations shift or habitat changes or more importantly, as populations recover.

The following information represents a summary of surveys completed by a consortium of local biologists (provided by R. LeValley, Mad River Biologists, 2006); as well as historical occurrences reported by the CNDDB. According to the CNDDB (CDFG, 2007a), one museum egg set was collected in 1920 from the Elk River Spit, and one pair of plovers was observed in May 1977 on the Elk River Spit (Page and Stenzel, 1981), as well as a single bird three days later. Furthermore, a single plover was observed in October 1979. Three surveys were completed in 1993 and no plovers were observed; a single survey was conducted in 1999 and 2000 and no plovers were observed. From 2001 to present, surveys have been completed that have included multiple visits per year, especially in 2002 when surveys were completed twice a month from January through September (excluding February), resulting in five individual Western Snowy Plover detections. In summary, three surveys were completed in the 1970s, none in the 1980s, four in the 1990s, and 47 surveys

since 2000, culminating in nine Western Snowy Plover detections on the Elk River Spit. Despite survey efforts, nesting on the Elk River Spit by Western Snowy Plovers has not been documented since the 1920 museum egg collection.

A portion of the Phase I study area, within the Truesdale beach and park section of the study area, was identified as containing suitable Western Snowy Plover beach foraging habitat (SHN, 2007a). No habitat within the Phase II study area is identified as containing suitable breeding or foraging habitat for Western Snowy Plover; however, suitable foraging habitat is located adjacent to the study area, along the east side of the Elk River Estuary. This area includes sandy beach habitat with sparse vegetation cover that abuts Estuarine intertidal emergent wetland habitat located at or near OHWM. Vegetation within this Estuarine intertidal habitat is comprised entirely of herbaceous species with scattered patches of bare ground and brown and green algae (mudflats).

On the west side of the Elk River Estuary, open sand habitat most suitable for Western Snowy Plover use starts around the former fuel line trestle and proceeds to the northern extent of the Elk River Spit. Although beach habitat in this portion of the spit can be fairly wide and seemingly suitable for foraging, nesting is unlikely simply because this is a substantial loafing area (resting and preening) for other shorebird species, waterfowl, gulls, pelicans, wading birds (egrets and herons), and cormorants. Several hundred to a few thousand birds routinely use the northern extent of the spit.

The outer portion of the Elk River Spit from Stinky Beach north contains the most suitable Western Snowy Plover habitat within the vicinity of the study area. As described above, the preponderance of plover detections have occurred on the outer Elk River Spit beach; however, nesting remains to be detected.

The Elk River Estuary and Spit is an important resource for resident and migratory avian species. While surveys have yet to demonstrate Western Snowy Plover nesting activities, plover presence has been detected nine times since 2000. The Humboldt Bay side of the Elk River Spit remains the most suitable Western Snowy Plover habitat in proximity to the study area. Due to the distance of the Elk River Spit from potential impact areas, it is unlikely that the project as proposed will have any impact on Western Snowy Plover presence, use, or nesting potential on the Elk River Spit.

The Bald Eagle (*Haliaeetus leucocephalus*) is a member of the Family Accipitridae. Bald Eagles are found throughout North America; this species was federally delisted in 2007; however, the Bald Eagle remains state listed. Bald Eagles are opportunistic foragers with variable diets based of prey availability. Bald Eagles build large stick nests that are often reused from year to year by the same pair. Breeding habitat is associated with aquatic habitats (coastal areas, rivers, lakes, and reservoirs) with forested shorelines or cliffs in North America (USFWS, 2005c). Foraging habitat is located adjacent to the study area within the Elk River Estuary; however, Bald Eagles will not be affected by the project as proposed.

Ospreys (*Pandion haliaetus)* are in the Family Accipitridae. Ospreys are commonly observed hunting for fish over Humboldt Bay and along the Humboldt County coastline. The Elk River watershed is an important nesting area (Hunter et al., 2005) as prominent snags suitable for nesting are abundant and river corridors appear to be a preferred landscape attribute for Osprey

occupancy. Ospreys were observed throughout Elk River area during 2006 and 2007 field surveys, particularly hunting for fish in the Elk River Estuary. The project as proposed will not affect the Elk River Estuary; therefore, no impacts to Osprey are anticipated.

Brown Pelican (*Pelecanus occidentalis*) are in the Family Pelecanidae. The Brown Pelican has a large range extending from North America to South America. Brown Pelican diet consists mostly of fish, especially menhaden, mullet, sardines, pinfish and anchovies in U.S. waters (USFWS, 2005b). Brown Pelicans nest on small islands and are colonial; clutch size is typically 3. Stick nests are built on either low vegetation or the ground. Habitat for the Brown Pelican is mostly along the coast and pelicans are rarely seen inland or far out at sea. Brown Pelicans winter along the west coast of the United States including Humboldt Bay and nest in Central and South America. Suitable habitat for Brown Pelican is located adjacent to the study area, but not actually within potential impact areas. The northern end of the Elk River Spit is an important loafing and preening area and pelicans were commonly observed during field visits, in both 2006 and 2007. The Elk River Estuary and Humboldt Bay are important feeding areas for the Brown Pelican. The current project as proposed will not affect the Brown Pelican.

Double-crested Cormorants (*Phalacrocorax auritus)* are in the Family Phalacrocoracidae. Double-crested cormorants are piscivorous and common along rocky coasts, beaches, and inland lakes and rivers. Double-crested cormorants were commonly observed sunning and preening on the northern extent of the Elk River Spit in 2006 and 2007. The project as proposed will not affect the Double-crested Cormorant.

The **California Clapper Rail** (*Rallus longirostris obsoletus*) is in the family Rallidae and was once present in Humboldt County; however, habitat loss and alteration from both human activities and invasion by non-native plant species has largely contributed to the extirpation of this species in Humboldt County (Hunter et al., 2005). One specimen was collected in 1917, and the last unverified reports of California Clapper Rails in Humboldt Bay occurred in the 1930s (Hunter et al., 2005). The California Clapper Rail is almost entirely associated with the remaining salt marsh habitat of the San Francisco Bay. The project as proposed will not affect the California Clapper Rail.

Northwestern Pond Turtle (*Emys marmorata marmorata*) are in the Family Emydidae and use similar habitat types as the northern red-legged frog. Western pond turtles are also commonly found in lotic (flowing) habitats. The freshwater ponds surrounding the WWTP, east of the study area, are suitable habitat for western pond turtles assuming that salinity is not limiting. Suitable habitat will avoided therefore the proposed project is not expected to result in an impact to northwestern pond turtles.

Tidewater Goby (*Eucyclogobius newberryi)* are in the Family Gobiidae and are endemic to brackish lagoons and estuaries of coastal California from the Smith River in Del Norte County to Agua Hediona Lagoon in San Diego County (Swift et al., 1989). A recent survey by Chamberlain (2006) investigated the environmental variables important to tidewater goby in California lagoons and estuaries in historical locations, as well as documented the current distribution of the species. Surveys were conducted in Humboldt Bay; however, none were conducted in the Elk River Estuary, suggesting that tidewater goby may not be present within the Elk River Estuary or in adjacent wetland habitat. The project as proposed will not affect the Elk River Estuary or wetlands with tidal influence; therefore, no impacts to the tidewater goby are anticipated with implementation of the proposed project.

Coastal cutthroat trout (*Oncorhynchus clarii clarki)* are in the Family Salmonidae and are found in coastal streams from the Eel River to Seward in southeastern Alaska. Populations in the lower Eel River drainage (including tributaries) represent the southern extent of the species range. The project as proposed will not affect the Elk River Estuary; therefore, no impacts to coastal cutthroat trout are anticipated.

Southern Oregon Northern California Coast (SONCC) Coho Salmon (*Oncorhynchus kisutch*) **and northern California steelhead** (*Oncorhynchus mykiss irideus*) are in the Family Salmonidae. The Elk River is an important watershed for both species. However, the project as proposed will not affect the Elk River Estuary; therefore, no impacts to the Coho salmon or steelhead are anticipated

Northern red-legged frogs (*Rana aurora aurora*) are in the Family Ranidae and are associated with lentic (standing to low flow) conditions for breeding sites. Adults and other age classes are know to disperse great distances (more than 300 meters) and are associated with mesic forests and riparian areas (Pearl, 2005). Due to the mobility of northern red-legged frog, and greater thermal tolerances, northern red-legged frogs are relatively common within the coastal fog belt of Humboldt County. The freshwater ponds surrounding the WWTP, east of the study area, have suitable breeding habitat for the northern red-legged frog assuming that salinity is not a limiting factor. Northern red-legged frogs were not observed during any of the 2006 or 2007 field surveys, however, Pacific tree frogs (*Hyla regilla*) are present, and are often found in similar breeding and non-breeding habitat as northern red-legged frog. Northern red-legged frogs typically breed earliest along the coast in January, February, and March, compared to inland. Focused surveys in suitable breeding habitat adjacent to the Phase II study area were not conducted because the proposed project avoids those areas. However, suitable non-breeding habitat is located throughout the study area.

5.4 CNDDB Natural Communities

Natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. CNDDB natural communities are habitat for numerous special status plant and animal species. The natural communities that are included in the CNDDB are based on the state and global ranking status, which provides an estimate of the number of acres that remains of a particular community and threat level designation. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California.

Coastal Terrace Prairie. Coastal terrace prairie is a native grassland community found on sandy, marine terraces within the zone of fog intrusion. This habitat is dominated by fairly tall (greater than 3 feet) sod and tussock-forming perennial grasses. Herbaceous annual species are typically scattered amongst the grasses. Much of California's coastal prairie habitat has been destroyed by agricultural conversion and development. The remaining areas are also threatened by the invasion of non-native species such as annual fescues (*Vulpia* sp.), nonnative bromes (*Bromus* sp.), and oats (*Avena* sp.). The state rarity status for coastal terrace prairie is very threatened (S2.1) with 2,000-10,000 acres remaining in the state. A form of coastal prairie community that intergrades with dunemat vegetation is located in the study area.

Northern Coastal Salt Marshes. Northern coastal salt marshes develop along the intertidal shores of bays, lagoons, and estuaries. The historic distribution of northern coastal salt marsh in Humboldt County and throughout California has been greatly reduced by agricultural conversion, diking, and coastal development. Native species commonly associated with northern coastal salt marsh include spearscale, tufted hairgrass, saltgrass, gumweed, salt rush, pickleweed, and silverweed. A number of sensitive plant species are found within this habitat type (refer to Table 1). The state rarity status for northern coastal salt marsh is threatened (state rank S3.2) with 10,000 to 50,000 acres remaining in the state. This natural community is located within and adjacent to the Phase II study area.

Northern Foredune Grassland. Northern foredune grassland habitat is located in active coastal dune areas where plants are subject to desiccating, salt-bearing winds. Perennial grasses that are up to 2.5 feet tall dominate this habitat. Coverage varies from dense to scattered. Dominant grass species in northern foredune habitat are almost always European dunegrass and American dunegrass. Succulent, perennial herbs and stunted shrubs approximately 10 inches tall are often interspersed amongst the grasses. Associate species typically include yellow sand verbena, silver burweed, and sea rocket in areas most exposed to the wind and beach morning glory, and beach primrose in more sheltered sites (Holland, 1986). The state rarity status for northern foredune grassland is very threatened (state rank S1.1) with less than 2,000 acres remaining in the state. The only northern foredune grassland reported by the CNDDB is from Humboldt County, at Lanphere Dunes (CDFG, 2007a). A form of northern foredune grassland association that intergrades with dunemat vegetation is located in the study area.

Sitka Spruce Forest. Sitka spruce grows in mild wet coastal climates and occurs in a narrow band along the Pacific coast from Northern California to Alaska. Sitka spruce forest is usually found growing on steep seaward upland slopes or topographically flat areas, but can also occur in wetlands, such as stream and river backwaters, bottoms, and floodplains. Species commonly associated with upland Sitka spruce forests include redwood (*Sequoia sempervirens*), western hemlock (*Tsuga heterophylla*), hazelnut (*Corylus cornuta*), cascara (*Rhamnus purshiana*), salmonberry (*Rubus spectabilis*), Douglas's iris (*Iris douglasiana*), false lily-of-the-valley (*Maianthemum dilatatum*), and sword fern. The state rarity status for Sitka spruce forest is very threatened (state rank S1.1) with less than 2,000 acres remaining in the state. The CNDDB reports four occurrences of Sitka spruce forest, all of which are located in Humboldt County (CDFG, 2007a).

Palustrine forested wetlands that are dominated with Sitka spruce have a different assemblage of species. The overstory typically consists of Sitka spruce, Oregon crabapple (*Malus fusca*), red alder, with a subcanopy of cascara, willows, twinberry (*Lonicera involucrate*), and wax myrtle (*Myrica californica*). Dominant shrubs include salmonberry, thimbleberry (*Rubus parviflorus*), and elderberry (*Sambucus racemosa*). Common herbaceous species are sword fern, false lily-of-the-valley, milk maids (*Cardamine californica*), Douglas iris, and grass species including Pacific reed grass (*Calamagrostis nutkaensis*).

No Sitka spruce forests are located within or adjacent to the study area.

5.5 Survey Results

5.5.1 Special Status Plant Species

Three special status plant species were detected within or immediately adjacent to the Phase II study area. These species include Point Reyes bird's-beak, Humboldt Bay owl's clover, and Lyngbye's sedge.

Point Reye's bird's-beak and Humboldt Bay owl's clover are located in salt marsh habitat adjacent to the footpath (Figure 3). Both species are scattered throughout the high quality salt marsh habitat and include more than 100 individuals of each species. No individuals were found within the study area/potential impact zone of the footpath. However, there is a network of trails in the salt marsh habitat that are regularly used by pedestrians, although these trails are not the footpath that is designated for use. Use of these unofficial trails results in trampling of the Humboldt Bay owl's clover and Point Reyes bird's-beak. Humboldt Bay owl's clover is also located outside of the study area along the southern bank of the south slough in salt marsh habitat (Figure 5). The proposed project is not expected to impact this occurrence because it is located outside of the trail improvement impact zone.

Lyngbye's sedge is located in the salt marsh habitat just south of the study area segment that runs from the railroad to the Herrick Avenue Park and Ride. One occurrence consists of approximately 5 plants and is located in the study area, a few feet from the edge of pavement along Pound Road (Figure 5). The other occurrence is located further south of Pound Road and consists of approximately 50 individuals (Figure 5).

5.5.2 Special Status Wildlife Species

A number of common avian species were observed in the Phase II study area during 2007. The species list is virtually identical to the list included in SHN (2007a); however, a few additional bird species have been added to Table 2. Forty-one avian species and two mammal species were observed during the field visits conducted on June 19, July 20, and August 2, 2007 (Table 2). Three of the 27 special status species know to occur within the vicinity of the study area were observed including the Osprey, Brown Pelican, and Double-crested Cormorant.

Table 2
Wildlife Species Observed Within and Adjacent to Phase II Study Area
Elk River Wildlife Trail Improvement Project, Humboldt County, California

Species	Area Where Bird was Observed
Bewick's wren	Phase II study area
Swainson's thrush	Phase II study area
Chestnut backed chickadee	Phase II study area
Red-winged blackbird	Phase II study area
Northern rough winged swallow	Phase II study area
Violet Green Swallow	Phase II study area
Cliff swallow	Phase II study area
Barn Swallow	Phase II study area
American Goldfinch	Phase II study area
Lesser Goldfinch	Phase II study area
House Sparrow	Phase II study area

Table 2 Wildlife Species Observed Within and Adjacent to Phase II Study Area Elk River Wildlife Trail Improvement Project, Humboldt County, California	
Song Sparrow	Phase II study area
Fox Sparrow	Phase II study area
White-crowned Sparrow	Phase II study area
Osprey	Over Bay/Estuary/Spit
Red-shouldered Hawk	Adjacent to Phase II study area
American Kestrel	Adjacent to Phase II study area
Forester's Tern	Estuary/Spit
Double-crested Cormorant	Estuary/Spit
Brown Pelican	Over Bay/Estuary/Spit
Great Egret	Over Bay /Estuary/Spit
Great Blue Heron	Over Bay /Estuary/Spit
European Starling	Phase II study area
Black-crowned Night Heron	Over Bay /Estuary/Spit
Cedar Waxwing	Phase II study area
Marbled Godwit	Estuary/Spit
Western Sandpiper	Estuary/Spit
Western Gull	Estuary/Spit
Herring Gull	Estuary/Spit
Black Phoebe	Phase II study area
Bushtit	Phase II study area
Marsh Wren	Phase II study area
California Towhee	Phase II study area
Western Meadowlark	Phase II study area
American Robin	Phase II study area
Purple Finch	Phase II study area
Ruby-crowned Kinglet	Phase II study area
Bufflehead	Estuary/Spit
Widgeon	Estuary/Spit
Mallard	Estuary/Spit
Northern Harrier	Adjacent to study area
Raccoon	Phase II study area
Gray Fox	Phase II study area

The Phase II study area provides abundant habitat for wildlife. Habitat to the west of the study area offers ample opportunities for viewing shorebirds and special status avian species such as Osprey, Double-crested Cormorant, and Brown Pelican. Although wildlife habitat is abundant in and adjacent to the study area, no rookeries, nests of special status species, or other features that are indicative of special status wildlife species were encountered within or immediately adjacent to the Phase II study area. The proposed project is not expected to result in an impact to special status wildlife species.

5.5.3 Vegetation/Wetland Impacts

Starting at the northern access parking lot and ending at the Herrick Avenue Park and Ride, trail segments were quantified for the aforementioned important resource variables. The absence of the east or west side of the trail in Table 3 means that resources will not be impacted in that area

therefore they were excluded from Table 3 (refer to Figures 3-5). Areas that were excluded are typically dominated by upland herbaceous species such as mustards, wild radish, Queen Ann's lace, and a variety of upland grass species.

Table 3
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
Main Trail					
North Slough	No Impact	0.0	No additional area for trail without filling the slough	TBD[1]	Salt marsh
1	No Impact	0.0	Trimming/ Clearing	275	Scrub-shrub
2	No Impact	0.0	Trimming	129.6	Scrub-shrub
3	No Impact	0.0	Large Stem Clearing	137.6	Scrub-shrub
4	Trimming	86.3	Trimming/ Clearing	757.9	Scrub-shrub
5	No Impact	0.0	Trimming	168.3	Scrub-shrub
6 East	Trimming	78.0	Trimming/ Clearing	479.9	Scrub-shrub
6 West	No impact	0.0	Trimming/ Clearing	265.1	Scrub-shrub
7 East	Trimming	109.9	Trimming/ Clearing	611.7	Scrub-shrub
7 West	Trimming	259.7	Trimming/ Clearing	563.5	Scrub-shrub
8 East	Trimming	139.6	Trimming/ Clearing	1009.7	Scrub-shrub
8 West	No Impact	0.00	Trimming/ Clearing	99.1	Scrub-shrub
9	Trimming	105.3	Trimming/ Clearing	390.3	Scrub-shrub
10	No Impact	0.0	Trimming/ Clearing	30.3	Scrub-shrub
11	No Impact	0.0	No Impact	0.0	N/A[2]
12 East	Trimming	142.7	Trimming/ Clearing	1114.3	Scrub-shrub
12 West	Trimming	44.8	Trimming/ Clearing	518.3	Scrub-shrub
13 East	Trimming	49.6	Trimming/ Clearing	587.6	Scrub-shrub
13 West	Trimming	92.6	Wetland	360.5	Emergent wetland
14 East	No Impact	0.00	Trimming/ Large Stem Clearing	784.6	Scrub-shrub

Table 3
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
14 West	Trimming	963.0	Trimming/ Large Stem Clearing	752.4	Scrub-shrub
15 East	No Impact	0.00	Trimming/ Clearing/ Wetland	2343.7	Scrub-shrub
15 West	Trimming/ Wetlands	2684.3	Trimming/ Clearing/ Wetland	2327.2	Scrub-shrub
16 East	No Impact	0.00	Trimming/ Large Stem Clearing/Wetland	630.6	Scrub-shrub
16 West	Trimming/ Wetlands	653.2	Trimming/ Large Stem Clearing/Wetland	602.7	Scrub-shrub
17 East	Trimming/ Wetlands	15.5	Trimming/ Clearing/ Wetland	206.6	Scrub-shrub
18 East	Trimming/ Clearing/ Wetlands	33.1	Trimming/ Clearing/ Wetland	264.4	Scrub-shrub
18 West	No Impact	0.00	Trimming/ Clearing/ Wetland	424.4	Scrub-shrub
19 East	No Impact	0.00	Trimming/ Clearing/ Wetland	14.6	Scrub-shrub
19 West	No Impact	0.00	Trimming/ Clearing/ Wetland	76.9	Scrub-shrub
20 East	No Impact	0.00	Trimming/ Clearing	119.5	Scrub-shrub
20 West	No Impact	0.00	Trimming/ Clearing	75.8	Scrub-shrub
21 East	No Impact	0.00	Trimming/ Clearing	186.8	Scrub-shrub
22 East	No Impact	0.00	No Impact	0.00	Scrub-shrub
22 West	No Impact	0.00	Trimming/ Clearing	199.2	Scrub-shrub
South Slough	Salt marsh	58.5	Salt marsh	258.8	Salt marsh
Foot Path					
23	No Impact	0.00	Salt Marsh	169.3	Salt marsh
24	No Impact	0.00	Trimming	758.0	Scrub-shrub

Table 3
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
25 A	Dunemat/Northern Foredune Grassland	493.65	Dunemat/Northern Foredune Grassland	1619.8	Sensitive Dunemat/Northern Foredune Grassland Habitat
25 B	Dunemat/Northern Foredune Grassland	493.65	Dunemat/Northern Foredune Grassland	1653.4	Sensitive Dunemat/Northern Foredune Grassland Habitat
26 A	Emergent wetland	36.4	Wetland	227.6	Emergent wetland
26 B	Emergent wetland	36.4	Wetland	239.8	Emergent wetland
Railroad to Herrick Avenue Park and Ride					
27 North	No Impact	0.00	Salt marsh	324.4	Salt marsh
27 South	No Impact	0.00	Salt marsh	100.3	Salt marsh

1. TBD: To Be Determined (once trail design is finalized).
2. N/A: Not Applicable

5.5.4 Main Trail

The most significant amount of vegetation trimming or clearing within the study area will occur along the main trail (Figures 3 and 4). Due to the difficultly of differentiating vegetation clearing impacts from wetland impacts in the portions of the study area were both impacts occur along the same trail segment, the following numbers correspond to segments with vegetation clearing only (Table 3). Approximately 2,072 sq. ft. of vegetation will be trimmed or cleared along the existing trail and approximately 9257 sq. ft. of vegetation will be trimmed or cleared within the impact zone of the main trail. Therefore, a total of approximately 11,328 sq. ft. (0.26 acres) of vegetation will be impacted along the main trail by trimming and/or clearing.

Approximately 3,386 sq. ft (0.08 acre) of freshwater wetlands will be impacted within the existing footprint of the main trail and approximately 7,252 sq. ft. (0.17 acre) of wetlands are located within the impact zone. The total freshwater wetland impact for the main trail segment portion of the study area is approximately 10,638 sq. ft. (0.24 acres; Figures 3 and 4).

The existing trail over the south slough is very narrow therefore trail improvements will result in impacts to salt marsh wetlands (Figure 5). Approximately 59 sq. ft. of salt marsh is located along the existing path and approximately 259 sq. ft. of salt marsh is located in the impact zone. Therefore, a total of approximately 317 sq. ft. of salt marsh will be impacted within the south slough.

5.5.5 Footpath

Trail improvements proposed along the footpath will result in some impacts to wetlands and the sensitive dunemat/northern foredune grassland habitat (Table 3).

Approximately 169 sq. ft. of salt marsh along the western side of the north slough will be impacted to expand the width of the footpath (Figure 3).

Impacts will occur to the sensitive dunemat/northern foredune grassland habitat both within the existing footpath and potential impact zone (Figure 3). Approximately 987 sq. ft. of dunemat/ northern foredune habitat will be impacted along the existing footpath; an additional 3,373 sq. ft. of this sensitive habitat will be impacted due to trail widening. Therefore, a total of approximately 4,260 sq. ft. (0.1 acre) of dunemat/northern foredune grassland will be impacted along the footpath.

The proposed trail improvements along the footpath will impact approximately 73 sq. ft. of wetlands within the existing footpath and approximately 467 sq. ft. of wetlands within the impact zone (Figure 3). Therefore, a total of approximately 540 sq. ft. of freshwater emergent wetlands will be impacted along the footpath for the proposed trail improvement project.

A small section of willows, approximately 758 sq. ft., will be impacted along section 24 of the footpath (Figure 3).

5.5.6 Railroad to Pound Road Parking Lot

Proposed trail improvements from the railroad to Pound Road parking lot does not appear to require any woody vegetation trimming or removal but is likely to result in impacts to salt marsh located down slope from the existing trail, within the impact zone. Proposed trail improvements along segment 27 north and 27 south may impact approximately 425 sq. ft. of salt marsh (Figure 5).

5.5.7 Pound Road Parking Lot to Herrick Avenue Park and Ride

Freshwater and salt marsh wetlands are located throughout this portion of the study area or immediately adjacent to it. A significant area of salt marsh habitat is located to the south of Pound Road. This area is frequently inundated by brackish/estuarine water from a network of tidal channels south of Pound Road. The majority of the salt mash is located outside the study area (Figure 5) but a small portion could be impacted if the new trail segment from the Pound Road Parking lot to the Herrick Avenue Park and Ride is located along the southern shoulder of Pound Road. The amount of impact will have to be determined once the final trail alignment is determined. Vegetation clearing within this portion of the study area appears to be limited to the west side of Pound Road, just north of the Herrick Avenue Park and Ride, if the new trail segment is constructed there.

Two brackish wetland pockets are located along the western and eastern sides of Pound Road (Figure 5). If the new trail segment is located along the southern/western side of Pound Road, the smaller of the two wetland pockets will be impacted. Final wetland impacts for this section of the study area will need to be determined once the final trail layout is designed.

5.5.8 Total Wetland Impacts

Based on the above, approximately 11,178 sq. ft. (0.26 acres) of freshwater wetland will be impacted and approximately 911 sq. ft. of salt marsh will be impacted by the proposed trail improvement project. The combined total wetland impacts in the study area are approximately 12,089 sq. ft. (0.28 acres).

6.0 Recommendations

6.1 Special Status Plant and Wildlife Species

There are currently high quality wildlife viewing opportunities throughout the ERWT. The proposed project provides numerous opportunities to promote bird watching within and adjacent to the study area and increase awareness of the importance of the ERWT for wildlife. Opportunities include, but are not limited to, bird watching stations and informational wildlife signs along the footpath and the main trail.

The ERWTIP is expected to result in an increase of use in this area so it is imperative that educational information be placed throughout trail area that directs people to keep themselves and their pets on designated trails to prevent impacts to the surrounding pristine habitat and abundant wildlife use. Additionally, the City should continue to detour/remove human encampments that degrade the habitat and wildlife use in the area.

Aside from increasing educational signs about wildlife use and protection within the area, limiting human encampments, and installing signage that directs users and their pets to stay on designated trail paths, the only other wildlife recommendation for the Phase II study area is in regards to northern red-legged frogs. Measures should be taken during trail construction improvements, particularly within the portions of the study area identified as wetlands, that if any northern red-legged frogs are encountered they be relocated to similar habitat in the vicinity to avoid impacts to this species.

During construction operations on the footpath, Best Management Practices (BMPs) should be utilized to avoid indirect impacts to the Point Reyes bird's-beak and Humboldt Bay owl's clover that are located in the salt marsh adjacent to the designated trail. BMPs include, but are not limited to, erosion control and construction exclusion fencing to define and restrict the construction footprint which will, in turn, reduce the potential for direct or indirect impacts from occurring to the special status species located adjacent to that portion of the study area.

To the extent possible, the Lyngbye's sedge that is located adjacent to the edge of pavement along Pound Road should be avoided. If that occurrence cannot be avoided, if this location is the least environmentally damaging for the placement of the new trail segment, then the occurrence should be transplanted to suitable habitat within the project area that is outside of potential impacts. The City should coordinate with California Department of Fish and Game regarding appropriate transplanting procedures, if the occurrence needs to be relocated.

6.2 Wetland/ESHA Recommendations

Wetlands should be avoided to the extent possible; however, portions of the main trail and footpath cannot be improved as proposed without resulting in impacts. SHN recommends coordinating with resource/jurisdictional agencies to verify wetland boundaries and to determine wetland mitigation ratios and suitable areas for conducting wetland restoration within the ERWT area for mitigating wetland impacts to a less than significant level.

Improvements to the footpath will result in impacts to the dunemat/northern foredune habitat, sections which consist of a fairly intact native species composition. Improving similar habitat that is degraded due to a predominance of exotic species may offset impacts to the dunemat/northern foredune habitat. Non-native species eradication in conjunction with a long-term management plan for the ERWT area that seeks to limit human encampments and exotic species establishment/spread within the area, is highly encouraged.

In areas where the existing trail is as wide as the proposed improvement width, or close to it, the existing trail width should be used rather than implementing improvements if those improvements would result in a wetland impact, such as in the area of the north slough. The existing trail appears to be wide enough to accommodate a multi-use trail without impacting the north slough.

The existing trail over the south slough is very narrow and needs significant improvement to meet trail improvement standards. In order to limit impacts, SHN recommends installing a bridge constructed out of transparent materials that limits shading and impacts to the wetland resources within that area.

Based on sensitive natural resources that have been identified and mapped from the Pound Road Parking Lot to Herrick Avenue Park and Ride (Figure 5), placement of the trail along the south side and corresponding west side of Pound Road to the Park and Ride will avoid most impacts with the possible exception of Lyngbye's sedge and salt marsh habitat. Extensive salt marsh habitat is located south of Pound Road, but there appears to be an ample amount of upland habitat, which does not contain special status species that would accommodate the new trail segment along the south and west sides of Pound Road up to the Herrick Avenue Park and Ride. There are a number of mitigation opportunities in the area immediately adjacent to this area if the new trail segment does result in wetland impact. Those opportunities include, but are not limited to, eradication of exotic plant species and restoring degraded salt marsh habitat.

7.0 References Cited

Bureau of Land Management. (March 2005). *Status Report: Abronia umbellata Lamark var. breviflora (Standley) L. A. Galloway (Pink sand verbena).* North Bend: BLM, Coos Bay District.

California Department of Fish & Game. (September 2007a). California Natural Diversity Database (CNNDB) RareFind 3 Program.<http://www.dfg.ca.gov/whdab/html/cnddb.html>. NR:DFG.

---. (September 2007b). Biogeographical Information and Observation System (BIOS) viewed at http://bios.dfg.ca.gov/

California Native Plant Society On-Line Inventory of Rare and Endangered Plants 2007 viewed at http://northcoastcnps.org/cgi-bin/inv/inventory.cgi

Chamberlain, C.D. (2006). *Environmental Variables of Northern California Lagoons and Estuaries and the Distribution of Tidewater Goby (Eucyclogobius newberryi)*. Arcata Fisheries Technical Report Number TR 2006-04. Arcata:USFWS, Arcata Fish and Wildlife Office,

Colwell, M.A., C.B. Millet, J.J. Meyer, J.N. Hall, S.J. Hurley, S.E. McAllister, A.N. Transou, and R.R. LeValley. (2005). "Snowy Plover Reproduction Success in Beach and River Habitats." *J. Field Ornithology* 76:373-382. NR: U.S. Geological Survey, Biological Resources Division.

Eicher, A. L. (1987). *Salt Marsh Vascular Plant Distribution in Relation to Tidal Elevation, Humboldt Bay, California.* A Thesis Presented to the Faculty of Humboldt State University. Arcata:HSU.

Hickman, J. C., ed. (1993). *The Jepson Manual Higher Plants of California.* Berkeley:University of California Press Berkeley.

Holland, R. F. (1986). *Preliminary Descriptions of Terrestrial Natural Communities of California*. Non-game Heritage Program. Sacramento:DFG. 156 pp.

Hunter, J. E., D. Fix, G. A. Schmidt, and J. C. Power. (2005). Atlas of the Breeding Birds of Humboldt County, California. Seattle:Reischling Press, Inc., 440 pgs.

Imper, D. K. (February 18, 2003). "Port Orford Sewage Offshore Discharge—Proposed Drilling Location." unpublished letter/email to Rob Burns, USFWS Roseburg Office. Arcata: USFWS.

Imper, D. K. and John O. Sawyer, PhD. (October 1992). *Botanical Survey of the Crescent City Marsh Wildlife Area*. Arcata:CSU & DFG.

Kalt, J. (Winter 2006). "Crescent City Marsh and Western Lily Threatened by Two Proposed Developments," *Darlingtonia*. Arcata: CNPS, North Coast Chapter.

LeValley, R. (2006). Summary of Western Snowy Plover detections and survey effort. Received by electronic mail on 11/14/2006. Arcata:Mad River Biologists.

Page, G. W., and L.E. Stenzel. (1981). "The Breeding Status of the Snowy Plover In California, *Western Birds* 12:1-39. Albuquerque: University of New Mexico.

Pearl, C.A. (2005). "Rana aurora aurora (Northern red-legged frog)"in *Amphibian Declines--The Conservation Status of United States Specie*s. Berkeley: University of California Press.

Redwood Community Action Agency, National Resources Services Division. (2002). *Elk River Access Project Recommendations*. Eureka:RCAA.

SHN Consulting Engineers & Geologists, Inc. (August 21, 2001). Sensitive Plant Survey, Happy Harp Timber Harvest Plan, Humboldt County, California. Eureka:SHN.

---. (January 2007a). Biological Assessment Elk River Wildlife Trail Improvement Project, Eureka, California. Eureka:SHN.

---. (January 2007b). Wetland Delineation for the Proposed Elk River Trail Improvement Project, Eureka, California. Eureka:SHN.

Swift, C. C., J. L. Nelson, C. Maslow, and T. Stein. (1989). *Biology and Distribution of the Tidewater Goby, Eucyclogobius newberryi (Pisces: Gobiidae) of California*. Los Angeles Co. Museum of Natural History. Contributions in Science 404:1-19. Los Angeles: Los Angeles Co. Museum of Natural History.

Tibor, David P., ed. (2001). *Inventory of Rare and Endangered Plants of California, 6th Edition; Special Publication No. 1*. Sacramento: California Native Plant Society.

U.S. Fish & Wildlife Service. (1993). "Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Pacific Coast Population of the Western Snowy Plover. 50 CFR Part 17; Vol. 58, No. 42: 12864-12874." Portland: USFWS.

---. (2001). *Western Snowy Plover (Charadrius alexandrinus nivosus) Pacific Coast Population Draft Recovery Plan*, xix + 630 pp. *Portland*: USFWS.

---. (2005a). *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover*. 50 CFR Part 17; Vol. 70, No. 188: 56970-57119. Portland:USFWS.

---. (2005b). California Brown Pelican Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B02L.html

---. (2005c). Bald Eagle Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B008.html

---. (2005d). Western Snowy Plover Natural History Information viewed (11-2-2005) at http://ecos.fws.gov/docs/life_histories/B07C.html

Appendix A

Wetland Delineation

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707/441-8855 • FAX: 707/441-8877 •shninfo@shn-engr.com

Reference: 006107.100

October 31, 2007

Mr. Gary Bird
City of Eureka
531 K Street
Eureka, CA 95501-1146

Subject: Wetland Delineation for Phase II of the Elk River Trail Improvement Project, Eureka, California

Dear Mr. Bird:

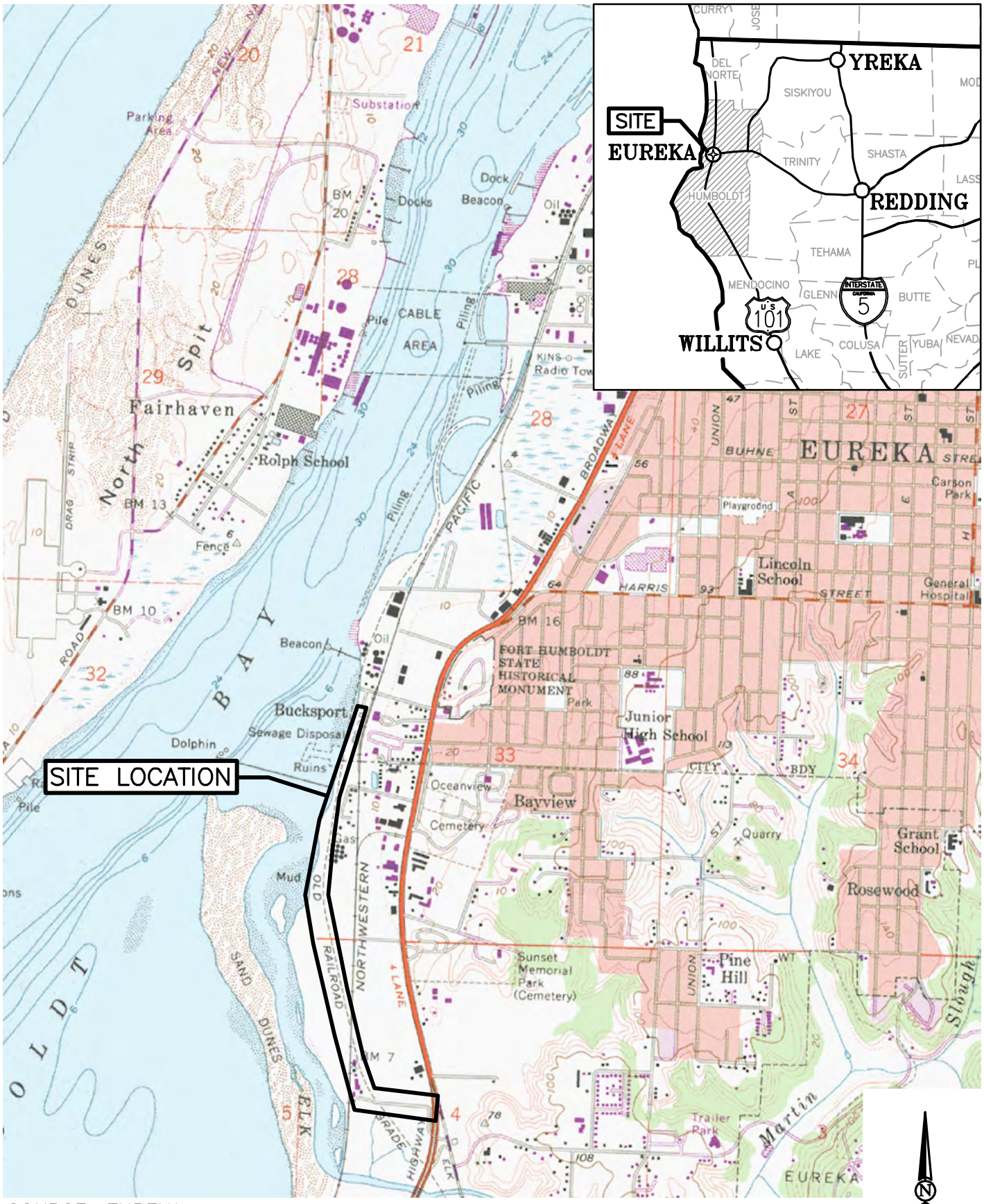
On June 19, July 20, August 2, and October 4, 2007, SHN Consulting Engineers & Geologists, Inc. (SHN) conducted site reconnaissance to complete a wetland delineation within the city limits of Eureka, California (west ½ of Section 33, Township 5 North, Range 1 West Humboldt Base Meridian; Figure 1). The study area includes the existing Elk River Wildlife Trail (ERWT), the terminus of which is located adjacent to the Eureka wastewater treatment plant extending south to the Herrick Avenue Park and Ride (Figure 1). The study area is located adjacent to the Elk River Estuary and includes the main trail segment of the ERWT south to the railroad tracks, a footpath located off the northern section of the main trail, the trail segment from the railroad to Pound Road, and both sides of Pound Road south to the Herrick Avenue Park and Ride (Figure 2). A 2002 aerial photograph obtained from the City of Eureka (City) was used as the base map for fieldwork and reporting.

1.0 Introduction

This wetland delineation was conducted in accordance with the U.S. Army Corps of Engineers (ACOE) 1987 *ACOE Wetland Delineation Manual* (Environmental Laboratories, 1987), *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (California Coastal Commission, 1994), and the City of Eureka General Plan Policy Document (City of Eureka, 1999).

Under Section 404 of the Clean Water Act, waters of the United States (including associated wetlands) are placed under federal jurisdiction of the ACOE. Furthermore, within California's coastal zone, the Coastal Act as administered by the California Coastal Commission (CCC) and local lead agencies affords wetlands additional protection and regulation. As stated in the 1987 *ACOE Wetland Delineation Manual* (Environmental Laboratories, 1987) and discussed further in the California Coastal Commission's *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (California Coastal Commission, 1994), specific criteria are used to identify wetlands or determine wetland status, including: hydrophytic vegetation, hydric soils, and wetland hydrology.

The objective of this wetland delineation was to identify and delineate all wetlands within the study area using the specific criteria, as stated above. The following definitions are from ACOE (Environmental Laboratories, 1987) unless specified otherwise. Hydrophytic vegetation is dominated by plant species known to be adapted to wetland sites, as specified in the regional index



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Phase II Eureka, California	Site Location Map Wetland Delineation SHN 006107.100
	October 2007	006107.100-LOCATION	Figure 1

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(Region 0) (Reed, 1988). Hydric soils have characteristics that developed in a reducing atmosphere, which exists when periods of prolonged soil saturation result in anaerobic conditions within the upper 12 inches of the soil profile. Hydric soils support the growth and regeneration of hydrophytic vegetation. Wetland hydrology is the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation. Wetland hydrology is demonstrated through direct or indirect evidence of flooding, ponding, or saturation for a significant portion of the growing season (Environmental Laboratories, 1987; California Coastal Commission, 1994). Wetlands identified in this report had the presence of all three indicators. Refer to Section 4.3.2 of this report for other regulated/sensitive habitats that were delineated.

2.0 Environmental Setting

The study area is located on primarily undeveloped land in the southwest portion of Eureka. For organizational purposes, portions of the study area are referenced as: 1) the main trail segment 2) footpath, 3) railroad to Pound Road Parking Lot, and 4) Pound Road Parking Lot south to the Herrick Avenue Park and Ride (Figure 2). Assessors Parcel Numbers (APNs) that correspond with the four sections of the study area are as follows:

- Main trail segment: APNs 019-331-02, 019-331-09, 019-271-04, and 302-171-01
- Footpath: APN 019-331-08
- Railroad to Pound Road Parking Lot: APNs 302-171-23, 302-181-02, 302-181-31
- Pound Road Parking Lot south to the Herrick Avenue Park and Ride: APNs 302-181-31, 302-171-37

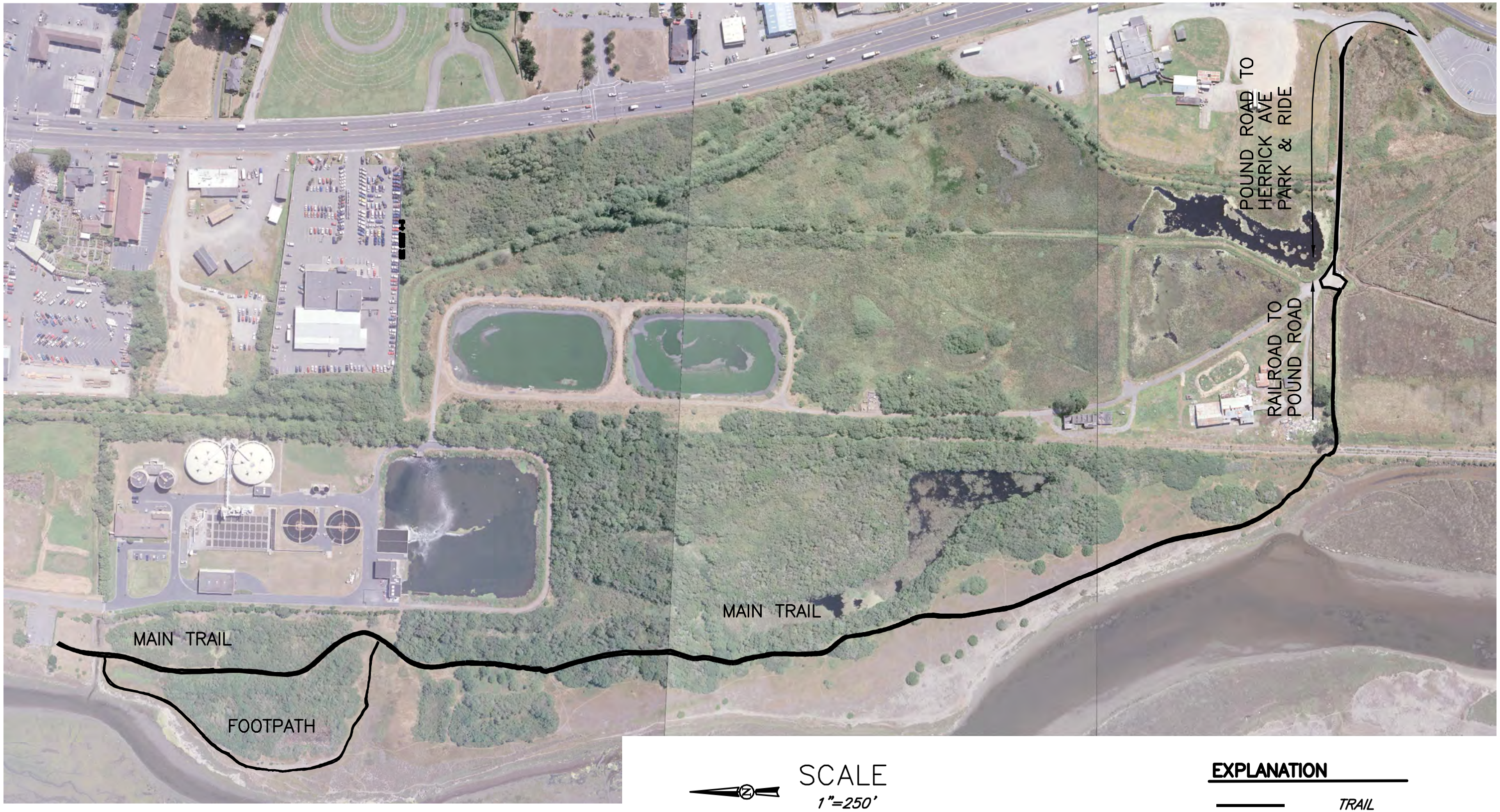
Habitats within the project area consist of uplands and wetlands, with several corresponding vegetation communities in each. Upland communities include disturbed and dunemat. Wetland communities consist of a variety of Estuarine intertidal and subtidal wetlands and Palustrine scrub-shrub and Palustrine emergent wetlands. The wetland community names are consistent with National Wetland Inventory (NWI) classification system (see section 3.2).

Eureka has a wet maritime climate. The average annual precipitation is 38.10 inches and the average annual air temperature is 53.2 degrees Fahrenheit (NOWData-NOAA online weather data, 2007).

3.0 Survey Methodology

The existing ERWT (hereafter, main trail) was systematically surveyed from the northern parking lot, south to the Herrick Avenue Park and Ride. The main trail was delineated into segments based on natural breaks in the vegetation communities or canopy cover. Each representative section, which included the four sections identified above, was visually assessed and quantified. Important resource variables included the presence of wetlands, Environmentally Sensitive Habitat Areas (ESHA), special status plant species, important wildlife areas, or the degree to which vegetation would be affected to allow for trail improvements, including but not limited to widening. This

Exhibit 6: Initial Study- Mitigated Negative Declaration for the Elk River Access Project



SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Phase II Eureka, California		Study Area Wetland Delineation SHN 006107.100
	October 2007	006107.100-STUDY-AREA	Figure 2

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report only includes the findings of the wetland delineation and impacts to ESHA. Refer to SHN 's *Biological Assessment for Phase II of the Elk River Wildlife Trail Improvement Project* (2007) for results of the other investigations.

The area of potential effects was assessed along the main trail segment using a 14-foot PVC pipe (i.e., measuring rod) which represented the desired/hypothetical trail width with an additional six feet added to each end of the measuring rod to represent the actual or potential disturbance area (26-foot total width).

The footpath trail was assessed for a 4-foot trail width, with four feet added at each end of the shortened measuring rod to represent the potential or actual disturbance area (12 feet total width). The study areas were defined based on the recommendations included in the *Elk River Access Project Recommendations* (RCAA, 2002), SHN's knowledge of the trail area, and coordination with the City of Eureka. The measuring rod was not used for the portion of the study area from the Pound Road parking lot to the Herrick Park and Ride because a study area could not be defined due to existing site constraints, such as fencing; however, sensitive resources were evaluated and mapped in that portion of the project area.

Each trail segment was quantified by walking the representative trail with the measuring rod centered on, and perpendicular to the trail, with the exception of the portion from the Pound Road parking lot to the Herrick Avenue Park and Ride. Where the measuring rod (or additional 6-feet {main trail} or 4-feet {foot path}) intercepted one of the aforementioned important resource variables, each was noted, mapped, and quantified to the degree possible, with some limited trimming to clearing large diameter stems. To the extent possible (i.e., based on canopy closure), a Trimble GeoXT hand-held Global Positions System (GPS) was used to map and quantify the existing trail, the presence of wetlands, and ESHA. Collected GPS data was post processed and differentially corrected for sub-meter accuracy and overlaid on the City's 2002 aerial photo.

3.1 Soils

Elevations within the study area range from sea level to approximately 15 feet above Mean Sea Level (MSL). Soil types for the study area are described in the *Soils of Western Humboldt County California* (McLaughlin and Harradine, 1966) as Sand Dune (SD), Bayside silty clay loam (Ba6), and may include portions of Residential, business, and industrial uses (UI). According to McLaughlin and Harradine (1966), Bayside silty clay loam is formed in very low-lying areas, is very poorly drained and is often affected by salts, and the surface horizon frequently puddles. Stabilized sand dunes consist of sands, which are not presently moving with the wind, and consist of an upland species composition. Soils characterized as residential, business, and industrial uses are originated from a variety of soils types but their origin composition has been altered due to development.

3.2 National Wetland Inventory

The U.S. Fish and Wildlife Service is the federal agency responsible for tracking wetland trends as well as maintaining a reliable inventory through its National Wetland Inventory (NWI; USDI,

1987). The NWI can be queried for specific locations throughout the United States to aid federal, state, and local agencies in making informed decisions concerning wetlands. The study area has both freshwater and estuarine wetland habitat types (Figure 3):

3.2.1 Freshwater Wetlands

According to the NWI[1] (USDI, 1987), portions of the study area and areas immediately adjacent to it contain a mix of freshwater wetland types:

- PEM/SS1C: Palustrine Emergent, Scrub-Shrub, Broadleaved deciduous, and Seasonally Flooded. This wetland type is a combination of two common freshwater wetlands in the Eureka area, Palustrine emergent seasonally flooded wetland that is dominated by herbaceous species and Palustrine scrub-shrub seasonally flooded wetland that is dominated by broadleaved deciduous trees and shrubs.
- PEM1/UBHx: Palustrine, emergent, persistent, unconsolidated bottom, permanently flooded, excavated. This permanently inundated wetland includes the wastewater treatment ponds. Vegetation consists of subemergent hydrophytes such as cattails (*Typha latifolia*), common tule (*Scirpus acutus* var. *occidentalis*), and pondweeds (*Potamogeton* spp.).
- PSS/EM1A: Palustrine scrub-shrub, emergent, persistent, temporarily flooded. This freshwater type contains a mix of broadleaved trees and shrubs and herbaceous hydrophytes, portions of the habitat may be periodically inundated.
- PEM1CD: Palustrine, emergent, persistent, seasonally flooded, well drained. This habitat is dominated by herbaceous hydrophytes and is inundated during the wet season but dry during summer months.

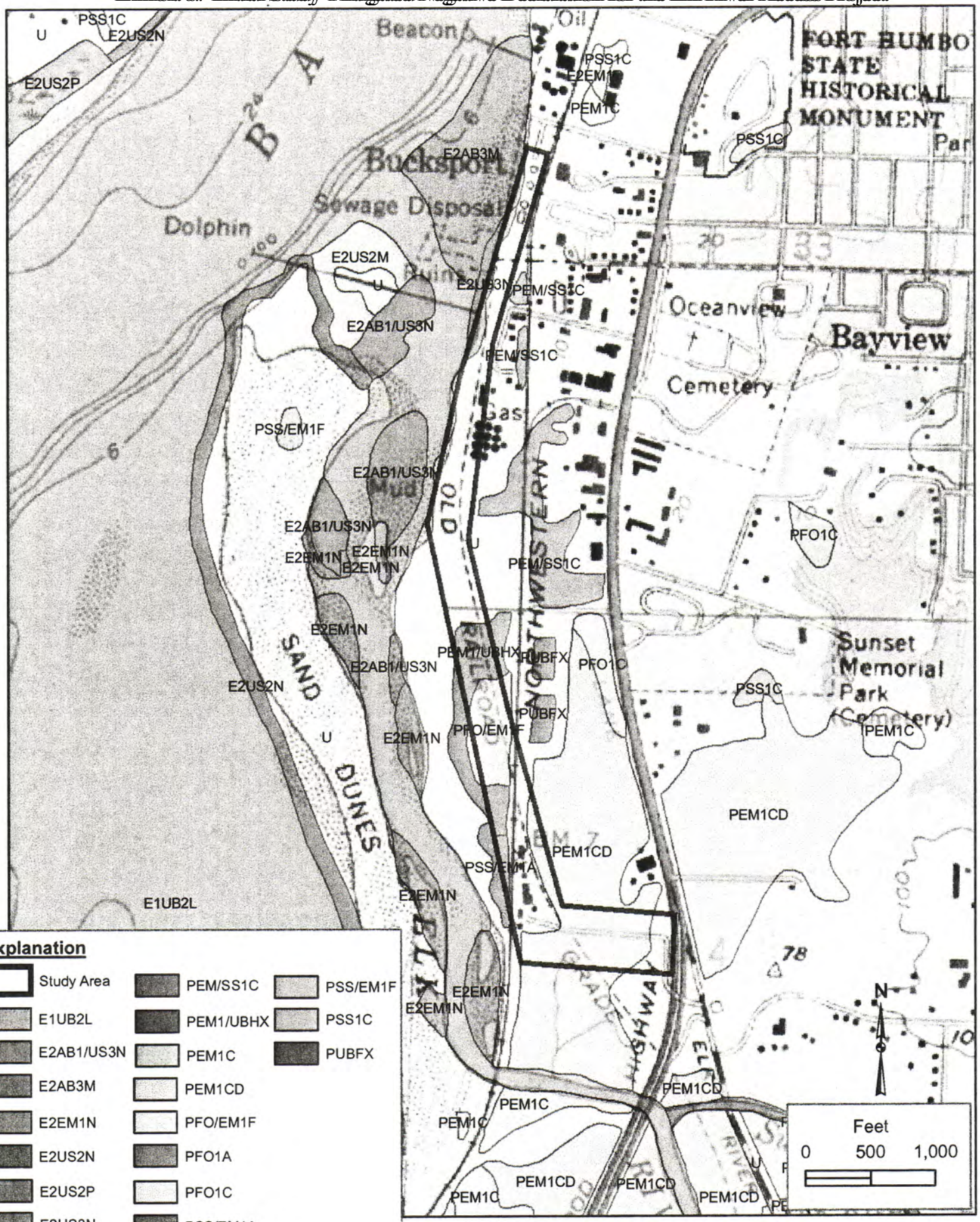
Habitat along the main trail segment primarily consists of Palustrine scrub-shrub with smaller sections of upland habitat and emergent wetlands. Emergent wetlands that are seasonally inundated are scattered throughout the Elk River trail area, but are generally located beyond the boundaries of the Phase II study area.

3.2.2 Estuarine Wetlands

The NWI (USDI, 1987) identifies several wetland class and sub-class types within the estuary and mouth of Elk River. The following four types apply to the study area and areas immediately adjacent to it:

- E2AB3M: Estuarine, intertidal, aquatic bed, rooted vascular, and irregularly exposed. The NWI identifies the tidally influenced wetlands in the northern portion of the study area as this type (Figure 3). This estuarine wetland is typical of salt marshes that are located near the Ordinary High Water Mark (OHWM) and are dominated with saline tolerant herbaceous hydrophytes and are regularly inundated.

[1] NWI maps are an excellent reference point for the presence or absence of wetlands; however, the resolution of the NWI tends to be on a macro scale, and can underestimate the full extent of a given wetland or miss wetlands that are dominated by herbaceous vegetation.



Note: All locations are approximate

SHN Consulting Engineers & Geologists, Inc.	City of Eureka Elk River Trail Improvement Project Phase II Eureka, California	NWI Map SHN 006107.100
	November 2007 | NWI_MAP	Figure 3

- E2US3N: Estuarine, Intertidal, Unconsolidated Shore, Mud, and Regularly Exposed (Figure 3). The NWI identifies the tidally influenced wetlands in the southern portion of the study area as this type. This estuarine wetland is often referred to as mudflat, is regularly tidally inundated, and may be vegetated with brown and green algae.
- E1UB2L: Estuarine, subtidal, unconsolidated bottom, sand, subtidal (Figure 3). This estuarine wetland represents Humboldt Bay.
- E2EM1N: Estuarine, intertidal, emergent, persistent, regularly flooded (Figure 3). This estuarine wetland is located below the OHWM, is usually only exposed during very low tides, and may be vegetated with eelgrass.

Estuarine intertidal irregularly exposed wetland habitat occupies a narrow band west of the study area, below and above the OHWM where there is frequent tidal inundation. This vegetation community is referred to as salt marsh. Estuarine habitat is located west of the study area from the north slough to the south slough and is interspersed along both sides of the study area from the railroad tracks south to the Herrick Avenue Park and Ride (Figures 4, 5, and 6). A significant amount of high quality salt marsh is located well above the OHWM and immediately adjacent to the footpath in the northern portion of the study area. The estuarine habitat is comprised entirely of herbaceous vegetation that is interspersed with patches of intertidal mudflat scattered with brown and green algae.

For detailed descriptions of vegetation communities, refer to SHN (2007).

4.0 Wetland Delineation

4.1 Methodology

Prior to conducting fieldwork, the SHN wetland delineation team reviewed existing information to assist with the determination of wetland boundaries within the study area. This review included *Soils of Western Humboldt County California* (McLaughlin and Harradine, 1966); NWI maps (USDI, 1987); U.S. Geological Survey (USGS) topographic quadrangle maps (Eureka); and aerial photographs.

Eight sample points were characterized in the study area for the aforementioned botanical, hydrological, and soil parameters, in accordance with the 1987 *ACOE Wetland Delineation Manual* (Environmental Laboratories, 1987; Figures 4, 5, and 6). Point locations were selected:

1. to achieve appropriate coverage and characterization of wetland and upland habitats;
2. to determine the approximate boundary line between wetlands and uplands by determining the extent of one or more key wetland criteria (hydrology, hydric soils, and hydrophytic vegetation); and
3. to document potential changes in the vegetative community.

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PROJ. NO. 006107	DATE 10/2007	5	FIGURE 5	CITY OF EUREKA ELK RIVER WILDLIFE TRAIL IMPROVEMENT PROJECT PHASE II EUREKA, CALIFORNIA **WETLAND DELINEATION**	DR DSL CHK APVD	NO. / DATE / REVISION / BY	SHN CONSULTING ENGINEERS & GEOLOGISTS, INC. 812 W. Wabash Eureka, CA 95501 (707)441-8855 FAX (707)441-8877

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WETLAND DELINEATION

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812 W. Wabash Eureka, CA 95501 (707)441-8855 FAX (707)441-8877

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FIGURE 6
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All sample points were dug to a depth of 16 inches. Due to the nature of the proposed trail improvement project, sample points were selected based on areas proposed for impact. A limited number of sample points were characterized in the Phase II study area due to the linear nature of the project. Additionally, the eight points characterize the various vegetation types in the area, which allows for extrapolation to other similar vegetation types and elevations within the study area. Soil profile depths were measured from the surface to each horizon, and the thickness of each horizon was also measured; the Munsell Soil Color Chart (Kollmorgen, 1990) was referenced to determine the matrix and mottle colors (if present). Soils were closely inspected for hydric soil indicators as well as primary and secondary hydrology indicators. Each pit was located by Global Positioning System (GPS), flagged with a pine stake, and refilled at the conclusion of data collection.

At each sample point, the vegetation stratum was inspected and identified to the lowest taxonomic level (species) possible at the time of the field visit. Relative percent cover of each plant species was visually estimated within the sample point and within each stratum. The 50/20 method[2] was applied to each stratum to determine the dominant plant species and to satisfy the hydrophytic vegetation criteria. The herbaceous stratum was inspected at a 5-foot radius centered on the sample point; shrub and tree strata were inspected similarly at a 30-foot radius. The wetland indicator status of plant species for this investigation was based on the regional index (Reed, 1988); botanical nomenclature follows *The Jepson Manual, Higher Plants of California* (Hickman, 1993).

Seven of the eight sample points that were characterized had normal wetland conditions, as defined by ACOE (Environmental Laboratories, 1987). However, sample point 5 was characterized as atypical due to the presence of non-native soils. The ACOE defines an atypical situation as one in which effects from human activities or natural events that have resulted in altering positive wetland hydrology, soil, or vegetation indicators (Environmental Laboratories, 1987).

4.2 Results

For each sample point, an ACOE Routine Wetland Determination Data Form was completed. Copies of all data forms are included in Attachment 1. Impacts for each trail segment are included in Table 1 and summarized below.

[2] The 50/20 rule: for each stratum of the plant community, dominant species are the most abundant species that immediately exceed 50 percent of the total dominance measure for the stratum, plus any additional species comprising 20 percent or more of the total dominance for that stratum (Environmental Laboratory, 1987).

Table 1
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
Main Trail					
North Slough	No Impact	0.0	No additional area for trail without filling the slough	TBD[1]	Salt Marsh
1	No Impact	0.0	Trimming/ Clearing	275	Scrub-shrub
2	No Impact	0.0	Trimming	129.6	Scrub-shrub
3	No Impact	0.0	Large Stem Clearing	137.6	Scrub-shrub
4	Trimming	86.3	Trimming/ Clearing	757.9	Scrub-shrub
5	No Impact	0.0	Trimming	168.3	Scrub-shrub
6 East	Trimming	78.0	Trimming/ Clearing	479.9	Scrub-shrub
6 West	No impact	0.0	Trimming/ Clearing	265.1	Scrub-shrub
7 East	Trimming	109.9	Trimming/ Clearing	611.7	Scrub-shrub
7 West	Trimming	259.7	Trimming/ Clearing	563.5	Scrub-shrub
8 East	Trimming	139.6	Trimming/ Clearing	1009.7	Scrub-shrub
8 West	No Impact	0.00	Trimming/ Clearing	99.1	Scrub-shrub
9	Trimming	105.3	Trimming/ Clearing	390.3	Scrub-shrub
10	No Impact	0.0	Trimming/ Clearing	30.3	Scrub-shrub
11	No Impact	0.0	No Impact	0.0	N/A[2]
12 East	Trimming	142.7	Trimming/ Clearing	1114.3	Scrub-shrub
12 West	Trimming	44.8	Trimming/ Clearing	518.3	Scrub-shrub
13 East	Trimming	49.6	Trimming/ Clearing	587.6	Scrub-shrub
13 West	Trimming	92.6	Wetland	360.5	Emergent wetland
14 East	No Impact	0.00	Trimming/ Large Stem Clearing	784.6	Scrub-shrub

Table 1
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
14 West	Trimming	963.0	Trimming/ Large Stem Clearing	752.4	Scrub-shrub
15 East	No Impact	0.00	Trimming/ Clearing/ Wetland	2343.7	Scrub-shrub
15 West	Trimming/ Wetlands	2684.3	Trimming/ Clearing/ Wetland	2327.2	Scrub-shrub
16 East	No Impact	0.00	Trimming/ Large Stem Clearing/Wetland	630.6	Scrub-shrub
16 West	Trimming/ Wetlands	653.2	Trimming/ Large Stem Clearing/Wetland	602.7	Scrub-shrub
17 East	Trimming/ Wetlands	15.5	Trimming/ Clearing/ Wetland	206.6	Scrub-shrub
18 East	Trimming/ Clearing/ Wetlands	33.1	Trimming/ Clearing/ Wetland	264.4	Scrub-shrub
18 West	No Impact	0.00	Trimming/ Clearing/ Wetland	424.4	Scrub-shrub
19 East	No Impact	0.00	Trimming/ Clearing/ Wetland	14.6	Scrub-shrub
19 West	No Impact	0.00	Trimming/ Clearing/ Wetland	76.9	Scrub-shrub
20 East	No Impact	0.00	Trimming/ Clearing	119.5	Scrub-shrub
20 West	No Impact	0.00	Trimming/ Clearing	75.8	Scrub-shrub
21 East	No Impact	0.00	Trimming/ Clearing	186.8	Scrub-shrub
22 East	No Impact	0.00	No Impact	0.00	Scrub-shrub
22 West	No Impact	0.00	Trimming/ Clearing	199.2	Scrub-shrub
South Slough	Salt marsh	58.5	Salt marsh	258.8	Salt marsh

Table 1
Vegetation and Wetland Impacts
Elk River Wildlife Trail Improvement Project, Phase II, Eureka, California

Trail Segment No.	Existing Trail	14-Foot Impact Length (sq. ft.)	Additional 6-foot Width (each side of trail)	6-Foot Impact Length (sq. ft.)	Habitat Type to be Affected per Trail Segment
Foot Path					
23	No Impact	0.00	Salt marsh	169.3	Salt marsh
24	No Impact	0.00	Trimming	758.0	Scrub-shrub
25 A	Dunemat/Northern Foredune Grassland	493.65	Dunemat/Northern Foredune Grassland	1619.8	Sensitive Dunemat/Northern Foredune Grassland Habitat
25 B	Dunemat/Northern Foredune Grassland	493.65	Dunemat/Northern Foredune Grassland	1653.4	Sensitive Dunemat/Northern Foredune Grassland Habitat
26 A	Emergent wetland	36.4	Wetland	227.6	Emergent wetland
26 B	Emergent wetland	36.4	Wetland	239.8	Emergent wetland
Railroad to Herrick Avenue Park and Ride					
Trail Segment	**Existing Trail**	**Impact Length 14 Foot**	**Additional 6 foot Width**	**Impact Length 6 Foot**	**Habitat Type to be Affected per Trail Segment**
27 North	No Impact	0.00	Salt marsh	324.4	Salt marsh
27 South	No Impact	0.00	Salt marsh	100.3	Salt marsh

1. TBD: To Be Determined (once trail design is finalized).
2. N/A: Not Applicable

Although portions of the study area tend to dry out due to the lack of an impermeable confining layer, hydrologic factors, such as a high and fluctuating water table and high precipitation exert an overriding influence on the plant species that occur in the wetland portions (Environmental Laboratories, 1987), as well as the morphology and structure of the soils present in the study area. The majority of the study area included some species considered to be hydrophytic. However, in Humboldt County, many species listed as facultative wetland indicators occur frequently in transitional or upland habitats, and are poor indicators of wetland status in the absence of the other corroborating soils and hydrological factors. Overall, the combination of hydrophytic vegetation, hydric soils, and saturation or ponding was used in this delineation to define wetlands.

Refer to SHN (2007) for recommendations to reduce potential impacts.

4.2.1 The Main Trail

Eight sample points were inspected to characterize wetland conditions along the main trail (sample points 1-8; Attachment 1; Figures 4, 5, and 6). Sample points 1-3 had a predominance of hydrophytes, and included a mix of scrub-shrub and herbaceous species. These sample points were inspected

during the dry season; therefore, primary wetland hydrology was only encountered at sample point 3. Secondary indicators were observed in sample points 1 and 2. Soils are low in chroma (10YR2/1 and 10YR 4/2) and sample points 2 and 3 have mottles.

Sample point 4 has a mix of upland and wetland species, but had a predominance of upland species. No hydrology indicators were detected. The soil is low in chroma (10YR 4/2) but lacked redoximorphic features.

Approximately 3,386 sq. ft (0.08 acre) of freshwater wetlands will be impacted within the existing footprint of the main trail and approximately 7,252 sq. ft. (0.17 acre) of wetlands are located within the impact zone (Figures 4 and 5). The total freshwater wetland impact for the main trail segment portion of the study area is approximately 10,638 sq. ft. (0.24 acres).

The existing trail over the south slough is very narrow, therefore trail improvements will result in impacts to salt marsh wetlands (Figure 6). Approximately 59 sq. ft. of salt marsh is located along the existing path and approximately 259 sq. ft. of salt marsh is located in the impact zone. Therefore, a total of approximately 317 sq. ft. of salt marsh will be impacted within the south slough.

The most significant amount of vegetation trimming or clearing within the study area will occur along the main trail (Figures 4, 5, and 6). Due to the difficultly of differentiating vegetation clearing impacts from wetland impacts in the portions of the study area were both impacts occur along the same trail segment, the following numbers correspond to segments with vegetation clearing only (Table 1). Approximately 2,072 sq. ft. of vegetation will be trimmed or cleared along the existing trail and approximately 9257 sq. ft. of vegetation will be trimmed or cleared within the impact zone of the main trail. Therefore, a total of approximately 11,328 sq. ft. (0.26 acres) of vegetation will be impacted along the main trail by trimming and/or clearing.

4.2.2 Footpath

Approximately 169 sq. ft. of salt marsh along the western side of the north slough will be impacted to expand the width of the footpath (Figure 4).

Two wetland sample points, 7 and 8, were characterized along the footpath (Figure 4). Sample point 7 consists of upland species, including the upland sand dune sedge (*Carex pansa*). Soils are low in chroma in the upper horizon (10YR 2/2) but lighter in the lower horizon (10YR 4/3). No redoximorphic features or hydrology indicators were detected in the soil profile for sample point 7. Sample point 8 is dominated by hydrophytes including slough sedge and Pacific bramble. Soils are low in chroma (10YR 2/2), have abundant mottles, and were saturated in the upper 12 inches.

The proposed trail improvements along the footpath will impact approximately 73 sq. ft. of wetlands within the existing footpath and approximately 467 sq. ft. of wetlands within the impact zone (Figure 4). Therefore, a total of approximately 540 sq. ft. of freshwater emergent wetlands will be impacted along the footpath for the proposed trail improvement project.

A small section of willows, approximately 758 sq. ft., will be impacted along section 24 of the footpath (Figure 4).

4.2.3 Railroad to Pound Road Parking Lot

Wetland sample point(s) were not characterized in this portion of the study area because the wetland/upland boundary is readily apparent. The existing trail is located on a fill prism and there is obvious salt marsh habitat downslope from the trail, along both the north and south sides of the path (Figure 6). Proposed trail improvements along segment 27 north and 27 south will impact approximately 425 sq. ft. of salt marsh (Figure 6). Trail improvements in this portion of the study area do not require vegetation trimming and/or clearing.

4.2.4 Pound Road Parking Lot to Herrick Avenue Park and Ride

One wetland sample point was characterized in this portion of the study area (sample point 5), which is located along the north side of Pound Road (Figure 6). Vegetation is dominated by herbaceous emergent hydrophytes and secondary hydrology indicators were noted. Soils consist of one profile and appear to be non-native road fill based on the presence of rocks, rubble, bark, and charcoal (atypical situation). Soils in sample point 5 are not low in chroma (10YR3/4) but due to the abundance of mottles throughout the profile (7.5YR 4/6), soils at this location are considered hydric.

A significant area of salt marsh habitat is located to the south of Pound Road. This area is frequently inundated by brackish/estuarine water from a network of tidal channels in that area. The majority of the salt marsh is located outside the study area (Figure 6) but a small portion could be impacted if the new trail segment from the Pound Road Parking lot to the Herrick Avenue Park and Ride is located along the southern shoulder of Pound Road. The amount of impact will have to be determined once the final trail alignment is determined. Vegetation clearing within this portion of the study area appears to be limited to the west side of Pound Road, just north of the Herrick Avenue Park and Ride, if the new trail segment is constructed there.

Two brackish wetland pockets are located along the western and eastern sides of Pound Road (Figure 6). If the new trail segment is located along the southern/western side of Pound Road, the smaller of the two wetland pockets will be impacted. Final wetland impacts for this section of the study area will need to be determined once the final trail layout is designed.

4.3 Total Wetland Impacts

Based on the above, approximately 11,178 sq. ft. (0.26 acres) of freshwater wetland will be impacted and approximately 911 sq. ft. of salt marsh will be impacted by the proposed trail improvement project. The combined total wetland impacts in the study area are approximately 12,089 sq. ft. (0.28 acres).

4.3.1 Estuarine Habitat

Estuarine/salt marsh habitat located adjacent to the study area was not characterized with sample points because it either clearly resides outside potential impact zones or indicators are readily apparent due to the presence of wetland hydrology. Because the limits of that habitat can easily be delineated, a significant amount of salt marsh habitat is shown on Figures 4-6.

4.3.2 Sensitive Areas

Wetlands within the Coastal Zone are under the regulation of a number of agencies including ACOE, CCC, California Department of Fish and Game (DFG), U.S. Fish and Wildlife Service (USFWS), and local lead agencies. The definition of a wetland varies among the agencies ranging from a stricter mandate regarding the quality of water resources to a broader mandate concerning the protection of sensitive habitats (DFG, 2007). ACOE regulates wetlands pursuant to Section 404 of the Clean Water Act and requires the presence of all three wetland criteria to meet the ACOE definition of jurisdictional wetlands. CCC and DFG have broader mandates including the protection of coastal resources, biological resources (biodiversity), and ecological functions. Therefore the presence of all three wetland criteria is not required to identify these environmentally sensitive areas (CCC, 1994; DFG, 2007).

For the purpose of this study, areas that provide important habitat for wildlife, contribute to the functional values of adjacent wetlands, and/or provide habitat for special status species are considered ESHA and have been identified throughout the study area. Areas identified as ESHA are not meant to meet a strict regulatory definition of any resource agency but instead have been delineated based on SHN's scientific understanding of the important values of these areas and our best professional judgment. Habitat that has been delineated as ESHA is consistent with Section 6.A.6 of the City of Eureka General Plan Policy Document (City of Eureka, 1999).

ESHA that will be impacted by the proposed project includes the dunemat/northern foredune grassland habitat along a portion of the footpath (Figure 4). This habitat is located in other portions of the study area, such as in the southern portion of the main trail, but the existing trail is wide enough so trail improvements are not expected to result in impacts there. Approximately 987 sq. ft. of dunemat/northern foredune habitat will be impacted along the existing footpath; an additional 3,373 sq. ft. of this sensitive habitat will be impacted due to trail widening. Therefore, a total of approximately 4,260 sq. ft. (0.1 acre) of dunemat/northern foredune grassland will be impacted along the footpath.

Other ESHA has been identified in the project area and includes the willow thickets and substantial areas of shrubs that provide habitat for wildlife (Figures 4, 5, and 6). The amount of vegetation that will be impacted was quantified because it may be subject state and local regulations. The total amount of vegetation, not including wetland and dunemat/northern foredune grassland habitat that will be impacted in the study area is approximately 12,086 sq. ft. (0.28 acres).

5.0 Limitations

The conclusions in this wetland delineation reflect the best professional judgment of the SHN wetland delineation team and should not be considered final until verified by the ACOE and CCC, as well as reviewed by the DFG, and/or other local agencies with interest in wetland regulation/conservation. Property boundaries and wetland/upland mapping are approximate. Once the final trail layout is designed, particularly from the Pound Road Parking Lot to Herrick Avenue Park and Ride, wetland impact areas may increase. Furthermore, the conclusions in this report represent a "snapshot in time" and it is possible that not all herbaceous species were present at the time of the fieldwork. In addition, the delineation was not completed at the height of the wet season.

Please feel free to call us anytime at 707-441-8855 regarding the results of this report or the project.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

for Aimee C. Weber, CAE
Botanist and Ecologist

ACW:lms
Attachment 1. Wetland Delineation Data Forms

References Cited

California Coastal Commission. (1994). *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone*. Downloaded on 11-11-2005 at http://www.coastal.ca.gov/wetrev/wettitle.html.

California Department of Fish & Game. (2007). *California Fish and Game Code Handbook, 2007 Edition*. Charlottesville: Gould.

City or Eureka. (1999). *City or Eureka General Plan and Policy Document*. Eureka:City of Eureka.

Environmental Laboratory. (1987). C*orps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*. Vicksburg: U.S. Army Engineers Waterways Experiment Station.

Hickman, J.C., ed. (1993). *The Jepson Manual*, *Higher Plants of California*. Berkeley: University of California Press.

Kollmorgen Instruments Corporation. (1990). *Munsell Soil Color Charts*. Baltimore: Macbeth Division of Kollmorgen Instruments Corporation.

McLaughlin, James and F. Harradine. (November 1965). *Soils of Western Humboldt County Californi*a. Davis: UC Davis, Department of Soils and Plant Nutrition and County of Humboldt County, California.

National Oceanic & Atmospheric Administration. (viewed January 2007). NOAA online weather data, years 1971-2000. http://nowdata.rcc.acic.org/EKA/pubACIS_results. NR:NOAA.

Redwood Community Action Agency, National Resources Services Division. (2002). *Elk River Access Project Recommendations*. Eureka:RCAA.

Reed, P.B. (1988). National List of Plant Species That Occur in Wetlands: California (Region 0). Biological Report 88(26.10), U.S. Fish and Wildlife Service. Springfield:U.S. Dept. of Commerce, National Technical Information Center.

SHN Consulting Engineers & Geologists, Inc. (2007). *Biological Resources Assessment for Phase II of the Elk River Wildlife Trail Improvement Project*. Eureka:SHN.

U.S. Department of the Interior. (1987). "National Wetland Inventory Map," Eureka California Quadrangle. U.S. Department of the Interior Fish and Wildlife Service. Downloaded on 12-23-2006 at http://www.fws.gov/nwi/.

U.S. Geological Survey. (1972). 7.5-minute USGS Quadrangle Map: Eureka, California. NR:USGS.

Attachment 1

Wetland Delineation Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: Col E
Investigator: ACW & MUH
x Sample point on West Side of main trail at end of Zone A

Date: 7-20-07
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? Yes (circled) No
Is the site significantly disturbed (Atypical Situation)? Yes No (circled)
Is the area a potential Problem Area? Yes No (circled)
(If needed, explain on reverse.)

Community ID: herbaceous
Transect ID: [redacted]
Plot ID: 1 7-20-07

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Ranunculus repens	H	FACW	9.		
2. Potentilla anserina	H	OBL	10.		
3. Lotus corniculatus	H	FAC	11.		
4. Holcus lanatus	H	FAC	12.		
5. Rubus ursinus	H	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: ____ (in.)
- Depth to Free Water in Pit: ____ (in.)
- Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test passes
- ____ Other (Explain in Remarks)

Remarks: No standing water but lower horizon is moister than top - peak of wet season would probably be inundated to surface

SOILS

Map Unit Name (Series and Phase): _____

Drainage Class _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7"	A	10YR 3/2	—	—	sandy loam
7-16"	B	10YR 4/1	—	—	silty sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils — potential
- ____ Listed on Local Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: More organics in bottom layer - charcoal in profile

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: ACOE wetland

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase I	Date: 7-20-07
Applicant/Owner: C S/F	County: Humboldt
Investigator: ACW & MWH	State: CA

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID: herbaceous
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: 2 7-20-07
(If needed, explain on reverse.)			

on westside of main trail

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Rubus ursinus	H	FACW	10.		
3. Lonicera involucrata	S	FAC	11.		
4. Aster chilensis	H	FAC	12.		
5. Rhamnus purshiana	S	NI	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 4/4 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other
- ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches sat. in upper 16"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

Bottom profile moist - would be saturated throughout majority of wet season and/or standing water

GPS

SOILS

Map Unit Name (Series and Phase): _____

Drainage Class _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16"	A	10YR 4/2	—	—	sand
16-16+"	B	10YR 5/2	10YR 4/6	see below	sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks profile may change color when exposed to air / anaerobic in bottom
- mottles indiscrete & widespread

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks Hydrology is inferred at this sample point, but based on dry season sampling, clearly meets all 3 indicators

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: CDE
Investigator: ACW & MVH

Date: 7-20-07
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Scrub-Shrub
Transect ID:
Plot ID: 3 - West Side of Main Trail

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL	9.		
2. Rubus ursinus	↓	FACW	10.		
3. Ranunculus repens		FACW	11.		
4. Salix lasiolepis	S	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: to Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: this pit would be inundated to surface during wet season

SOILS

Map Unit Name (Series and Phase): _____

Drainage Class _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-1"	O	—	—	—	organic
1-3"	A	10YR 2/1			sandy loam
3-16"	B	10YR 4/2	10YR 4/6 & 10YR 4/1		sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks lots of depletions & concentrations mottles) (10YR 4/6) 10YR 4/1

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: City of Eureka
Investigator: ACW & MVH

Date: 7-20-07
County: Humboldt
State: CA.

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: Scrub-Shrub
Transect ID:
Plot ID: 4

Sample point located on east side of main trail - Southern section

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix hookeriana	S	FACW	9.		
2. S. lasiolepsis	S	FACW	10.		
3. Anthoxanthum odor	H	FACU	11.		
4. Rubus ursinus		FACW	12.		
5. Plantago lanceolata		FAC-	13.		
6. Cynosurus echin.		UPL	14.		
7. Briza maxima		UPL	15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 3/7 = 43%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:
no hydrology

SOILS

Map Unit Name (Series and Phase): _____

Taxonomy (Subgroup) _____

Drainage Class _____

Field Observations Confirm Mapped Type? Yes No

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-1"	O				organic
1-16"	A	10YR 4/2	—	—	sand

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- X Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks

no organic streaking

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? (Yes) No only low chroma

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks

no wetland indicators except for the presence of Salix - but they are deep rooted

Approved by HQUSACE 3/92

Qualifies as ESHA

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: City of E
Investigator: MJH & ACW

Date: 8-2-07
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)
north side of pond road

Community ID: herbaceous
Transect ID:
Plot ID: 5
look at other sheets

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Potentilla anserina	H	OBL	9.		
2. Holcus lanatus		FAC	10.		
3. Juncus effuses		OBL	11.		
4. Agrostis exarata		FACW	12.		
5. Rumex crispa		FACW	13.		
6.			14.		
7.			15.		
8.			16.		

"Percent of Dominant Species that are OBL, FACW or FAC" (excluding FAC-). 5/5 = 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test PASSES
___ Other (Explain in Remarks)

Remarks:
Soil would inundated or saturated to surface throughout

SOILS

Map Unit Name (Series and Phase): _____

Drainage Class _____

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup) _____

Profile Descriptions:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/4	7.5YR 4/6 (Concentration	Abundant prominent	Sandy loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- Gleyed or Low-Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- Other (Explain in Remarks)

Remarks

* soil non-native (charcoal, bark, rocks) looks like road bill - a lot of out of place - Concentrations more abundant than depletions Although soil is not low Chroma, evidence of redoximorphic features in the non-native soil indicates hydric soils.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks

Pit located on north side of Pond Road Due to disturbed soils, this sample point is atypical.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: City of Eureka
Investigator: A. Weber / R. Litzky

Date: 10/4/07
County:
State:

Do Normal Circumstances exist on the site? Yes / No
Is the site significantly disturbed (Atypical Situation)? Yes / No
Is the area a potential Problem Area? Yes / No
(If needed, explain on reverse.)

Community ID: Scrub-shrub
Transect ID:
Plot ID: 10 westside main trail

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Rubus ursinus	H	FACW*
2. Carex obnupta	H	OBL
3. Ranunculus repens	H	FACW
4. Holcus lanatus	H	FAC
5. Myrica californica	S	FAC+
6. Salix lasiolepis	T	FACW
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Pit would likely be inundated throughout wet season

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1/11	O	—	—	—	organic
11-7"	A	10YR 2/2	—	—	loam
7-16"	B	10YR 4/3	*	—	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: * mottles present - significant but indistinct and minute so couldn't get colors

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Elk River Wildlife Trail Phase II
Applicant/Owner: City of Eureka
Investigator: ACW

Date: 10-4-07
County: Humboldt
State: CA.

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: herbaceous
Transect ID:
Plot ID: 7

footpath

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex pansa		FACW	9.		
2. Anthoxanthum odoratum		FACU	10.		
3. Holcus lanatus		FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/3 = 33%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: no hydrology

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1"	O	–	–	–	sand
1-8"	A	10YR 2/2	–	–	sand
8-16"	B	10YR 4/3	–	–	sand

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	(Yes) No	

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: located along south side of footpath – near the Carex obnupta wetland

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: ERWT Phase II
Applicant/Owner: C of Eureka
Investigator: ACW

Date: 10-4-07
County: Humboldt
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: herbaceous
Transect ID:
Plot ID: 8

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Carex obnupta	H	OBL
2. Rubus ursinus	↓	FACW
3. Holcus latus		FAC
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/3 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: to surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: This sample point probably fills with free water during peak of wet season

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____
Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	O	—	—	—	sand
1-6"	A	10YR 2/2	—	—	↓
6-16"	B	10YR 4/3	*		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: lots of mottles but due to the course sand and small mottle size, color can't be discerned

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: this sample point represents a small section of emergent wetland located at the eastern end of the footpath

Approved by HQUSACE 3/92

Appendix C

Photographs

Photo 1.
Dunemat/northern dune grassland habitat adjacent to the southern portion of the main trail segment. Photo taken by SHN on 6-9-07, orientation is north.

Photo 2.
Dunemat/northern dune grassland habitat located within the impact zone of the footpath. Photo taken by SHN on 4-13-07, orientation is southwest.

Photo 3. Humboldt Bay owl's clover and Point Reye's bird's beak located adjacent and along the network of undesignated trails located near the footpath. Note the plants are located immediately adjacent to walking surface and in a few locations on the walking surface. Photo taken by SHN on 4-13-07, orientation is south.

Photo 4. Palustrine scrub-shrub habitat that will be impacted by trail improvements along the main trail segment. This was taken near sections 16 and 17 on 4-13-07, orientation is south.

Photo 5. Disturbed habitat in the foreground and Palustrine scrub-shrub in the background. Portions of the main trail that are this wide will not result in impacts to wetlands or ESHA. Photo taken by SHN on 6-09-07, orientation is southeast.

Photo 6. Path from the railroad to Pound Road parking lot. Upland habitat is located immediately adjacent to the trail. Note salt marsh in background, indicated by arrow. Photo taken by SHN on 6-907, orientation is east.

Appendix B

Species List

Species List Elk River Wildlife Trail Improvement Project Phase II 2007 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Alnus rubra	red alder	1
Eucalyptus globulus	blue gum	1
Ilex aquifolium	English holly	1
Malus fusca	Oregon crab apple	1
Pinus attenuata	knobcone pine	1
Pinus contorta ssp. *contorta*	beach pine	1
Pseudotsuga menziesii var. *menziesii*	Douglas-fir	1
Rhamnus purshiana	cascara	1
Salix hookeriana	Hooker's willow	1
Salix lasiolepis	arroyo willow	1
Salix sitchensis	Sitka willow	1
Sequoia sempervirens	coast redwood	1
Baccharis pilularis	coyote brush	2
Cytisus scoparius	Scotch broom	2
Gaultheria shallon	salal	2
Genista monspessulana	French broom	2
Lonicera involucrata var. *ledebourii*	black twinberry	2
Lupinus arboreus	yellow bush lupine	2
Myrica californica	wax myrtle	2
Ribes sanguinuem var. *glutinosum*	pink-flowering currant	2
Rosa nutkana	Nootka rose	2
Rubus discolor	Himalaya berry	2
Rubus parviflorus	thimbleberry	2
Rubus spectabilis	salmonberry	2
Sambucus racemosa	red elderberry	2
Vaccinium ovatum	evergreen huckleberry	2
Abronia latifolia	yellow sand-verbena	3
Achillea millefolium	common yarrow	3
Agrostis exarata	western bent-grass	3
Agrostis sp.	bent grass	3
Agrostis stolonifera	creeping bent-grass	3
Agrostis viridus	bentgrass	3
Aira caryophyllea	silver European hairgrass	3
Ambrosia chamissonis	silver burweed	3
Ammophila arenaria	European beachgrass	3
Anagallis arvensis	scarlet pimpernel	3
Anaphalis margaritacea	pearly everlasting	3
Anthoxanthum odoratum	sweet vernal grass	3
Armeria maritima ssp. *californica*	sea-pink	3

Species List Elk River Wildlife Trail Improvement Project Phase II 2007 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Artemisia pycnocephala	artemisia	3
Aster chilensis	common California aster	3
Athyrium filix-femina	lady fern	3
Atriplex leucophylla	beach saltbush	3
Atriplex patula	spear oracle	3
Atriplex triangularis	spearscale	3
Bellis perennis	English daisy	3
Blechnum spicant	deer fern	3
Brassica nigra	black mustard	3
Briza maxima	large quaking or rattlesnake grass	3
Briza minor	small quaking or rattlesnake grass	3
Bromus spp.	brome grasses	3
Cakile maritima	sea rocket	3
Calystegia soldanella	beach morning-glory	3
Camissonia cheiranthifolia	beach primrose	3
Cardamine oligosperma	western bittercress	3
Cardionema ramosissimum	sandmat	3
Carex deweyana ssp. *leptopoda*	short-scaled sedge	3
Carex lyngbyei	Lyngbye's sedge	3
Carex obnupta	slough sedge	3
Carex pansa	sand dune sedge	3
Carex sp.	sedge	3
Castilleja ambigua ssp. *humboltiensis*	Humboldt Bay owl's clover	3
Chamomilla suaveolens	pineapple weed	3
Cichorium intybus	chicory	3
Cirsium arvense	Canada thistle	3
Cirsium vulgare	bull thistle	3
Claytonia sibirica	Siberian candyflower	3
Conium maculatum	poison hemlock	3
Cordylanthus maritimus ssp. *palustris*	Point Reyes bird's-beak	3
Cortaderia jubata	pampas grass	3
Crocosmia sp.	crocosmia	3
Cuscata salina	Dodder	3
Cynosurus echinatus	hedgehog dogtail grass	3
Cyperus eragrostis	nut-grass or tall flat-sedge	3
Dactylis glomerata	orchard grass	3
Daucus carota	wild carrot or Queen Anne's lace	3
Deschampsia cespitosa ssp. *cespitosa*	tufted hair-grass	3

Species List Elk River Wildlife Trail Improvement Project Phase II 2007 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Digitalis purpurea	foxglove	3
Distichlis spicata	saltgrass	3
Eleocharis sp.	spike-rush	3
Epilobium ciliatum	northern willow herb	3
Equisetum arvense	common horsetail	3
Equisetum hyemale ssp. *affine*	common scouring rush	3
Erechtites minima	toothed coast fireweed	3
Eriogonum latifolium	beach buckwheat	3
Eschscholzia californica	California poppy	3
Festuca arundinacea	tall fescue	3
Festuca rubra	red fescue	3
Foeniculum vulgare	fennel	3
Fragaria vesca	wood strawberry	3
Fuschia sp.	ornamental fuschia	3
Galium sp.	bedstraw	3
Geranium dissectum	cut-leaved geranium	3
Geranium molle	dovefoot geranium	3
Geranium sp.	geranium	3
Gnaphalium sp.	cudweed	3
Grindelia stricta	gumweed	3
Hedera helix	English ivy	3
Heracleum lanatum	cow parsnip	3
Holcus lanatus	common velvet grass	3
Hordeum marinum	Mediterranean barley	3
Hypericum perforatum	Klamath weed or common St. John's-wort	3
Hypochaeris radicata	hairy cat's-ear	3
Iris douglasiana	Douglas iris	3
Jaumea carnosa	fleshy jaumea	3
Juncus balticus	Baltic rush	3
Juncus bolanderi	Bolander's rush	3
Juncus bufonius	common toad rush	3
Juncus effusus	common rush	3
Juncus ensifolius	dagger-leaf rush	3
Juncus leseurii	salt grass	3
Juncus patens	spreading rush	3
Lathyrus latifolius	everlasting pea	3
Lathyrus littoralis	beach pea	3
Lathyrus sp.	pea	3
Lemna sp.	duckweed	3

Species List Elk River Wildlife Trail Improvement Project Phase II 2007 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Lessingia filaginifolia	beach aster	3
Leucanthemum vulgare	ox-eye daisy	3
Leymus mollis	American dunegrass	3
Linum bienne	western blue flax	3
Lolium perenne	perennial ryegrass	3
Lolum multiflorum	Italian ryegrass	3
Lonicera hispidula var. *vacillans*	hairy honeysuckle	3
Lotus corniculatus	birdfoot trefoil	3
Lotus micranthus	rose-flowered lotus	3
Lupinus bicolor	miniature lupine	3
Lysichiton americanum	skunk cabbage	3
Madia sativa	tarweed	3
Melilotus officinalis	yellow sweet clover	3
Mentha pulegium	pennyroyal	3
Montia parvifolia	streambank spring beauty	3
Navarretia squarrosa	skunkweed	3
Oenanthe sarmentosa	Pacific water-parsley	3
Parentucellia viscosa	yellow parentucellia	3
Petasites frigidis var. *palmatus*	western coltsfoot	3
Phalaris arundinacea	reed canary grass	3
Plantago lanceolata	English plantain	3
Plantago major	common plantain	3
Poa macrantha	sand dune bluegrass	3
Polygonum arenastrum	beach knotweed	3
Polypogon monspeliensis	rabbitfoot grass or annual beard grass	3
Polystichum munitum	sword fern	3
Potentilla anserina	silverweed	3
Prunella vulgaris	self-heal	3
Pteridium aquilinum var. *pubescens*	western bracken fern	3
Ranunculus occidentalis	western buttercup	3
Ranunculus repens	creeping buttercup	3
Raphanus sativus	wild radish	3
Rorippa nasturtium-aquaticum	water cress	3
Rubus ursinus	Pacific bramble or California blackberry	3
Rumex acetosella	sheep sorrel	3
Rumex crispus	curly dock	3
Rumex salicfolius	willow dock	3
Salicornia virginica	pickleweed	3
Scirpus americanus	three-square bulrush	3

Species List Elk River Wildlife Trail Improvement Project Phase II 2007 Surveys, Eureka, California		
Scientific Name	**Common Name**	**Presence** **(1=tree, 2=shrub, 3=herb)**
Scirpus cernuus	low club-rush	3
Scirpus microcarpus	small-flowered bulrush	3
Scrophularia californica	coast figwort	3
Senecio vulgaris	common butterweed	3
Silene sp.	catchfly	3
Solidago spathulata	dune goldenrod	3
Sonchus asper ssp. *asper*	prickly sow thistle	3
Spartina densiflora	cordgrass	3
Spergularia macrotheca	sandspurry	3
Stachys ajugoides	hedge nettle	3
Stachys chamissonis	Chamisso's hedge nettle	3
Tanacetum camphoratum	dune tansy	3
Trifolium pratense	red clover	3
Trifolium repens	white clover	3
Trifolium wormskioldii	springbank clover	3
Triglochin maritima	seaside arrow-grass	3
Triphysaria eriantha ssp. *eriantha*	butter-and-eggs	3
Typha latifolia	broadleaf cattail	3
Urtica dioica ssp. *holosericea*	stinging nettle	3
Verbascum thapsis	woolly mullein	3
Veronica americana	American brooklime	3
Vicia americana var. *americana*	American vetch	3
Vicia hirsuta	hairy vetch	3
Vinca major	greater periwinkle	3