



**BIOLOGICAL FIELD REPORT
NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION**

Prepared for:



Prepared by:

**KLEINFELDER
2240 Northpoint Parkway
Santa Rosa, California 95407**

January 2008



This page left blank intentionally



A Report Prepared for:

North Coast Railroad Authority
419 Talmage Road, Suite M
Ukiah, California 95482
Phone: (707) 463-3280

**BIOLOGICAL FIELD REPORT
NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION**

Kleinfelder Project No. 78207

Prepared by:

A handwritten signature in blue ink that reads "Jennifer Parson".

Jennifer Parson
Environmental Scientist

Reviewed by:

A handwritten signature in blue ink that reads "Brian Mulvey".

Brian Mulvey
Senior Fisheries Biologist

**KLEINFELDER
2240 Northpoint Parkway
Santa Rosa, California 95407**

January 2008



This page left blank intentionally



TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1-1
1.1 PURPOSE	1-1
2.0 METHODOLOGIES	2-1
2.1 KLEINFELDER FIELD SURVEYS	2-1
2.1.1 Hy-Rail Reconnaissance level Survey - MP 142.0 to MP 0.0.....	2-1
2.1.2 Habitat Survey – MP 138.0 to MP 99.0	2-1
2.1.3 Habitat Survey – MP 99.0 to MP 85.0 and MP 26.0 to MP 1.0	2-2
3.0 FIELD OBSERVATIONS AND FINDINGS	3-1
3.1 GENERAL HABITAT.....	3-1
3.1.1 Hy-Rail (MP 142.5 to MP 0.0)	3-1
3.1.2 Habitat Survey – MP 138.0 to MP 99.0 (Willits to Hopland)	3-5
3.1.3 Habitat Survey MP 99.0 to MP 85.0 (~Hopland to Cloverdale) and MP 26.0 to MP 0.0 (~Novato/Ignacio to Lombard)	3-6
3.2 SURVEY SPECIFIC FINDINGS	3-7
3.2.1 Habitat Survey MP 138.0 to MP 99.0 (~Willits to Hopland)	3-7
3.2.2 Habitat Survey MP 99.0 to MP 85.0 (~Hopland to Cloverdale) and MP 26.0 to 0.0 (~Hopland to Cloverdale)	3-11
4.0 REFERENCES USED FOR SPECIES IDENTIFICATION	4-1

TABLES

Table 3.2-1	Notable Observations.....	3-9
Table 3.2-2	Observed Flora and Fauna for the Section Between MP 99.0 and MP 85.0 (~Hopland to Cloverdale).....	3-12
Table 3.2-3	Observed Flora and Fauna for the Section Between MP 26.0 and MP 0.0 (~Novato/Ignacio to Lombard)	3-17

FIGURES

Figure 3.1-1a	Plant Communities Along the Project Corridor – MP 142.0 to MP 120.0	3-21
Figure 3.1-1b	Plant Communities Along the Project Corridor – MP 120.0 to MP 99.0	3-22
Figure 3.1-1c	Plant Communities Along the Project Corridor – MP 99.0 to MP 73.0	3-23
Figure 3.1-1d	Plant Communities Along the Project Corridor – MP 73.0 to MP 50.0	3-24



TABLE OF CONTENTS (Continued)

FIGURES (Continued)

Figure 3.1-1e	Plant Communities Along the Project Corridor – MP 50.0 to MP 30.0	3-25
Figure 3.1-1f	Plant Communities Along the Project Corridor – MP 30.0 to MP 0.0	3-26
Figure 3.2-1a	Photos of Notable Observations.....	3-27
Figure 3.2-1b	Photos of Notable Observations.....	3-28
Figure 3.2-1c	Photos of Notable Observations.....	3-29
Figure 3.2-1d	Photos of Notable Observations.....	3-30
Figure 3.2-1e	Photos of Notable Observations.....	3-31
Figure 3.2-1f	Photos of Notable Observations.....	3-32
Figure 3.2-1g	Photos of Notable Observations.....	3-33



1.0 INTRODUCTION

1.1 PURPOSE

Reconnaissance-level surveys were conducted along the North Coast Railroad (NCRA) right of way in support of the DEIR for the resumed operations of the railroad. This biological field report was prepared to document and present the findings of Kleinfelder's reconnaissance level surveys.

An initial survey was conducted by hy-rail travel along the entire line from Lombard to Willits to broadly identify vegetation communities and key habitats for further examination. Using the results from this hy-rail trip, two habitat surveys were conducted focused on potential issues in relation to the operation of the railroad. Two additional sources were used to supplement Kleinfelder's surveys: biological surveys between MP 85.0 and MP 26.0 conducted in support of the Sonoma Marin Area Rail Transit Environmental Impact Report (EIR), and a nesting survey conducted between MP 63.8 and MP 25.8 by Brian Gibeson and Associates. The coverage of these surveys, combined with the previous work, provide biological information for the entire railroad section of the Russian River Division, from MP 142.0 to MP 0.0, Lombard to Willits.

This report summarizes the following three reconnaissance-level surveys that were conducted by Kleinfelder field biologists:

- Hy-rail survey from MP 142.0 (~Willits) to MP 0.0 (Lombard) conducted in February 2007;
- Habitat survey from MP 138.0 (~Willits) to MP 99.0 (~Hopland) conducted in March 2007; and
- Habitat survey from MP 99.0 (~Hopland) to MP 85.0 (~Cloverdale) and from MP 26.0 (~Novato/Ignacio) to MP 0.0 (~Lombard) conducted in June/July, 2007.



This page left blank intentionally



2.0 METHODOLOGIES

2.1 KLEINFELDER FIELD SURVEYS

2.1.1 Hy-Rail Reconnaissance level Survey - MP 142.0 to MP 0.0

In February 2007, a Kleinfelder field biologist, Ric Villasenor or Brian Mulvey conducted a hy-rail renaissance level survey of the entire NCRA rail line. Accompanying the field biologist were NCRA and Kleinfelder project engineers and geologists. Observations were made from a hy-rail vehicle as it traveled down the rail line at approximately 1 - 5 mph. In areas of interest, the vehicle stopped and walking surveys were conducted, these included virtually every stream or water crossing. Binoculars were used to aid in identifying areas of interest. General observations were made to support the purpose of the survey and field notes taken of the typical land use and habitats around the right of way.

2.1.2 Habitat Survey – MP 138.0 to MP 99.0

In February 2007, a team of two Kleinfelder biologists, Melissa Sherman, Sarah Green, and/or Yancey Bissonnette, conducted a reconnaissance level habitat survey along the railroad right of way from MP 138.0 to MP 99.0 (approximately from Willits to Hopland). The primary purpose of this survey was to detect signs of burrowing owls and document burrow complexes suitable for occupation by burrowing owls. In addition, signs of nesting raptors or resources to support nesting raptors were documented within the NCRA corridor.

Kleinfelder walked within the railroad right of way and visually surveyed the habitat within approximately 300 feet of each side of the rail. Portions of the rail line that were within developed and urban areas were excluded from this survey, because densely populated areas are not likely to support burrowing owls habitat, so burrowing owls would not be subject to disturbance from train operations.

Burrows and nests were located and documented using global positioning systems and photographs. Readily visible burrows and nests were recorded along with notes indicating if they were active or occupied. Because the targets of this portion of the surveys were burrowing owl and nesting raptor species, notable observations of raptor



nests and burrows that have the characteristics and potential to support burrowing owls within the right of way were recorded.

Binoculars (10 x 40 power) were used to aid detection of burrows and nests in trees at the outer portions of the right of way. General observations of wildlife species and dominant vegetation types were noted.

2.1.3 Habitat Survey – MP 99.0 to MP 85.0 and MP 26.0 to MP 1.0

In late June/July 2007, a team of two Kleinfelder biologists, Yancey Bissonette, Chris Enyedy, and/or Jennifer Parson, conducted a reconnaissance level habitat survey along the railroad right of way from MP 99.0 to MP 85.0 (approximately Hopland to Cloverdale) and from MP 26.0 to 0.0 (approximately Novato/Ignacio to Lombard). The primary purpose of this habitat survey was to observe and identify habitat and natural resources within approximately 250 feet of either side of the right of way and included general habitat classification for the surrounding landscape around the right of way.

Kleinfelder walked within the railroad right of way, visually surveying the habitat on either side of the rail. Portions of the rail line that were inaccessible were noted in the field notes. Kleinfelder observed and identified animals encountered during the survey with the aid of field binoculars. Vegetation/habitat communities encountered during the survey were identified using the Holland system (Holland, 1986), or the Sawyer and Keeler-Wolf system (Sawyer and Keeler-Wolf, 1995), or by a derived general classification that would best describe the vegetation/habitat community encountered. In some instances, individual botanical specimens were sampled and identified to the species level whenever possible; otherwise, they were recognized to the genus and or family level. Samples were identified either in the field or, when necessary, reference material was collected and identified by examination in the laboratory. Kleinfelder biologists performed laboratory examinations and verified botanical identification of collected field material with a binocular microscope using readily available botanical references.

Kleinfelder integrated U.S. Army Corps of Engineers (USACE 1987) and CDFG criteria to identify wetlands to assess potential on-site wetlands while conducting the survey. However, field identification at the time of the survey does not constitute protocol specific surveys.



3.0 FIELD OBSERVATIONS AND FINDINGS

Previous descriptions of the general regional habitat types occurring along the NCRA corridor are consistent with the general habitat types encountered during the reconnaissance level survey conducted by Kleinfelder of these specific sections of the rail line. The habitat descriptions used here are a best fit for a large survey area. A general habitat description cannot fully describe the complexity of the habitats and environmental features which occur along the survey corridor, but provide appropriate information to support preparation of a draft EIR for resuming operations of the railroad.

3.1 GENERAL HABITAT

3.1.1 Hy-Rail (MP 142.5 to MP 0.0)

The following provides a general habitat classification description based on the field observations and notes taken from hy-rail. Figures 3.1-1a through 3.1-1f shows the general field notes and habitat observations taken during the hy-rail.

3.1.1.1 Agricultural Cropland and Pasture

Agricultural cropland, including vineyards, orchards, alfalfa fields and other row crops are included in this community. Despite the lack of native vegetation, these areas provide good foraging habitat and winter food for a variety of birds and small mammal species.

3.1.1.2 Annual Grasslands

Grasslands are herbaceous communities dominated by annual grasses along with perennial grasses and forbs. The common grassland present along the NCRA corridor is dominated by non-native herbaceous species interspersed with native species. Dominant herbaceous species in this community include soft chess (*Bromus hordeaceus*), wild oats (*Avena* spp.), fescue (*Vulpia* sp.), hare barley (*Hordeum murinum*), silver hair grass (*Aira caryophyllea*), dog-tail grass (*Cynosurus echinatus*), and rip-gut brome (*Bromus diandrus*). Annual forbs interspersed among the grasses include blue-eyed grass (*Sisyrinchium bellum*), clover (*Trifolium* sp.), common fiddleneck (*Amsinkia intermedia*), Pursh's lotus (*Lotus purshianus*), tarplant (*Hemizonia congesta*), goldenrod, (*Hypericum* sp.), Fenneland baby blue-eyes (*Nemophila*



menziesii). Perennial forbs include narrow-leaved onion (*Allium amplexans*), elegant harvest brodiaea (*Brodiaea elegans*), self heal (*Prunella vulgaris* ssp. *lanceolata*), common yarrow (*Achillea millefolium*). Grasslands can support a wide variety of small mammals and provide foraging habitat for raptors and other birds. These grassland species are also typical understory composition of other vegetative communities including Oak Woodlands and Chaparral/Scrub.

3.1.1.3 Coastal Marshes/Wetlands

Various types of coastal marshes and wetlands are located within the vicinity of the alignment including coastal salt marsh, coastal brackish marsh, coastal freshwater marsh, and coastal freshwater seasonal wetland. These systems are defined by the differences in size, hydrology, water chemistry and function. Wetlands in general are highly productive habitats for plants and wildlife and provide shelter and food sources for resident and migratory wildlife. The San Francisco Bay, including San Pablo Bay, contains the largest salt water marsh systems in California. Typical plant species in salt marshes, within varying salinity and topographical gradients, include Eelgrass (*Zostera marina*), cordgrass (*Spartina foliosa*), pickleweed (*Salicornia* sp.), sea arrowgrass (*Triglochin maritima*), and saltgrass (*Distichlis spicata*). Freshwater marshes and wetlands are typified by cattail (*Typha* sp.), bulrush (*Scirpus* sp.), sedge species (*Carex* sp.) and rush species (*Juncus* sp.). Brackish marshes exhibit both salt tolerant species and freshwater species. Freshwater wetland areas support an abundant population of aquatic invertebrates and provide breeding sites for frogs, toads and salamanders. Many wildlife species depend on freshwater marshes for their entire life cycle, and other species use them as temporary refuges or migratory stopover areas. Salt marshes are also valuable and productive habitats for wildlife. They are used for nurseries for many species of marine and estuarine fishes and provide important roosting and feeding grounds for many waterfowl and shorebird species.

3.1.1.4 Disturbed/Ruderal

Areas along the right of way which are devoid of native vegetation are typically in areas where the surface soils have been graded or heavily disturbed, and an active disturbance regime is in place. Ruderal vegetation is characterized by weedy species that colonize these disturbed areas, typically non-native annual grasses and herbs.



Examples of these areas include railroad berms, vacant lots, roadsides, and vineyard edges.

3.1.1.5 Isolated and Vernal Wetlands

These features are found throughout the alignment easement and typically occur where soils have become compacted, or adequately impounded, so that the area holds water in sufficient enough quantities and duration as to allow for the development and establishment of hydrophytic vegetation. These features can be found associated with swales, drainages, near springs and seeps, along terraces and alluvial fans and where excavation of the soil has created depressions and ditches. Some of the hydrophytic plant species found in these habitats include common toadrush (*Juncus bufonius* var. *bufonius*), popcornflower (*Plagiobothrys* sp.), purslane (*Veronica peregrine* ssp. *xalapensis*), speedwell (*Veronica anagallis-aquatica*), field owl's clover (*Castilleja campestris*) and meadowfoam species (*Limnanthes* sp.). Herbaceous perennials include spreading rush (*Juncus patens*), slender-beaked sedge (*Carex athrostachya*), pennyroyal (*Mentha pulegium*) and curly dock (*Rumex crispus*). Other common species in these types of wetlands may include redtop (*Agrostis stolonifera*), meadow foxtail (*Alopercurus pratensis*), pennyroyal (*Mentha pulegium*), Timothy grass (*Phleum pretense*), western buttercup (*Ranunculus occidentalis*), curly dock (*Rumex crispus*), and common velvet grass (*Holcus lanatus*).

These features could be considered sensitive natural communities and may provide habitat for a variety of special-status plant and wildlife species, as they have limited occurrence due to degradation and removal of naturally occurring wetlands. These features are also attractive to wildlife such as wetland dependent birds, reptiles, and amphibians that may use these areas for foraging, nesting, and shelter.

3.1.1.6 Mixed North-Slope Forest

Mostly found in the northern area of the alignment near Willits, this community is dominated by tree species with a very dense canopy ranging from 60 percent to 100 percent cover. These areas also have a well-developed shrub layer and scant herbaceous layer; however, in the areas with 90 to 100 percent cover the understory is park-like with very few shrubs with the groundcover consisting of organic litter and ferns. Dominant tree species include black oak, madrone, California bay, Douglas fir, and



canyon live oak (*Quercus chrysolepis*), and typical understory shrubs include Manzanita and poison oak. The canopy of this community provides resources for wildlife including forage, nesting sites, and roosting substrate.

3.1.1.7 Oak Woodlands

Oak woodlands occur on the slopes and within the floodplains bordering the right of way. These woodlands are composed of monotypic or mixed stands of oak species including coast live oak (*Quercus agrifolia*), Oregon white oak (*Q. garryana*), black oak (*Q. kelloggii*), and valley oak (*Q. lobata*). Other tree species found in this community include California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*), bigleaf maple, (*Acer macrophyllum*) and Douglas fir (*Pseudotsuga menziesii*). The shrub layer in this community can vary from dense to sparse and include species such as common Manzanita (*Artostaphylos manzanita*), poison oak (*Toxicodendron diversilobum*), deer brush (*Ceanothus integerrimus*), and ocean spray (*Holodiscus discolor*). Herbaceous cover in oak woodlands is typically 40 to 80 percent, and is usually dominated by perennial grasses. Oak woodlands provide high value for wildlife by offering nesting and perching sites for birds, an abundant food source of acorns, and cover for large mammals.

3.1.1.8 Open Water

Open water areas include unvegetated standing waters usually associated with ponds and creeks bisected by the right of way. These open waters may integrate with other coastal wetlands and marshes. Open water is an important wildlife resource as they provide habitat for fish, amphibians, aquatic reptiles, and a variety of water birds. The water is also an important source of drinking water for large mammals and other terrestrial wildlife species.

3.1.1.9 Riparian Communities

Riparian communities, including Riparian Scrub and Riparian Woodlands, are found along creeks, rivers, drainages, fence rows, and at other scattered locations throughout the study area, on tributaries of the Eel, Russian, Petaluma, and Napa Rivers. The dominant species in the canopy layer include cottonwood (*Populus sp.*), California sycamore (*Plantanus racemosa*), valley oak, big-leaf maple (*Acer macrophyllum*),



California buckeye (*Aesculus californica*), California bay (*Umbellularia californica*), and mature willows (*Salix sp.*). Typical understory species include poison oak (*Toxicodendron diversilobum*) and Himalayan blackberry (*Rubus discolor*). Riparian scrub habitat is found in small drainages and ditches along the right of way along with areas near rivers or streams that disturbed. Riparian woodland communities are present along the major waterways that cross or run parallel to the alignment including the Russian River. These areas support a rich diversity of wildlife and provide valuable nesting and foraging habitat for raptors and other birds, and also provide cover and refuge sites for amphibians, reptiles, and small mammals. Riparian habitats support the most dense and diverse bird communities in Northern California and in the study area. The riparian corridors also serve as important wildlife movement and migration routes. Riparian communities are considered sensitive natural communities by CDFG due to their wildlife habitat value for resident and migratory species, scarcity compared to their historic extent, and watershed and water quality values.

3.1.1.10 Stream Channels

Stream channels, not including banks, which cross, or within the vicinity of the right of way, are typically rocky and unvegetated and range in size from less than 1 foot to over 40 feet wide. These streams may provide habitat for adult and juvenile salmonids, for migration, spawning and/or seasonal rearing. These areas are defined by the high water mark and considered jurisdictional "waters of the United States."

3.1.2 Habitat Survey – MP 138.0 to MP 99.0 (Willits to Hopland)

This survey encompassed four distinct valley areas and one mountain pass that vary in vegetation and habitat characteristics based on the geomorphology, topography, and microclimates of the area and include the Little Lake Valley, Redwood Valley, Ukiah Valley, and the Russian River Valley. The City of Willits is located within the Little Lake Valley and areas along the railroad right of way within the city limits are relatively developed. The outskirts of Willits within this valley are dominated by mixed north-slope forest, oak woodlands, and riparian communities. Between Little Lake Valley and Redwood Valley the railroad climbs over Laughlin Ridge and over Ridgewood Summit at an elevation of 1953 feet above mean sea level. This area is comprised of dense north slope mixed forest.



The Russian River confluences with the alignment in Redwood Valley and parallels the right of way down to Healdsburg. Within Redwood Valley, a transition between north slope mixed forest and oak woodlands occurs. Within the Ukiah Valley, interior live oak woodlands are found in the eastern hills of the valley and black oak woodlands are found in the western portions of the City of Ukiah and the western hills. Historically, this valley supported a rich diversity of oak woodlands and forests, but agriculture and development have thinned out the stands of trees. Within the Russian River Valley, dense stands of riparian woodlands and scrub dominate the banks of the Russian River and remnant patches of riparian species are found within the floodplain near irrigation ditches or along tributaries. Other natural communities in this area include annual grasslands and oak woodlands. Agricultural areas, dominated by vineyards, are also prevalent in this area particularly within the Russian River floodplain and the adjacent low elevation hillsides.

The dominant native vegetation communities Kleinfelder observed within and adjacent to the rail line corridor for the survey of this northern section included oak woodlands, north slope mixed forest, and riparian woodlands and scrub as described previously.

3.1.3 Habitat Survey MP 99.0 to MP 85.0 (~Hopland to Cloverdale) and MP 26.0 to MP 0.0 (~Novato/Ignacio to Lombard)

3.1.3.1 MP 99.0 to MP 85.0 (~Hopland to Cloverdale)

The area surrounding the right of way between Hopland and Healdsburg is located within the Russian River Valley and in some cases the right of way abuts the river corridor. Dense stands of riparian woodlands and scrub dominate the banks of the Russian River and remnant patches of riparian species are found within the floodplain near irrigation ditches or along tributaries. Other natural communities in this area include annual grasslands and oak woodlands. Agricultural areas, dominated by vineyards, are also prevalent in this area particularly within the Russian River floodplain and the adjacent low elevation hillsides.

Kleinfelder observed the following habitat types along and adjacent to the survey corridor between Cloverdale and Hopland: annual grasslands, oak woodlands, riparian communities, stream channels, and agricultural cropland and pasture.



3.1.3.2 MP 26.0 to MP 0.0 (~Novato/Ignacio to Lombard)

This portion of the survey is typified by open grasslands, pasture, sparse oak woodlands along with extensive marshland and wildlife preserve, punctuated with occasional rural housing and winery/vineyard operations. The Sears Point international raceway is located nearby and west of the alignment near the junction of Highway 37 and Highway 121. The Napa River flows north-south and transects the right of way east of the Napa-Sonoma County line. North of the right of way between Lombard and Schellville consists of nonnative grasslands, limited oak woodlands and riparian areas along a series of streams and sloughs. The area south of the alignment is surrounded by the Napa-Sonoma Marshes Wildlife Area and Skaggs Island. Tidal salt marshes are prevalent in this area.

Large areas of open water were noted about one mile south of Schellville at MP 12.0. Bay waters were introduced into this area as a result of levee failures.

Kleinfelder observed the following habitat types along and adjacent to the right of way between Lombard and Ignacio: coastal marshes/wetlands, annual grasses, oak woodlands, stream channels, agricultural cropland and pasture, disturbed/ruderal, open water, isolated and vernal wetlands.

3.2 SURVEY SPECIFIC FINDINGS

Areas encountered that were considered notable natural resources occurring beyond the general habitat description are described below.

3.2.1 Habitat Survey MP 138.0 to MP 99.0 (~Willits to Hopland)

Due to the forested nature of the northern portion of the railroad right of way, lack of flat open grasslands for hunting, and compacted soils, there were few areas with suitable burrowing owls habitat observed. In addition, the valley floors where burrowing owls typically are found have been converted to vineyards and active agriculture that does not support the necessary characteristics of burrowing owls habitat. Between MP 138.0 and MP 99.0, very few burrows were noted and of the burrows detected, many were small mammal burrows and not suitable for burrowing owls occupation. However, a few burrows were observed that could support burrowing owls, but were mostly located in man-made berms or areas where the soil had been disturbed. None of the burrows



observed were occupied and no burrowing owls or owl signs (i.e. pellets, wash) were noted. Due to the nature of the habitat adjacent to the burrows, any burrowing owls use is likely on a transient basis.

Habitat within and adjacent to this section of the right of way is of high-quality foraging and nesting habitat for various species of raptors. The right of way parallels the Russian River for a good portion of this segment and multiple small creeks cross the right of way, providing a year-round source of water. Large open oak woodlands with a grassland understory along with the vineyards and agricultural fields along the alignment provide excellent foraging habitat. Some dense old-growth mixed north slope forests provide foraging habitat for *Accipiter* species and large old snags within these forested areas provide an ideal nesting platforms. Various species of raptors were noted during the site reconnaissance including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), turkey vulture (*Cathartes aura*), and sharp-shinned hawk (*Accipiter striatus*).

Table 3.2-1 provides a summary of the field notes. Photographs of these notable observations are presented in Figures 3.2-1a through 3.2-1g.



**Table 3.2-1
Notable Observations**

ID	Mile Marker Latitude/Longitude	Observation	Notes
1	137 39.37312N/123.32840W	Burrows	Man-made berms comprised of sandy soil had multiple burrows present. In general, the burrows appeared unoccupied and were partially collapsed. The size, shape and general characteristics of the burrows are suitable for occupation by burrowing owls. In addition, a common raven was observed capturing a ground squirrel from this area indicating that these burrows may have been constructed by squirrels which are typical burrows used by burrowing owls. Adjacent habitat was comprised of dense North Slope Mixed Forest and was good nesting habitat for various species of birds.
2	136 39.37312N/123.32840W	Burrows	Small man-made berms or areas topographical relief on the north side of the rail line exhibited sandy soils and multiple burrows. Most of the burrows were created by small mammals, but two were sizable enough to support burrowing owls. These burrows appeared unoccupied.
3	134 39.36408N/123.33006W	Nest Cavity	Active nest cavity in oak located 30 feet west of tracks. Cavity opening is 6 inches wide and twigs and grass were noted inside. Although it is unlikely that a raptor species would use this nest, the species using this nest is possibly covered under the MBTA and due the proximity to the tracks may be disturbed by operations.
4	132-134 39.36005N/123.32522W 39.35905N/123.32431W 39.35900N/123.32422W 39.35883N/123.32368W 39.35486N/123.32031W 39.34940N/123.31592W 39.34230N/123.30821W	Multiple Stick Nests	Seven stick nests were observed in large Douglas fir and tank oak trees. It was unclear whether these nests were degraded raptor nests from a previous season or potentially a tree nesting mammal stick nest. Due to the close proximity of the nests, it is unlikely that all the nests observed are raptor nests. The majority of the nests appeared inactive, but two appeared to be in the building stage with fresh moss present.
5	133 39.35660N/123.32159W	Burrow complex	Complex of burrows in manufactured slope approximately 20 feet east of track. Burrows appeared inactive and ranged in size from 2-inches to 10 inches in diameter. Dense north slope mixed forest in adjacent habitat.
6	132 39.33897N/123.30460W	Snag	Red-tailed hawk observed perched on snag adjacent to tracks.



**Table 3.2-1 (Continued)
Notable Observations**

ID	Mile Marker Latitude/Longitude	Observation	Notes
7	132 39.33881N/123.30428W	Active Red-tail Hawk Nest	Active nest on the top of a large Douglas fir with the top broken off which created a nesting platform. The tree was located 30 feet east of tracks and a red-tailed hawk was observed in nest and flying around area voicing on territory. Remote and quiet location near creek.
8	125 39.26846N/123.21073W	Nest Site	Possible remnants of a last season nest. Nest constructed with large sticks in black oak tree in riparian area.
9	124 39.26846N/123.21073N	Nest Site	Stick nest in pine tree 40 feet west of tracks. Location of nest in tree on a smaller branch and size of nest does not indicate large raptor nest site. It was also noted that this area of the railroad had been washed out. Ponding as a result of the fill debris has occurred and fish, newts and frogs were observed trapped in these ponding features. A wetland meadow exists adjacent to the southeast of the right of way.
10	122 39.25268N/123.20222W	Burrow complex	Berm along the border of vineyard with over 10 burrows ranging in size from 3 inches in diameter to 6 inches. Some of the burrows were active, but no sign of burrowing owls present. Open site with foraging available and adjacent to creek
11	112 39.10419N/123.188843W	Burrow complex	Burrow complex located 25 feet east of tracks. Burrows ranged in size from 4 inches to 6 inches in diameter. A few burrows are located within the berm that supports the track. The adjacent area is an open orchard and blackberry scrub is located within the immediate vicinity of the tracks and berm.
12	103 39.01334N/123.12444W	Nest in Cottonwood	Cottonwood gallery between tracks and Russian River had a remnant stick nest. This area is extremely birdy and the large cottonwood trees provided platform nest sites for raptors.
13	99 38.95714N/123.10788W	Turkey Vultures Roosting, Multiple raptor sitings	Approximately 20 Turkey Vultures were roosting in an oak tree adjacent to the tracks. Two pairs of red-tailed hawks, a great-horned owl, and another unidentified pair of hawks were observed in this area.



3.2.2 Habitat Survey MP 99.0 to MP 85.0 (~Hopland to Cloverdale) and MP 26.0 to 0.0 (~Hopland to Cloverdale)

3.2.2.1 MP 99.0 to MP 85.0 (~Hopland to Cloverdale)

Long stretches of railroad right of way are adjacent to riparian habitat, and much of it contained bird sightings, including red-tailed hawk, red-shouldered hawk and nests, osprey, merganser with juveniles, and trees acting as rookeries for many species of birds. A peregrine falcon was observed in the vicinity of MP 94.0. Hundreds to thousands of tree swallows were observed along the right of way between Cloverdale and Hopland.

Six tunnels occur along this portion of the railroad, and all exhibited potential habitat for bats. Signs of bats were observed in three of three tunnels, and both bats and bat guano were observed in two of the tunnels. Cliff swallows were observed nesting in two of the tunnels. Water was present in two of the tunnels which could be potential habitat for cave dwelling species.

Serpentine soils were observed along this section of the railroad in many of the slope cuts. These soils are host to very specific and usually endemic plant species. Many of the ESA-listed species of plants that occur in this area are usually associated with this type of soil structure.

Over 30 estimated potential wetland or vernal type features were noted. The features exhibited hydrophytic vegetation and/or hydrology conducive to these types of features, or contained fauna associated with these types of features.

Table 3.2-2 provide details on observed flora and fauna MP 99.0 and MP 85.0 (~Hopland to Cloverdale).



**Table 3.2-2
Observed Flora and Fauna for the Section Between
MP 99.0 and MP 85.0 (~Hopland to Cloverdale)**

Scientific Name	Common Name
Flora Observed	
Acacia sp.	green wattle
Acer negundo	box elder
Aesculus californica	Buckeye
Agave deserti	century plant
Aira carophyllea	European hair grass
Alnus sp.	Alder
Anagalis arvensis	scarlet pimpernickel
Arbutus menziesii	Madrone
Arceuthobium sp.	mistletoe
Arctostaphylos sp.	manzanita
Avena barbata	wild oats
Avena fatua	wild oats
Baccharis pilularis	coyote brush
Brassica nigra	black mustard
Briza maxima	rattle snake grass
Briza minor	
Brodeia sp.	Brodeia
Calycanthus occidentalis	spice bush
Carduus pycnocephalus	Italian thistle
Carex barbarae	Santa Barbara sedge
Castilleja sp.	paintbrush
Centaurea sp.	star thistle
Centaureum sp.	
Cichorim intybus	Chicory
Cirsium occidentale	western thistle
Clarkia sp.	clarkia
Convolvulus arvensis	bind weed
Cynodon dactylon	
Cynosurus echinatus	dog-tail grass
Cyperus eragrostis	
Cytisus scoparius	Scotch broom
Daucus carota	wild carrot, Queen Ann's lace
Dipsacus sp.	Teasle
Distichlis spicata	salt grass
Elyocharis acicularis var. acicularis	needle spikerush
Elymus glaucus	blue wildrye
Equisetum sp.	horse tail
Eriogonum nudum	
Eschscholzia sp.	poppy
Festuca idahoensis	Idaho fescue



**Table 3.2-2 (Continued)
Observed Flora and Fauna for the Section Between
MP 99.0 and MP 85.0 (~Hopland to Cloverdale)**

Scientific Name	Common Name
Flora Observed (Continued)	
Foeniculum vulgare	fennel
Helenium puberulum	sneezeweed
Heteromeles arbutifolia	Toyon
Hoita macrostachya	
Hordeum spp.	barley
Hypericum sp.	St. Johns wort
Juncus bufonius	toad rush
Juncus patens	
Juncus phaeocephalus	
Juncus sp.	Juncus
Junglans sp.	walnut
Lotus purshianus	
Lotus purshianus	
Mentha pulegium	Pennyroyal
Mimulus aurantiacus	sticky monkey flower
Mimulus gutatus	monkey flower
Navarretia sp.	Navarretia
Olea sp.	olive tree
Opuntia sp.	beavertail cactus
Paspalum dilatatum	Dallis grass
Phalaris minor	
Picris echioides	ox-tongue
Pinus sabiniana	digger pine
Plantago sp.	plantain
Polypogon monspeliensis	rabbit foot grass
Populus fremontii	cottonwood
Pseudotsuga menziesii	doug fir
Pteridium aquilinum	
Quercus agrifolia	Coast Live Oak
Quercus berberidifolia	scrub Oak
Quercus garryana	Oregon Oak
Quercus kelloggii	California Black Oak
Quercus lobata	Valley Oak
Rosa sp.	wild rose
Rubus discolor	Himalayan blackberry
Rubus ursinus	California blackberry
Rumex crispus	dock
Salix sp.	willow
Sambucus mexicanus	blue elderberry
Silene californica	



**Table 3.2-2 (Continued)
Observed Flora and Fauna for the Section Between
MP 99.0 and MP 85.0 (~Hopland to Cloverdale)**

Scientific Name	Common Name
Flora Observed (Continued)	
Silybum marianum	milk thistle
Sonchus sp.	sowthistle
Sorghum halepense	sorghum grass
Toxicodendron diversilobum	Poison oak
Trifolium sp.	
Trifolium variegatum	
Typha latifolia	cattail
Umbellularia californica	California bay
Verbascum blattaria	moth mullein
Verbascum thapsis	wooly mullein
Vicia villosa	vetch
Vitis californica	wild grape
Vulpia microstachys	
Vulpia myuros	
Woodwardia frimbriata	chain fern
Wyethia sp.	
Yerba sp.	yerba
Fauna Observed	
Accipiter striatus	sharp-shinned hawk
Anas platyrhynchos	Mallard
Aphelocoma californica	scrub jay
Ardea herodias	Great Blue Heron
Baeolophus inornatus	oak titmouse
Buteo jamaicensis	Red-tailed hawk
Buteo lineatus	Red-shouldered hawk
Callipepla californica	California quail
Calypte sp.	hummingbird
Carpodacus mexicanus	house finch
Caruelis psaltria	gold finch
Cathartes aura	turkey vulture
Charadrius vociferus	killdeer
Cinclus mexicanus	mexican dipper
Contopus Cooperi	olive sided fly catcher
Cyanocitta Stelleri	stellar jay
Dryocopus pileatus	pileated woodpecker
Eumeces sp.	western skink
Falco Perigrinus	Perigrine falcon
Hirundo rustica	barn swallow
Icterus bullockii	Bullocks oriole
Junco hyemalis	junco



**Table 3.2-2 (Continued)
Observed Flora and Fauna for the Section Between
MP 99.0 and MP 85.0 (~Hopland to Cloverdale)**

Scientific Name	Common Name
Fauna Observed (Continued)	
Lepus townsendi	Jack-Rabbit
Melanerpes formicivorus	acorn woodpecker
Meleagris gallopavo	Turkey
Mergus merganser	Common merganser
Mimus polyglottos	mockingbird
Molothrus ater	cowbird
Odocoileus hemionus	mule deer
Pandion haliaetus	Osprey
Petrochelidon pyrrhonota	cliff swallow
Sayornis nigricans	black Phoebe
Sceloporus occidentalis	fence lizard
Sciurus carolinensis	grey tree squirrel
Sialia sp.	bluebird
Sitta sp.	nuthatch
Tachycineta bicolor	tree swallow
Troglodytes sp.	wren
Turdus Migratorius	Robin
Tyrannus sp.	kingbird
Tyto alba	Barn Owl
Vespertilionidae	Bats
Species Observed at Fill/Culvert Failure Area	
Calypte sp.	humming bird
Carpodacus	gold finch
Cyanocitta Stelleri	stellar jay
Picoides villosus	hairy woodpecker
Sayornis nigricans	black Phoebe
Sceloporus occidentalis	fence lizard
Taricha torosa	California Newt
	aquatic insects
	frog (sp. unidentifiable)
	trout



3.2.2.2 MP 26.0 to MP 0.0 (~Hopland to Lombard)

The railroad right of way within these areas is dominated by salt marsh, wildlife preserves, protected habitat preserves, and agricultural activities usually associated with vineyard operations. During the survey period numerous kites, harriers, hawks (usually red-tailed) and many owls (great-horned and barn) were observed. Vegetation along the tracks dominantly consisted of non-native invasive weedy species.

Table 3.2-3 provides details on observed flora and fauna between MP 26.0 and MP 0.0 (~Novato/Ignacio to Lombard).



**Table 3.2-3
Observed Flora and Fauna for the Section Between
MP 26.0 and MP 0.0 (~Novato/Ignacio to Lombard)**

Scientific Name	Common Name
Flora Observed	
Acacia sp.	green wattle
Aira carophyllea	European hair grass
Alisma plantago-aquatica	water plantain
Asclepias subverticillata	milkweed
Avena sp.	wild oats
Baccharis pilularis	coyote brush
Brassica nigra	black mustard
Briza minor	
Bromus madritensis var. rubrens	red brome
Carduus pycnocephalus	Italian thistle
Centaurea sp.	star thistle
Centaurea sp.	star thistle
Chlorogalum pomeridianum	soap plant
Cichorim intybus	Chicory
Convolvulus arvensis	bind weed
Conyza canadensis	horse weed
Cortaderia sp.	pampas grass
Cynosurus echinatus	dog-tail grass
Cyperus eragrostis	
Daucus carota	wild carrot, Queen Ann's lace
Dipsacus sp.	Teasle
Distichlis spicata	salt grass
Equisetum sp.	horse tail
Eremocarpus setigerus	dove weed
Eriogonum nudum	
Eschscholzia sp.	poppy
Foeniculum vulgare	fennel
Heteromeles arbutifolia	Toyon
Hordeum spp.	barley
Hypericum sp.	St. Johns wort
Juncus sp.	Juncus
Layia sp.	wild rose
Mentha pulegium	Pennyroyal
Navarretia sp.	Navarretia
Picris echioides	ox-tongue
Plantago sp.	plantain
Polypogon monspeliensis	rabbit foot grass
Populus fremontii	cottonwood
Quercus agrifolia	Coast Live Oak
Rosa sp.	



**Table 3.2-3 (Continued)
Observed Flora and Fauna for the Section Between
MP 26.0 and MP 0.0 (~Novato/Ignacio to Lombard)**

Scientific Name	Common Name
Flora Observed (Continued)	
Rubus discolor	Himalayan blackberry
Rumex crispus	dock
Salicornia sp.	Pickleweed
Salix sp.	willow
Solanum sp.	nightshade
Sonchus sp.	sowthistle
Toxicodendron diversilobum	Poison oak
Trifolium sp.	
Typha latifolia	cattail
Verbascum blattaria	moth mullein
Verbascum thapsis	wooly mullein
Vulpia sp.	
Xanthium strumarium	cocklebur
Fauna Observed	
Accipiter striatus	sharp-shinned hawk
Agelaius phoeniceus	red-shouldered blackbird
Agelaius tricolor	tri-colored black bird
Ardea alba	Great egret
Bubo virginianus	Great Horned Owl
Buteo jamaicensis	Red-tailed Hawk
Carpodacus mexicanus	house finch
Caruelis psaltria	gold finch
Cathartes aura	Turkey vulture
Charadrius vociferus	killdeer
Circus cyaneus	Northern Harrier
Citellus tridecemlineatus	gopher
Corvus brachyrhynchos	Crow
Corvus corax	Raven
Danaus plexippus	monarch butterfly
Egretta caerulea	Great Blue Heron
Elanus leucurus	White-tailed Kite
Euphagus cyanocephalus	Brewers blackbird
Himantopus mexicanus	black/long-legged stilt
Hirundo rustica	Barn swallow
Lampropeltis getula	Common King snake
Larus californicus	California gull
Lepus townsendi	Jack-Rabbit
Molothrus ater	cow bird
Nycticorax nycticorax	night heron

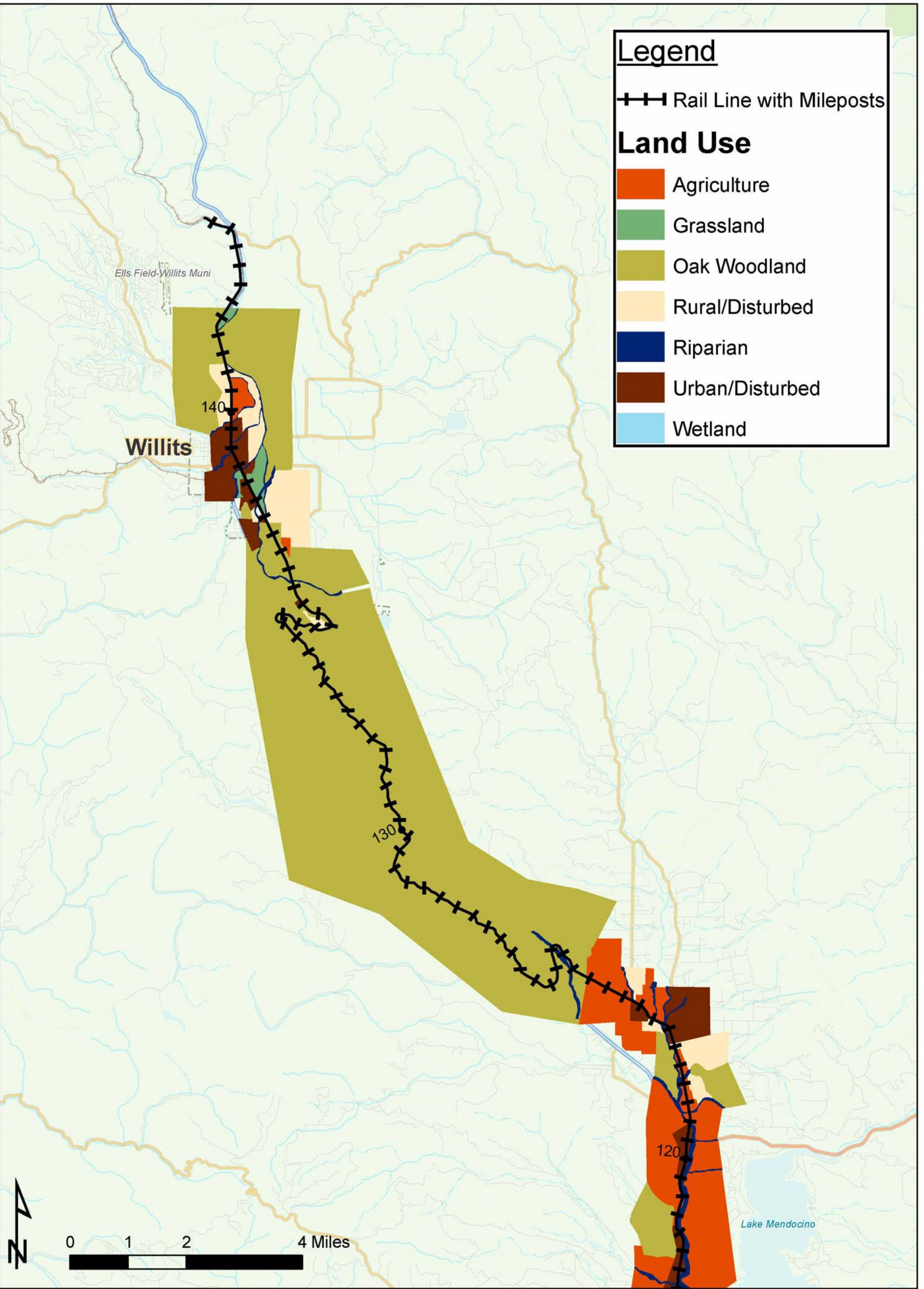


Table 3.2-3 (Continued)
Observed Flora and Fauna for the Section Between
MP 26.0 and MP 0.0 (~Novato/Ignacio to Lombard)

Scientific Name	Common Name
Fauna Observed (Continued)	
<i>Odocoileus hemionus</i>	mule deer
<i>Phalacrocorax</i> sp.	cormorant
<i>Pseudacris regilla</i>	tree frog/chorus frog
<i>Sayornis nigricans</i>	Black Phoebe
<i>Stercorarius</i>	skua
<i>Sturnella neglecta</i>	meadow lark
<i>Sturnus vulgaris</i>	starlings
<i>Tachycineta bicolor</i>	Tree swallow
<i>Thamnophis</i> sp.	garter snake
<i>Tringa</i> sp.	Yellow legs
<i>Troglodytes</i> sp.	wren
<i>Turdus Migratorius</i>	Robin
<i>Tyto alba</i>	Barn Owl
<i>Zenaida macroura</i>	mourning dove



This page left blank intentionally



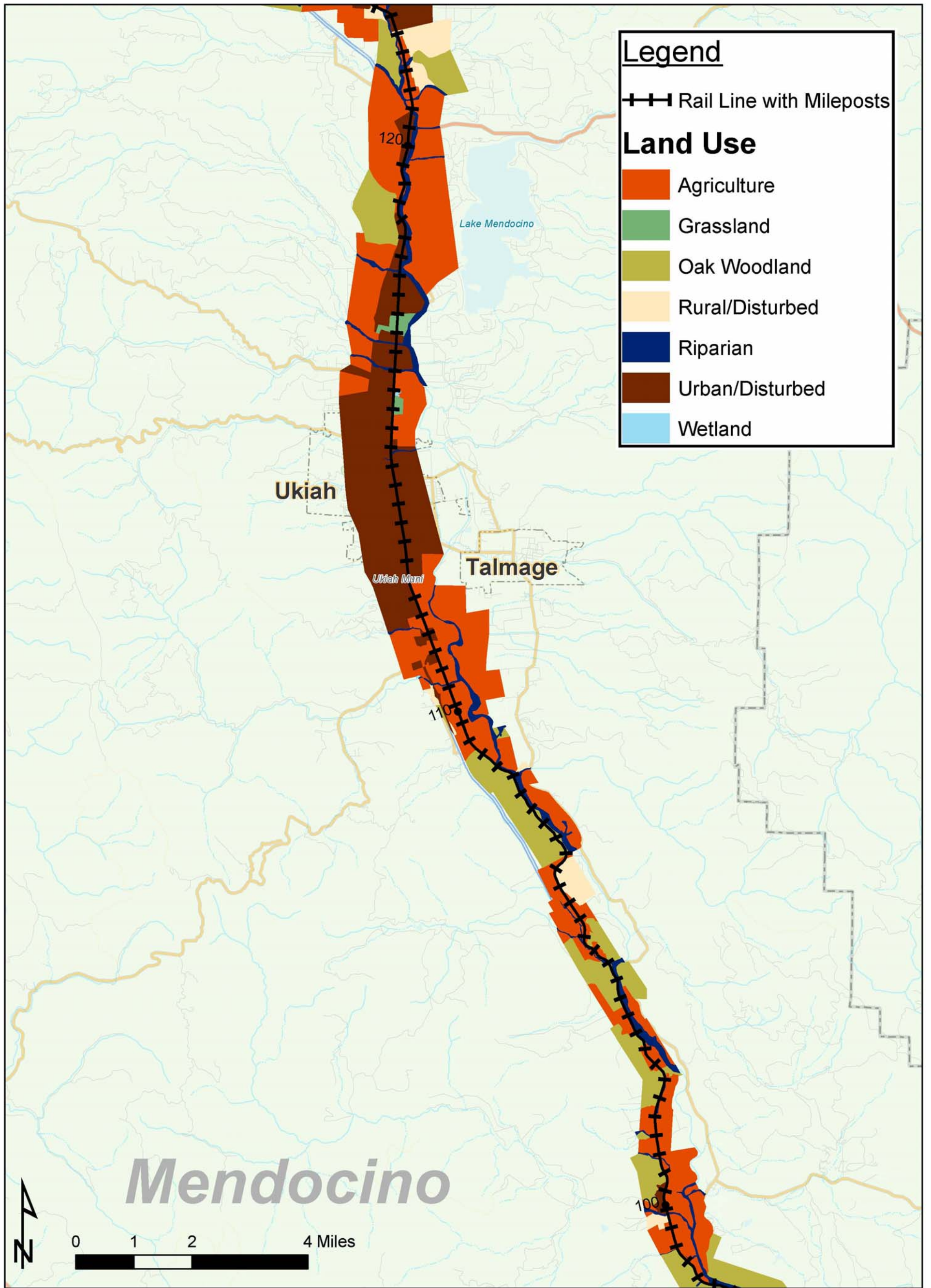
www.kleinfelder.com

PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1a

**PLANT COMMUNITIES ALONG
THE PROJECT CORRIDOR
MP 142.0 TO MP 120.0**

NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION
FREIGHT RAIL PROJECT

**FIGURE
3.1-1a**

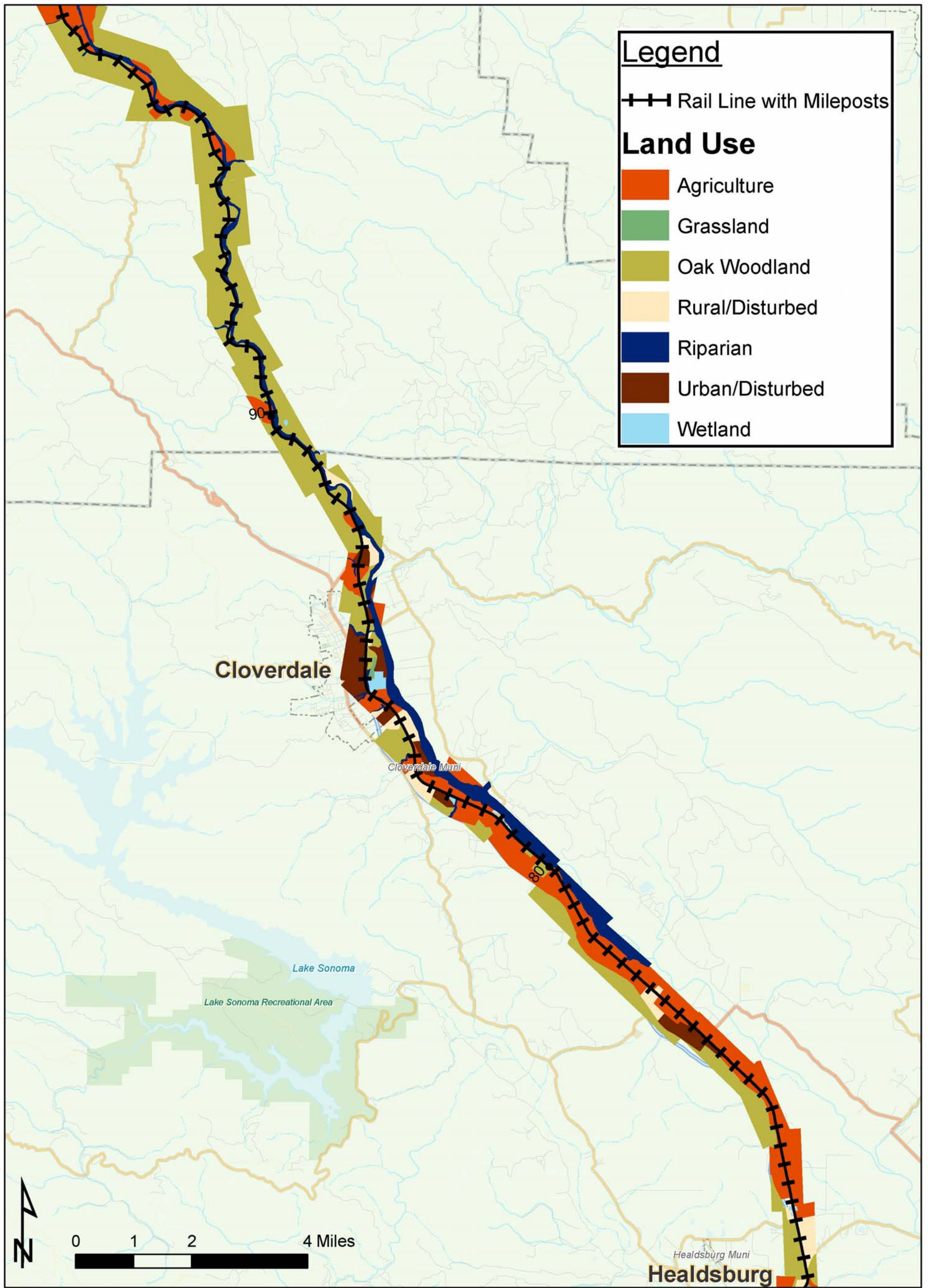


PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1b

PLANT COMMUNITIES ALONG THE PROJECT CORRIDOR
MP 120.0 TO MP 99.0

NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION
FREIGHT RAIL PROJECT

FIGURE
3.1-1b



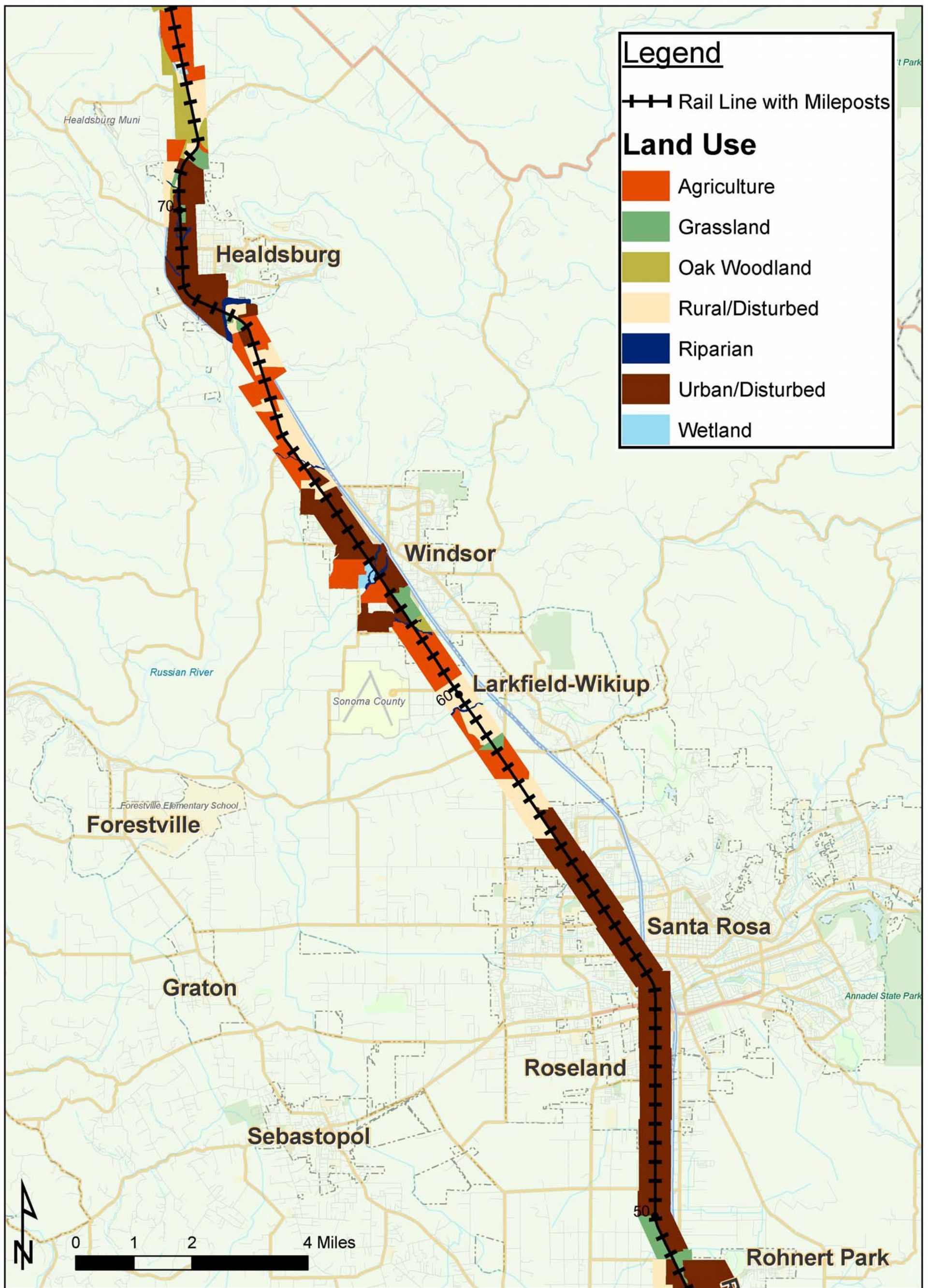
www.kleinfelder.com

PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1c

**PLANT COMMUNITIES ALONG
THE PROJECT CORRIDOR**
MP 99.0 TO MP 73.0

NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION
FREIGHT RAIL PROJECT

FIGURE
3.1-1c



Legend

⚡ Rail Line with Mileposts

Land Use

- Agriculture
- Grassland
- Oak Woodland
- Rural/Disturbed
- Riparian
- Urban/Disturbed
- Wetland



PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1d

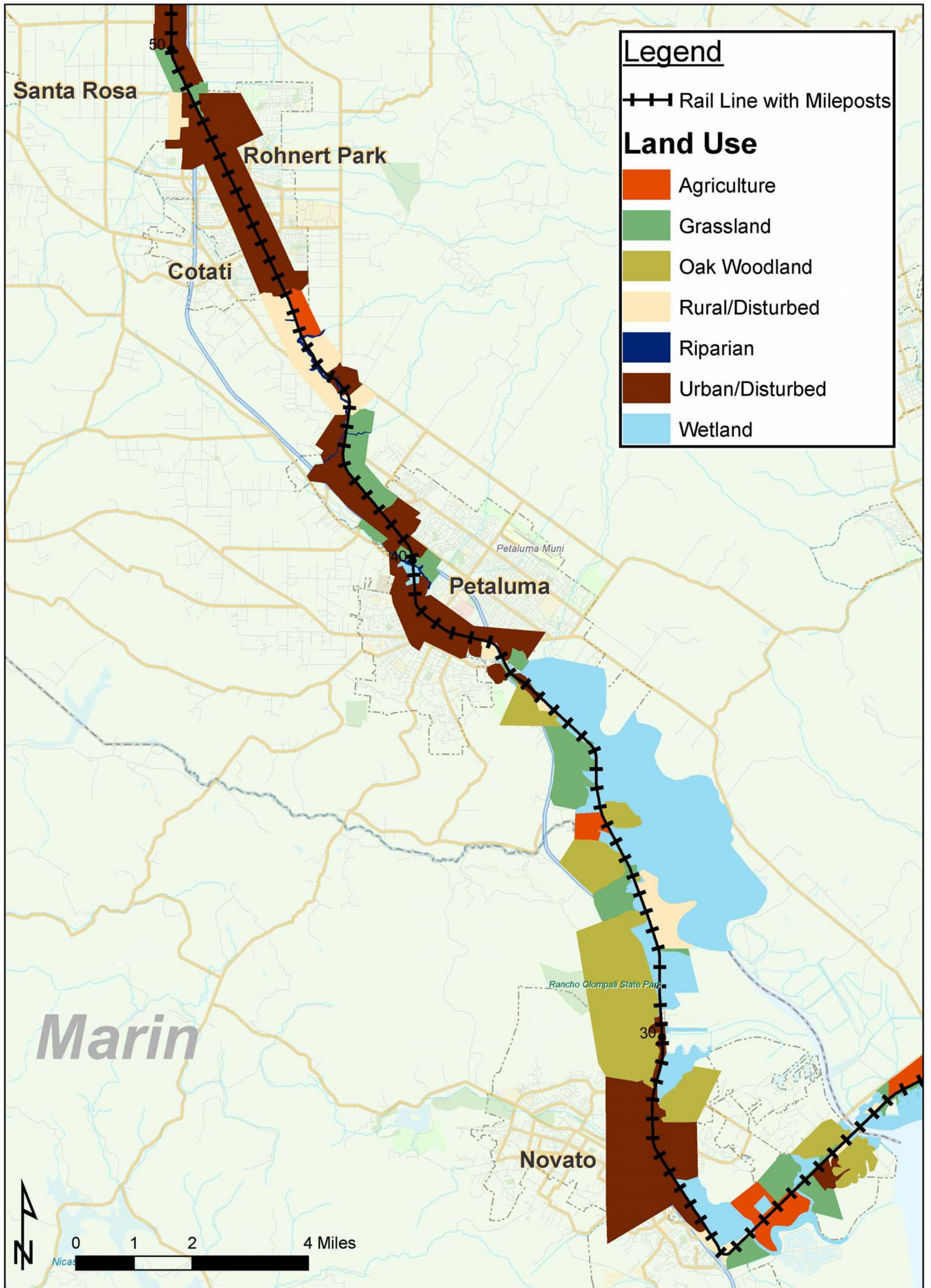
PLANT COMMUNITIES ALONG THE PROJECT CORRIDOR

MP 73.0 TO MP 50.0

NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION
FREIGHT RAIL PROJECT

FIGURE

3.1-1d



PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1e

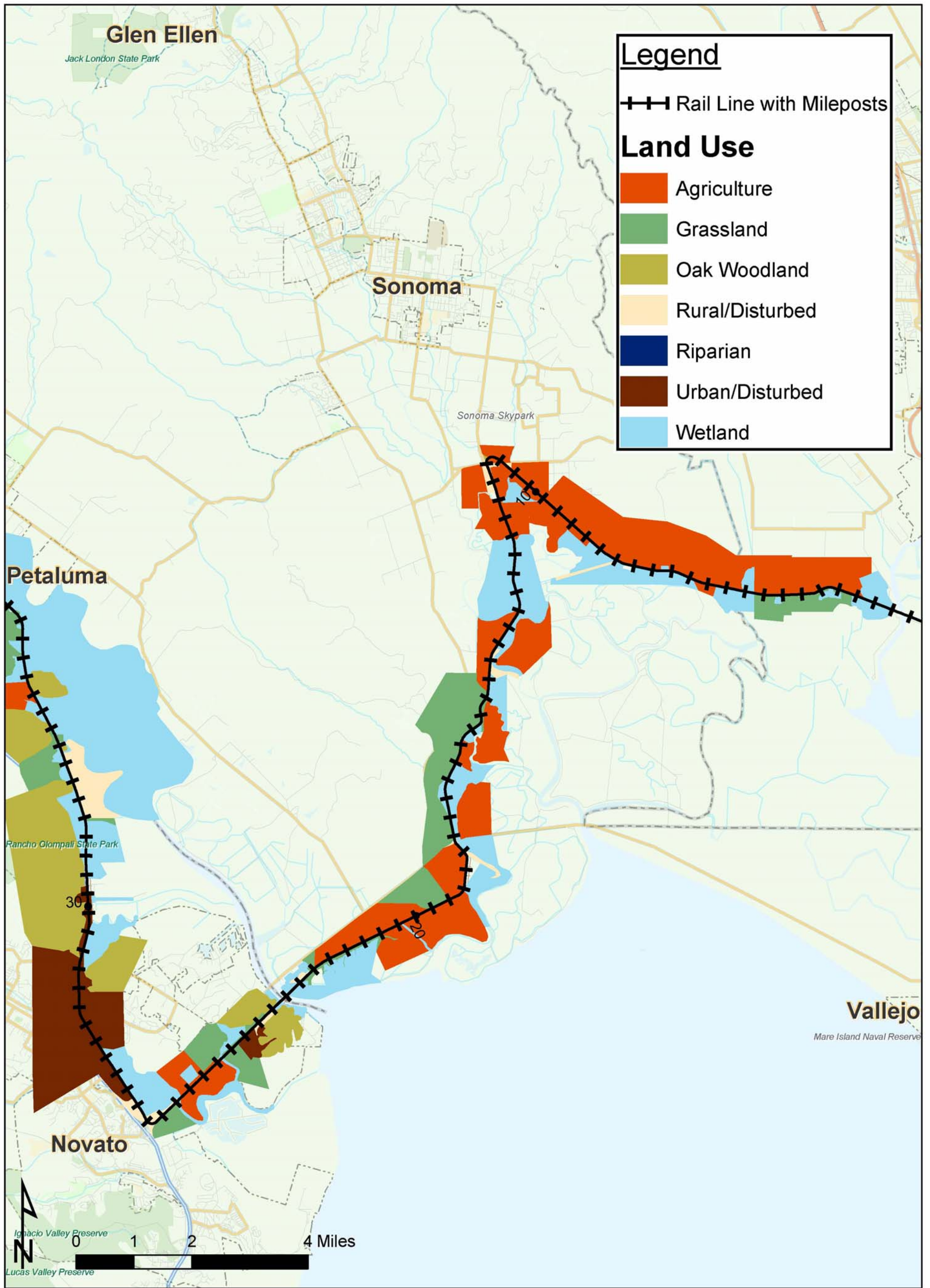
PLANT COMMUNITIES ALONG THE PROJECT CORRIDOR

MP 50.0 TO MP 30.0

NORTH COAST RAILROAD AUTHORITY
RUSSIAN RIVER DIVISION
FREIGHT RAIL PROJECT

FIGURE

3.1-1e



PROJECT NO.	78207
DRAWN:	5/10/08
DRAWN BY:	IPM
CHECKED BY:	BE
FILE NAME:	Figure 3.1-1f

**PLANT COMMUNITIES ALONG
THE PROJECT CORRIDOR**

MP 30.0 TO MP 0.0

 NORTH COAST RAILROAD AUTHORITY
 RUSSIAN RIVER DIVISION
 FREIGHT RAIL PROJECT

FIGURE


3.1-1f



Observation 1 – Man-made berm with multiple burrows at MP 137.0.



Observation 2 – Unoccupied burrow that was partially collapsed, but has the potential to support burrowing owls at MP 136.0.


 <p>KLEINFELDER Bright People. Right Solutions.</p> <p>www.kleinfelder.com</p>	PROJECT NO. 78207	PHOTOS OF NOTABLE OBSERVATIONS	FIGURE
	DRAWN: 5/10/08		
	DRAWN BY: MLM	NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISON FREIGHT RAIL PROJECT	3.2-1a
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



Observation 3 – Active nest cavity in oak located 30 feet west of tracks at MP 134.0.



Observation 4 – Multiple stick nests were observed between MP 134.0 and 132.0.


 <p>KLEINFELDER Bright People. Right Solutions.</p> <p>www.kleinfelder.com</p>	PROJECT NO. 78207	PHOTOS OF NOTABLE OBSERVATIONS	FIGURE 3.2-1b
	DRAWN: 5/10/08		
	DRAWN BY: MLM	NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISON FREIGHT RAIL PROJECT	
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



Observation 5 – Burrow complex located on east side of tracks at MP 133.0.

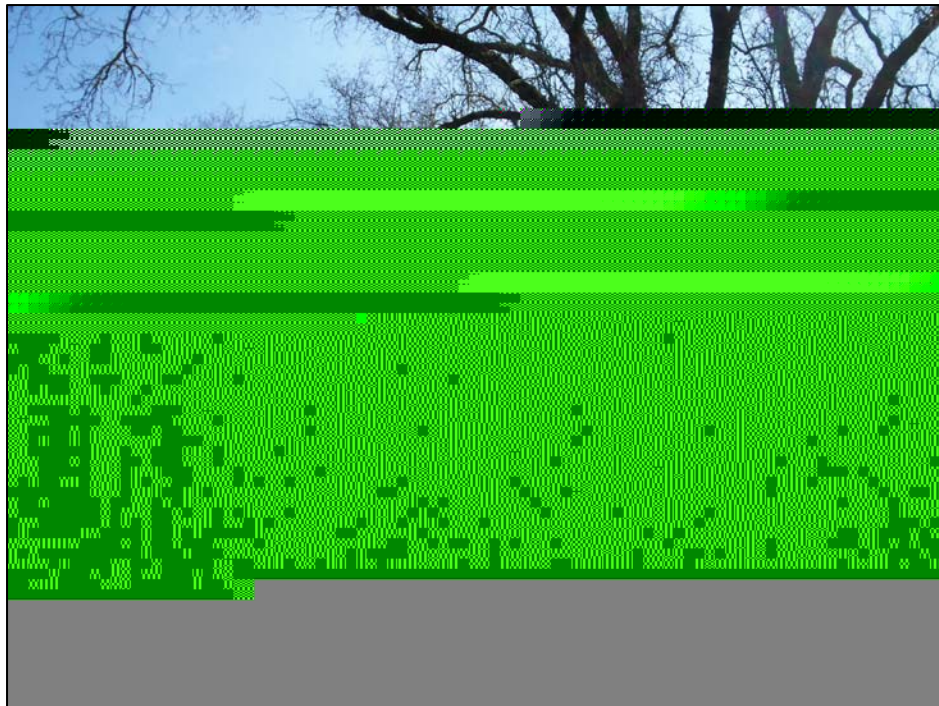


Observation 6 – Snag where red-tailed hawk was perched, near active nest site at MP 132.0.


 <p>KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com</p>	PROJECT NO. 78207	PHOTOS OF NOTABLE OBSERVATIONS	FIGURE
	DRAWN: 5/10/08		
	DRAWN BY: MLM	NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISION FREIGHT RAIL PROJECT	3.2-1c
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



Observation 7 – Active red-tailed hawk nest site at MP 132.0.



Observation 8 – Inactive large stick nest in black oak at MP 125.0.

 <p>KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com</p>	PROJECT NO. 78207	PHOTOS OF NOTABLE OBSERVATIONS	FIGURE
	DRAWN: 5/10/08		
	DRAWN BY: MLM	NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISON FREIGHT RAIL PROJECT	3.2-1d
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



Observation 9 – Stick nest in pine tree at MP 124.0.



Observation 10 – Berm along vineyard with multiple burrows at MP 122.0.



Typical burrow in complex.




Observation 11 – Burrow complex near orchard at MP 112.0.



Typical burrow in complex.




Observation 12 – Remnant nests in cottonwood trees along vineyard and Russian River at MP 103.0.

 <p>www.kleinfelder.com</p>	PROJECT NO. 78207	<p>PHOTOS OF NOTABLE OBSERVATIONS</p>	<p>FIGURE</p>
	DRAWN: 5/10/08		
	DRAWN BY: MLM	<p>NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISON FREIGHT RAIL PROJECT</p>	<p>3.2-1f</p>
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



Observation 13 – Oak tree used for roosting by turkey vultures at MP 13.0.

 <p>KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com</p>	PROJECT NO. 78207	PHOTOS OF NOTABLE OBSERVATIONS	FIGURE
	DRAWN: 5/10/08		
	DRAWN BY: MLM	NORTH COAST RAILROAD AUTHORITY RUSSIAN RIVER DIVISION FREIGHT RAIL PROJECT	3.2-1g
	CHECKED BY: MOR		
	FILE NAME: Figures 3.2-1		



4.0 REFERENCES USED FOR SPECIES IDENTIFICATION

- Burt, William H., and Grossenheider, Richard P., 1980, Mammal, Peterson Field Guides (3rd ed.), Houghton Mifflin.
- California Department of Fish and Game, 2006, California Natural Diversity Data Base, The Resources Agency: Sacramento, California.
- Hickman, James C, 1993, The Jepson Manual: Higher Plants of California, Berkeley, California: University of California Press.
- Holland, R.F, 1986, Preliminary Description of the Terrestrial Natural Communities of California, Sacramento, California: Resources Agency.
- Knopf, Alfred A., 1995, National Audubon Society Field Guide to North American Birds: Eastern Region, Chanticleer Press, Inc.
- Peterson, Robert Troy, 1990, Peterson Field Guides-A Field Guide to Western Birds, Houghton Mifflin Company.
- Sawyer, John O., and Keeler-Wolf, Todd, 1995, A Manual of California Vegetation, California Native Plant Society.
- Sibley, David Allen, 2001, The Sibley Guide to Birds, Knopf.
- USACE, 1987, U.S. Army Corps of Engineers Wetlands Delineation Manual, Department of the Army.



This page left blank intentionally