

OLBERDING ENVIRONMENTAL, INC.

Wetland Regulation and Permitting

PD 98-020

June 1, 2009



Ms. Kim Rosen
Compass Management Group
20 Great Oaks Boulevard, #220
San Jose, CA 95119

Subject: 2009 Year 9 Monitoring Report for the Rubino Development Site.

Dear Ms. Rosen:

The following document has been prepared to present the Year 9 monitoring results for the Rubino Development - Riparian Restoration Project (Restoration Project), located in San Jose, California.

This report has been prepared as specified in the *Mitigation/Monitoring Plan for Riparian Impacts Associated with the Rubino Development Project*, prepared for KB Home by Olberding Environmental, Inc. (Olberding Environmental). Preparation of this report complies with the requirements established by the City of San Jose Planning Department in the "Conditions of Approval" developed for the Rubino Development Project. Mitigation monitoring efforts are also being coordinated with the following agencies: U.S. Army Corps of Engineers (File No. 23551S); Regional Water Quality Control Board (File No. 2188.07 (JAM)); and California Department of Fish and Game (Notification No. 0437-98).

This is the seventh of eight monitoring reports required for this project. A final report is to be prepared and submitted in 2010. As of May 2009, the site has achieved a 65.0 cumulative survival rate, which is below the required 80 percent for the site. In order to achieve the 80 percent cumulative survival rate set for the site, a minimum of 104 new restoration plants need to be replanted within the Restoration Project area.

If you have any questions in regard to the monitoring efforts or the content of this monitoring report please do not hesitate to call me at (925) 825-2111.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Olberding". The signature is fluid and cursive.

Jeff Olberding
Wetland Regulatory Scientist

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YEAR 9 (2009)

MITIGATION/MONITORING REPORT

FOR

RIPARIAN IMPACTS ASSOCIATED WITH THE

RUBINO DEVELOPMENT PROJECT

SAN JOSE, CALIFORNIA

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MAY 2009

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- Figure 7 Guadalupe River Riparian Corridor

ATTACHMENT 2 SITE PHOTOGRAPHS (Spring 2009)

This report should be cited as: Olberding Environmental, Inc. May 2009. *Year 9 (2009) Mitigation/Monitoring Report for Riparian Impacts Associated with the Rubino Development Project, San Jose, California.* Prepared for KB Homes, Pleasanton, California.

1.0 Summary

The following document has been prepared to present the Year 9 monitoring results for the Rubino Development Riparian Restoration Project (Restoration Project), located in San Jose, California. This report has been prepared as specified in the *Mitigation/Monitoring Plan for Riparian Impacts Associated with the Rubino Development Project*, prepared for KB Home by Olberding Environmental, Inc. (Olberding Environmental). Preparation of this report complies with the requirements established by the City of San Jose Planning Department in the "Conditions of Approval" developed for the Rubino Development Project.

The objectives of the Year 9 monitoring report are to ensure that plant survival goals continue to be met, to identify maintenance activities needed, to provide photo documentation points, to identify remedial actions to be performed, and to provide final conclusions on the establishment of riparian habitat within the riparian mitigation site for the specified year monitoring is conducted. The purpose of obtaining information on these monitoring elements is to evaluate the effectiveness of the revegetation project at providing the quality and quantity of riparian habitat along the Guadalupe River and Canoas Creek that meet or exceed habitat values and functions prior to project implementation. This monitoring report is the seventh of eight that shall be used to determine the overall success of the Rubino Development Riparian Restoration Project site (mitigation site). The mitigation site will be monitored over a minimum 11-year period to ascertain whether the performance and success criteria are being met. Monitoring will be conducted annually for the first five years starting in 2001 and then every other year until Year 11.

In summary, the mitigation site has a **65.0** percent cumulative survival rate for the Year 9 monitoring period as of May 12, 2009. This number represents a 23.0 percent decrease from the Year 7 monitoring period. A total of 689 plants were planted along the Canoas Creek and Guadalupe River mitigation areas, of which **448** were observed alive during the Year 9 monitoring period.

Remedial planting is required at this time. In order to reach the minimum survival criteria set forth for the Restoration Project of 80 percent cumulative survival, a minimum of 104 mitigation plants must be installed. This includes at least 101 plants along the Canoas Creek corridor and at least three plants along Guadalupe River. Plant vigor and health, and vegetative performance criteria, were also assessed for the mitigation area during Year 9. The majority of the plant species exhibited an average of medium or high vigor and health. The species composition was found to be well within the tolerated deviation of the mitigation plan.

The majority of the trees and shrubs are continuing to spread over the ground providing a low to medium percent cover value. However, percent cover values would increase greatly with regular grounds keeping maintenance. During the May 12, 2009 site visit, the site was observed to be overrun by non-native species such as ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), wild radish (*Raphanus raphanistrum*), and bristly oxtongue (*Picris echioides*) among others. These non-natives spread fast and are approaching heights of up to five feet tall, making it difficult to find the mitigation plants or displacing them altogether.

In addition to excessive weed growth, yard waste is being disposed of by the neighboring residents over the fence and onto the mitigation site. This has had a negative impact on the mitigation plants as several were observed damaged or killed. Adjacent residents are also responsible for inadvertent weed whacking of mitigation plants. In summary, weed maintenance and remedial planting are necessary in order to head back toward the trend of meeting the established success criteria. Other remedial actions involve posting signs for the nearby residents explaining not to dispose of their trash onto the mitigation site and to avoid trespassing on the site in general.

2.0 Introduction

2.1 Project Background

The Rubino Development Project was required to mitigate direct and indirect impacts to the riparian corridor and setback buffer areas along the Guadalupe River and Canoas Creek. The direct impacts from the Rubino Project consisted of the encroachment into 0.25 acres of the existing riparian corridor along the Guadalupe River. Indirect impacts are associated with the encroachment of the project into the setback buffer areas of Canoas Creek and the Guadalupe River for a total of 1.37 acres.

The City of San Jose (City) has developed a Riparian Corridor Policy with the intent of minimizing impacts to riparian resources and protecting riparian habitat from future development activities. The City's Riparian Corridor Policy calls for a 100-foot buffer from the edge of the riparian corridor (dripline of riparian vegetation or top of bank when riparian vegetation is absent) to all buildings, structures, and improvements except in certain instances where setbacks of less than 100 feet are appropriate. A 50-foot buffer has been established along Canoas Creek. Development encroachment into the 50-foot setback buffer will result in the requirement of 2.18 acres of compensatory mitigation to offset impacts associated with the Rubino Development Project.

Mitigation measures have been implemented to offset project impacts to both riparian corridors. The mitigation plan included several distinct components that, when added collectively, provide up to 2.18 acres of riparian mitigation habitat infill area to compensate 0.25 acres of direct impact and 1.37 acres of indirect impact associated with encroachment into the existing riparian corridor and setback buffers of Canoas Creek and the Guadalupe River. It is anticipated that the mitigation habitat areas will significantly improve both riparian corridors by replacing the extremely degraded conditions that formerly existed within the setback buffer areas with a densely planted vegetated landscape. Additionally, sections of the setback buffer along the Guadalupe River have also experienced significant improvements in functional value to wildlife through the removal of debris, concrete, asphalt and other discarded materials. The mitigation site was installed by KB Home in 2000 following construction of the Rubino Development Project. A total of 1075 trees and shrubs were specified as being planted within the mitigation site.

2.2 Location

The 97-acre Rubino Development Project site is located north of Old Hillsdale Avenue, south of Bluejay Drive, single family residence and the Canoas Gardens Elementary School, and is situated between the Guadalupe River to the west and Canoas Creek to the east, in the City of San Jose, Santa Clara County, California (Attachment 1, Figures 1-4). The mitigation sites are identified in Attachment 1, Figures 5-7 and are bordered by Canoas Creek to the east, existing apartment buildings to the south and new residential development to the north and west. The mitigation sites can be accessed by the newly constructed extension of Pearl Avenue and Rubino Drive. Attachment 1, Figure 1 contains a regional map of the Restoration Project site in relation to the Bay Area region, while Attachment 1, Figure 2 contains a vicinity map of the Restoration Project site in the City of San Jose. Attachment 1, Figure 3 displays the Restoration site on the USGS quadrangle map for San Jose West and San Jose East. Attachment 1, Figure 4 contains an aerial photograph of the Restoration Project site.

3.0 Maintenance Activities and Monitoring Methods

3.1 Maintenance Activities

KB Home has contracted with a landscape maintenance company to weed the mitigation site, replace plant stock and maintain the irrigation system, checking for leaks, clogs, or other malfunctions in the dripline system. Maintenance activities on the mitigation site have consisted of irrigation system checks, repair of planting basins, and weed control.

3.2 Monitoring Methods

Monitoring of the Restoration Project site was conducted on May 12, 2009 by Olberding Environmental biologist, David Simi. Site inspections were conducted within the mitigation site including visual inspections of the trees and shrubs that were previously installed. All plants that were visible were counted within the mitigation site during the Year 9 monitoring period as the majority of the plants had not overgrown each other to the extent that they were no longer identifiable as individuals. In addition, weed growth along the Canoas Creek corridor made it difficult in some areas to locate the mitigation plants.

Monitoring zones identified on the as-built map sheets will be used once the individual plants are no longer identifiable. Therefore, percent survival calculations for the Year 9 monitoring effort are based on the total number of plants in the entire mitigation area. Each of the installed plants was individually counted and the ground adjacent to the plant marked with nonpermanent marking paint to avoid counting duplication. Each plant was counted and marked on the planting maps as present, dead, or missing. Additional information was gathered on plant vigor and health and recorded on field data sheets along with the number of volunteer plants that had grown within the mitigation site since Year 7 information was collected in 2007. Information gathered in 2009 was compared against baseline conditions established by Olberding Environmental in 2001.

The Restoration Project mitigation planting along Guadalupe River is represented by map sheets L-7 and L-10; while the mitigation planting along Canoas Creek is represented by map sheets L-14 and L-15 (refer to the sheet set in the Baseline Conditions Report). The data for each riparian area has been analyzed as a unit combining the data for the two map sheets representing each creek corridor.

3.3 Data Analysis

The number of plants that were counted as alive, dead, or missing were tabulated and analyzed as a percentage of the total number of specified plants within each creek corridor. The total number of plants that were observed alive was subtracted from the total number of plants known to be planted in each creek corridor to determine the number of remedial plants necessary to meet mitigation requirements. The percent survival for each species is based on the combined number of dead and missing plants subtracted from the total as both of these categories need to be analyzed to compare to baseline specification numbers.

3.4 Performance Criteria

Percent cover and tree height were evaluated for the Restoration Project during the Year 9 monitoring period. The goal for the mitigation site is to provide 60 percent total cover for trees and 40 percent total cover for shrubs within five years. These goals are not success criterion as the trees in the mitigation site are not anticipated to reach full maturity until sometime after the 11-year monitoring period.

Despite the losses in plant survival from a year ago, surviving plants on the site are continuing to spread out and overlap one another, such as the shrub species like toyon (*Heteromeles arbutifolia*) and California rose. Maintenance activities to remove the dense non-native vegetation would further help to allow the growth of the native mitigation plants. Based on the Year 7 monitoring period in 2007, with regular maintenance, the site was well on its way to achieving the desired cover goals. Based on this year's monitoring event, it is difficult to get an accurate measurement of native plant cover as the site along the Canoas Creek corridor is dominated by non-native vegetation. The mitigation trees, on the other hand, are continuing to grow as expected. The western sycamore trees along Canoas Creek and Guadalupe River exhibited excellent canopy cover for their size. The tree canopy covered an approximate 15 to 20-foot diameter around the tree trunk. Photo point locations that demonstrate the mitigation sites were revisited and photos taken to record the 2009 conditions can be seen in Attachment 2.

4.0 Results

4.1 Planting Specifications

The plant species used for the baseline mitigation planting during 2000 consisted of California Buckeye (*Aesculus californica*), California Flannel Bush (*Fremontodendron californicum*), western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), valley oak (*Quercus*

lobata), Mexican elderberry (*Sambucus mexicana*), California toyon, coffeeberry (*Rhamnus californica*), California rose (*Rosa californica*), and California blackberry (*Rubus ursinus*). However, the planting palette for the mitigation sites specified two plant species that were not utilized in the planting during the baseline conditions. California buckwheat (*Eriogonum fasciculatum*) and bush lupine (*Lupinus arboreus*) were replaced with snowberry (*Symphoricarpos sp.*) and buckbrush (*Ceanothus sp.*) respectively. One additional replacement plant species was observed starting in the Year 3 monitoring period called Pride of Madeira (*Echium sp.*). This plant was used along both Canoas Creek and the Guadalupe River planting areas to replace missing or dead plants from the baseline monitoring period.

4.2 General Conditions

Many weed species were observed to be growing in and immediately around the planting bowls of the mitigation species and within the general planting area during the 2009 monitoring event. The main problem area occurs along the Canoas Creek corridor, where the entire site is dominated by dense, tall weed species that are beginning to out-compete the native mitigation plants. Moderate to heavy weed growth was observed along the Guadalupe River site. The weed species consisted of common invasive plants which germinate in early winter at the first rains or with irrigation as provided by the mitigation site. Many of the weeds reached heights of 4 to 6 feet, with several reaching heights in excess of 8 feet.

The weeds overtopped the majority of the mitigation plant material and are competing with the plants for water and resources in the planting bowl. The weed species observed were dominated by ripgut brome, wild oat, wild radish, and bristly oxtongue, with prickly lettuce (*Lactuca serriola*), horseweed (*Conyza canadensis*), poison hemlock (*Conium maculatum*), red-stemmed filaree (*Erodium cicutarium*), cheeseweed (*Malva parviflora*), goosefoot (*Chenopodium album*), mustards (*Brassica sp.*), and miscellaneous annual grass species also commonly occurring. The large size and excellent color of the weed species indicate that they were either able to utilize the irrigation provided by the sprinkler system that was intended for the mitigation species or that they took advantage of the late season rains this year.

Vegetative cover by weed species is 100 percent throughout the Restoration site on the Canoas Creek side and roughly 80 percent on the Guadalupe River side (Attachment 2). Based on the height and amount of weed species on the site, it appears that maintenance crews have not been out to weed the site or check irrigation lines for some time. Herbicide overspray intended for invasive weed species was, again, observed to have negative impacts on the blackberry, snowberry, and coffeeberry shrubs lining the fence along Canoas Creek. This has been a recurring problem since monitoring started in 2001. Among the hardest hit by herbicide overspray has been the California blackberry shrubs. Since 2001, Canoas Creek has lost 152 blackberry shrubs (31.5 percent survival rate), the majority of which can be attributed to herbicide overspray.

In addition to excessive weed growth, yard waste is being disposed of by the neighboring residents over the fence adjoining the mitigation site with their property. These yard trimmings, which include large branches, were observed to have landed on and killed several stands of some

of the smaller mitigation shrubs, such as snowberry and coffeeberry. Residents are also responsible for the removal of roughly 50 California rose shrubs at the northern end of the mitigation site along Canoas Creek (Attachment 2, Photo 6). It appears that the weeds grew to such heights that a nearby resident took a weed whacker to the mitigation site and completely mowed down the northern section of the site, taking the mitigation roses out in the process.

4.3 Mitigation Planting Survivorship

The two types of success criteria which have been applied to the mitigation plantings are overall survival and cumulative survival. The overall survival for the mitigation site is **65.0** percent and is based on the survival of all plants in the mitigation area including replacement stock installed where original plants died. The cumulative success criterion is 60 percent and is based only on the number of the original plants installed within the mitigation area.

The results of the survivorship count for the Year 9 monitoring are included in Table 1, "Survivorship for Year 9 Monitoring Period." The overall and cumulative survivorship for the mitigation site was 65.0 percent, which includes the Canoas Creek and Guadalupe River mitigation areas. The percent survival for Year 9 indicates a decrease in 23 percent from the 88.0 percent survival calculated during Year 7 monitoring. During the Year 1 monitoring event, 67 plants were recorded as dead or missing; during the Year 2 monitoring event, 51 plants were recorded as dead or missing; during Year 3, 45 plants were recorded as dead or missing; during Year 4, 83 plants were recorded as dead or missing; during Year 5, 95 plants were recorded as dead or missing; and during Year 7, 85 plants were recorded as dead or missing. These plants have often been replaced in an ongoing effort to maintain the original number of plants utilized in the mitigation effort. During the Year 9 monitoring event, 391 plants were recorded as dead or missing (this number takes into account all plants observed dead or missing, including volunteers and over-planted stock).

Overall, the survivorship for the mitigation planting areas along the Guadalupe River was much higher than observed for Canoas Creek. A higher mortality rate was observed among the planted shrubs than the trees (Table 2, "Survival Ratio for Trees and Shrubs"). This was attributed to a number of factors. The snowberry, coffeeberry, and blackberry shrubs in the Canoas Creek area were observed to have the highest mortality rate. These shrubs have never fully recovered from the damage they received during weeding attempts from Years 3 to 5. Healthy plants were pulled from the ground or were cut to the base. In addition, regular herbicide use along the fenceline continues to have a negative impact on these species. There were 22 less snowberry plants and 71 less blackberry plants counted in the Canoas Creek area in comparison to Year 7. This includes the several volunteers that were being generated by the blackberry shrubs. While there was only one less coffeeberry shrub in Year 9 as compared to Year 7, the site is still 77 shrubs lower than the required 103 for this portion of the site.

Table 1 Survivorship for Year 9 Monitoring Period			
Planting Area	# Plants Alive/ # Plants Specified on Plans	% Survival	Total # Remedial Plants Needed¹
Map Sheet L-14 and L-15 (Canoas Creek)	331/539	61.4	101
Map Sheets L-7 & L-10 (Guadalupe River)	117/150	78.0	3
Total for Planted Rubino Development Project Mitigation Areas	448/689	65.0	104

1. Required survival on site is 80%. Replacement numbers based on 80 percent of total installed.

Table 2 Survival Ratio for Trees and Shrubs			
Plant Type	Total Dead and Missing	# Counted Alive/ # Specified on Plans	% Survival
Trees	8	58/65	89.2
Shrubs	383	390/624	62.5
Total	391	448/689	65.0

5.0 Data Analysis

5.1 Plant Survival

The percent survival data for the mitigation monitoring of the mitigation sites is provided in Tables 3 and 4, "Species Summary for Map Sheet L-14 and L-15-Canoas Creek Planting," and "Species Summary for Map Sheets L-7 and L-10-Guadalupe River Planting." The number of plants counted alive, dead/missing, the number recorded on the map legend, and the percent survival are provided for each species by each planting area (Canoas Creek and Guadalupe River).

Table 3
Species Summary for Map Sheet L-14 and L-15 - Canoas Creek Planting (May 2009)

Common Name (Scientific Name)	# Counted Alive	# Counted Dead/Missing	# Plants Recorded on Map Legend	# Remedial Plants Needed ¹	% Survival
Western Sycamore (<i>Platanus racemosa</i>)	17	3	20	0	85.0
Coast Live Oak (<i>Quercus agrifolia</i>)	8	0	8	0	100.0
Snowberry (<i>Symphoricarpus sp.</i>)	45	66	111	26	40.5
Coffeeberry (<i>Rhamnus californica</i>)	26	77	103	42	25.2
California Rose ² (<i>Rosa californica</i>)	157	50	75	0	209.3
California Blackberry (<i>Rubus ursinus</i>)	70	152	222	33	31.5
Pride of Madeira (<i>Echium sp.</i>)	8	0	0	0	NA
Total Plants	331	348	539	101³	61.4

1. Required survival on site is 80%. Replacement numbers based on 80 percent of total installed.
2. 80 rose recruits (grown by rhizome) were counted in addition to those planted.
3. Number based off 80 percent cumulative survival for Canoas Creek corridor. Snowberry, coffeeberry, and California blackberry were picked to be reinstalled as they displayed the lowest survival rates.

Table 4
Species Summary for Map Sheets L-7 and L-10 - Guadalupe River Planting (May 2009)

Common Name (Scientific Name)	# Counted Alive	# Counted Dead/Missing	# Plants Recorded on Map Legend	# Remedial Plants Needed ¹	% Survival
California Buckeye (<i>Aesculus californica</i>)	5	0	5	0	100.0
California Flannel Bush (<i>Fremontodendron californicum</i>)	3	4	7	1	42.8
Western Sycamore (<i>Platanus racemosa</i>)	12	0	12	0	100.0

Coast Live Oak (<i>Quercus agrifolia</i>)	11	1	11	0	100.0
Valley Oak (<i>Quercus lobata</i>)	2	0	2	0	100.0
Mexican Elderberry (<i>Sambucus mexicana</i>)	2	0	2	0	100.0
Snowberry (<i>Symphoricarpus sp.</i>)	11	5	16	0	68.7
California Toyon (<i>Heteromeles arbutifolia</i>)	19	6	25	0	76.0
Pride of Madeira (<i>Echium sp.</i>)	9	0	7	0	128.6
Coffeeberry (<i>Rhamnus californica</i>)	13	17	30	2	43.3
California Rose ² (<i>Rosa californica</i>)	14	10	24	0	58.3
California Blackberry (<i>Rubus ursinus</i>)	16	0	9	0	177.8
Total Plants	117	43	150	3³	78.0
<p>1. Required survival on site is 80%. Replacement numbers based on 80 percent of total installed.</p> <p>2. 21 rose recruits (grown by rhizome) were counted in addition to those planted.</p> <p>3. Number based off 80 percent cumulative survival for Guadalupe River corridor. Coffeeberry and flannel bush were picked to be reinstalled as they displayed the lowest survival rates.</p>					

Trees

Overall, the survival ratio for the tree species was much higher than exhibited in the shrub species. A total of eight tree deaths occurred within the Guadalupe River and Canoas Creek planting areas within the Year 9 monitoring period. Three western sycamores were dead in the Canoas Creek mitigation area, while four flannel bush and one coast live oak were dead in the Guadalupe River mitigation area. Four additional flannel bush and one coast live oak were dead or missing in the Guadalupe River mitigation area. No further tree deaths were observed within the Year 9 monitoring period, however two buckeye trees were observed in poor condition on the south end of Guadalupe River, apparently from lack of water. The total number of trees counted as alive in 2009 is 58, and the total number specified by the planting plan is 65. Based on the required number of trees for the mitigation area, the overall and cumulative survival is 89.2 percent.

Shrubs

The overall mortality rate for the shrub species was higher than the trees as 383 shrubs were recorded as missing or dead (including recruits and over-planted stock) during the Year 9 monitoring event. Despite this large number of losses to shrubs, the survival ratio is still 62.5 percent due to remediation efforts and the volunteer growth of certain shrubs (namely the California rose).

The mitigation areas along Canoas Creek experienced the largest number of mortalities in the shrub planting as there were 66 missing or dead snowberry plants, 77 missing or dead coffeeberry plants, and 152 missing or dead blackberry plants in Year 9. The majority of these losses can be attributed to accidental removal or damage by the maintenance crew and over-spraying of herbicides. The rest were attributed to faulty irrigation lines, competition by overgrown weed species, weed whacker damage from neighbors, and damage from residential yard trimming disposal.

5.2 Plant Vigor and Health

The qualitative assessment of overall plant vigor and health was evaluated for the mitigation planting areas based on the average health for each planted species. The averages of plant vigor and health were determined to fall under the following categories:

high (67-100% healthy foliage);
medium (34-66% healthy foliage); or
low (0 to 33% healthy foliage).

Table 5, "Summary of Plant Vigor and Health by Species," summarizes the analysis of the different plant species found in the Rubino Development Project mitigation area.

Plant Species	Vigor and Health Rating
Western Sycamore	High
Coast Live Oak	High
California Buckeye	High
California Flannel Bush	Medium to High
Valley Oak	High
Mexican Elderberry	Low to Medium
Snowberry	Medium

California Toyon	Medium to High
Buckbrush	Low (all dead)
Coffeeberry	Medium to High
California Rose	High
California Blackberry	Low to Medium
Pride of Madeira	High

The health and vigor of several species were excellent due to the excessive growth of the plants in comparison to the spring 2007 observations. The surviving coffeeberry, California rose, western sycamore, coast live oak, valley oak, toyon, and California buckeye continued to grow very well and expand in size and demonstrate excellent leaf color and leaf abundance.

The coffeeberry plants were observed to have continued to grow very well and overlap each other where planted closely together. A band of shrubby vegetation continues to form in the areas where coffeeberry was planted in clusters. The shrubs continue to exhibit excellent leaf color, fruit, and expanding surface area in the spring of 2009, with some individuals on the Canoas Creek side approaching 10 feet in height and expanding 15 to 20 feet in diameter.

The blackberry shrubs on the Canoas Creek side of the mitigation area have suffered a major drawback at the hands of herbicidal overspray and the abundance of non-native plant species. In the spring of 2007, individual blackberry plants began forming mats of vegetation and sending runners such as observed within a naturally established creek side area. Accidental herbicidal spraying by the Santa Clara Valley Water District maintenance crews along the Canoas Creek levee located to the east of the restoration site has been a recurring problem since 2002. In fact, an estimated 85 blackberry shrubs have been killed in this way from the summer of 2002 to the summer of 2005. In 2009, there was a shortage of 152 plants in this area, with a majority of the plant deaths occurring along the levee. Those plants that have survived are competing with the excessive non-natives on the site. The blackberry shrubs may continue to recover if not sprayed again and will resume their current growth form that was beginning to establish in Year 1.

The California rose bushes have exhibited excellent growth during each successive year of monitoring and this year was no exception. Benefiting from the late season rains this year, the rose bushes are among the most healthy and vigorous plants in the mitigation area. Healthy plants continue to send off runners throughout the site. These shrubs would also benefit from weed maintenance and several areas along Canoas Creek are being overtaken by non-natives. Six-foot tall rose shrubs with an eight-foot diameter were difficult to find due to the excessive weed growth. In addition, residential weed whacking activities at the northern end of the Canoas Creek area has removed roughly 50 healthy California rose shrubs.

Several snowberry and coffeeberry shrubs have gone missing since the Year 7 count in 2007. This has been partly due to out-competition with non-native species and the disposal of yard trimmings by neighboring residents. Large toyon branches from one of the neighboring homes was observed to have killed a row of mitigation plants consisting mainly of snowberry and coffeeberry.

The toyon increased in size and leaf out in both mitigation areas. Some individual toyon plants were observed to have grown several feet in size along the Guadalupe River mitigation area and were over eight feet tall with robust healthy vegetation. Several coffeeberry, toyon, and sycamore trees were observed to be overgrowing the smaller shrubs in the growing area.

The western sycamore trees were observed to have grown substantially in comparison to the Year 7 conditions. During the spring of 2009, the trees were observed to be in high health. Three trees died in the summer of 2005 in the Canoas Creek planting area and were not replaced. No other deaths have occurred since then. Overall, the sycamores look tall and healthy and are expanding their ground cover and diameter. Once again, passerine nests were observed in these trees during the 2009 monitoring.

One California flannel bush died in the summer of 2003, one died in the spring of 2004, another in the summer of 2005, and another in the spring of 2009. The reason for this die back appears to be from lack of irrigation. All together, four plants are either dead or missing in the Guadalupe River area, leaving only three surviving plants. The survival percentage for the flannel bush is at 42.8 percent as of 2009. One of these plants is in excellent condition, showing vigorous growth, excellent leaf color, fruit, and expanding surface area in comparison to the Year 7 conditions. The plant is approaching 10 feet in height and was in full bloom at the time of the survey. The other two are slightly smaller and are in moderate health, but were also in bloom at the time of the survey.

One of the two Mexican elderberry shrubs along the Guadalupe River planting area is displaying very high health, exhibiting excellent leaf color and having increased in size since the monitoring event of 2007. This tree is approaching 20 feet in height. The other elderberry tree in this area was reinstalled in the spring of 2007 and is not doing well. It is roughly six feet in height, has been partially knocked down by the wind, and is displaying yellow leaf color.

Nine Pride of Madeira shrubs exist in the Guadalupe River planting area where the planting plans only call for seven. Each of these plants was observed to be healthy and is exhibiting vigorous growth, having increased greatly in size since the Year 7 monitoring event. All plants were in full bloom during the Year 9 monitoring event and were being used by a variety of insect and passerine species.

Significant growth of the coyote brush planted in zones within the mitigation areas was observed during the Year 9 monitoring event, especially along the Canoas Creek corridor. These shrubs were planted with the intent of supplying the mitigation areas with native ground cover and continue to spread. While no quantitative numbers were established for the survival of the coyote brush, it is starting to contribute to the percent cover goals established for the site.

Unfortunately, the weed species throughout the site are also displaying excellent health in the form of leaf out, flowers, and expanded size and height. Weeds were observed within both the Guadalupe River and Canoas Creek planting areas, but were much more prevalent in the Canoas Creek corridor. Weed species in this area displayed 100 percent cover, reaching heights in excess of 8 feet and covering and obscuring several mitigation plant species.

5.3 Species Composition

The species composition within the mitigation area has been altered from the original plans as there were several substitutions within the baseline planting pallet (please refer to the Baseline Conditions Report). Snowberry was substituted for California buckwheat, and ceanothus and Pride of Madeira was substituted for bush lupine. All of the buckbrush (*Ceanothus* sp.) was found to be dead, thus reducing the number of species in the planting pallet. These changes account for 134 plants within the mitigation area and amount to 19 percent of the plant material. Changes in species composition have been incorporated into the baseline conditions and will be used as the basis to monitor future species composition against. The target goal for species composition allows for a 15 percent deviation within Years 1 to 5 and 25 percent deviation by Year 11. Species composition within the mitigation area is currently 100 percent of the revised planting pallet and therefore meets the given criteria.

5.4 Percent Cover

The goal for the mitigation site is to provide 60 percent total cover for trees and 40 percent total cover for shrubs within five years. These goals are not success criterion as the trees in the mitigation site are not anticipated to reach full maturity until sometime after the 11-year monitoring period. Percent cover and tree height were evaluated for the Restoration Project for the first time starting in Year 7. Based on the second (Year 9) monitoring event, total percent cover for trees is 70 percent, while total percent cover for shrubs is 60 percent. The average height for the buckeyes is eight feet; the average height for the flannel bush is 10 feet; the average height for the sycamores is 30 feet; the average height for the live oaks is 14 feet; and the average height for the valley oaks is 14 feet.

The current trend in growth, as observed on-site, indicate that the plants will reach the desired cover goals as long as the remedial actions of plant replacement and weed maintenance are adhered to. Several of the shrub species such as toyon, blackberry, and California rose have grown to overlap each other in several areas of the mitigation site. If the plants continue to grow as anticipated, the trend will be toward meeting the percent cover goals for the mitigation site. Additionally, the western sycamore trees along Canoas Creek and Guadalupe River exhibited excellent canopy cover for their size. The tree canopy covered an approximate 12 to 18-foot diameter around the tree trunk.

6.0 Photo Documentation and Maps

Photo documentation transects were established for each map sheet to correspond to the vegetative data analysis for 2009. Transects were established in an east to west orientation and occur in 20-foot wide bands every 30 feet along the planting areas. Two additional photo documentation transects were established in the Archstone mitigation area. Please see Attachment 2 for specific photos of the mitigation monitoring site.

7.0 Remedial Actions to be Performed

- A dense growth of weeds was recorded in several areas of the mitigation site, especially along the Canoas Creek corridor. These weeds are competing with the mitigation plants for valuable resources in the planting bowls. Weeding needs to be conducted immediately and preferably biannually as specified in the monitoring plan or until the plants reach a size that the weeds cannot penetrate the watering bowl due to the large size of the mitigation specimen.
- All workers who conduct weeding must be educated to differentiate between weed species and the restoration stock. Workers shall not pull weeds until they can determine the difference between weeds and restoration plants. This has been an ongoing problem since 2002.
- Because the cumulative survival goals for the site were well under the required 80 percent, replanting of snowberry, coffeeberry, blackberry, and flannel bush must be conducted to replace those plants that were removed or killed either by accidental weeding by landscape work crews and residents, herbicide overspray, or by yard trimming disposal. A minimum of 104 restoration plants need to be replanted in order to achieve the minimum 80 percent cumulative survival for the site. This should be achieved as follows: within the Canoas Creek planting area, 26 snowberry, 42 coffeeberry, and 33 California blackberry; within the Guadalupe planting area, two coffeeberry and one flannel bush. Only two elderberry and three flannel bush are growing within the mitigation area and could be used instead of the snowberry and coffeeberry to increase the diversity of plants along the Canoas Creek corridor.
- Irrigation checks should be conducted along with weed maintenance and replanting activities. A layer of mulch material should be applied once maintenance and replanting has been conducted to help retain water and suppress weeds.
- The posting of signs for the nearby residents would be helpful explaining not to dispose of their trash onto the mitigation site and to avoid trespassing on the site in general. This should help solve the problem of restoration plants getting inadvertently weed whacked.

- The weed abatement activities for the Canoas Creek levee area should be reviewed with local agencies and coordinated such that the blackberry and other plant species in the mitigation area are no longer accidentally sprayed with herbicide.
- The tops of the coast live oaks and coffeeberry shrubs have been getting trimmed regularly. Neighboring homeowners and workers must be advised against these actions.

8.0 Names, Titles and Companies of Persons Conducting Field Work and Preparing Report

Jeff Olberding
Wetland Regulatory Specialist
Olberding Environmental, Inc.

David Simi
Biologist
Olberding Environmental, Inc.

9.0 Conclusions

In conclusion, the site has achieved a **65.0** cumulative survival rate, for below the required 80 percent for the site. In order to achieve the 80 percent cumulative survival rate set for the site, a minimum of **104** new restoration plants need to be replanted within the Restoration Project area. The surviving plants look healthy and have shown improvement in each monitoring year since 2002, but weeding, replanting, and general maintenance need to continue to ensure the goals of the mitigation site are reached in a timely manner. The removal of weeds will help the mitigation plants receive all the water and nutrients that is intended for them. It will also help the monitor ensure that all restoration plants are accounted for during the monitoring period. Based on the Year 9 monitoring event, it appears that neither weeding nor irrigation maintenance has been conducted for the Restoration Project since Year 5 in 2005.

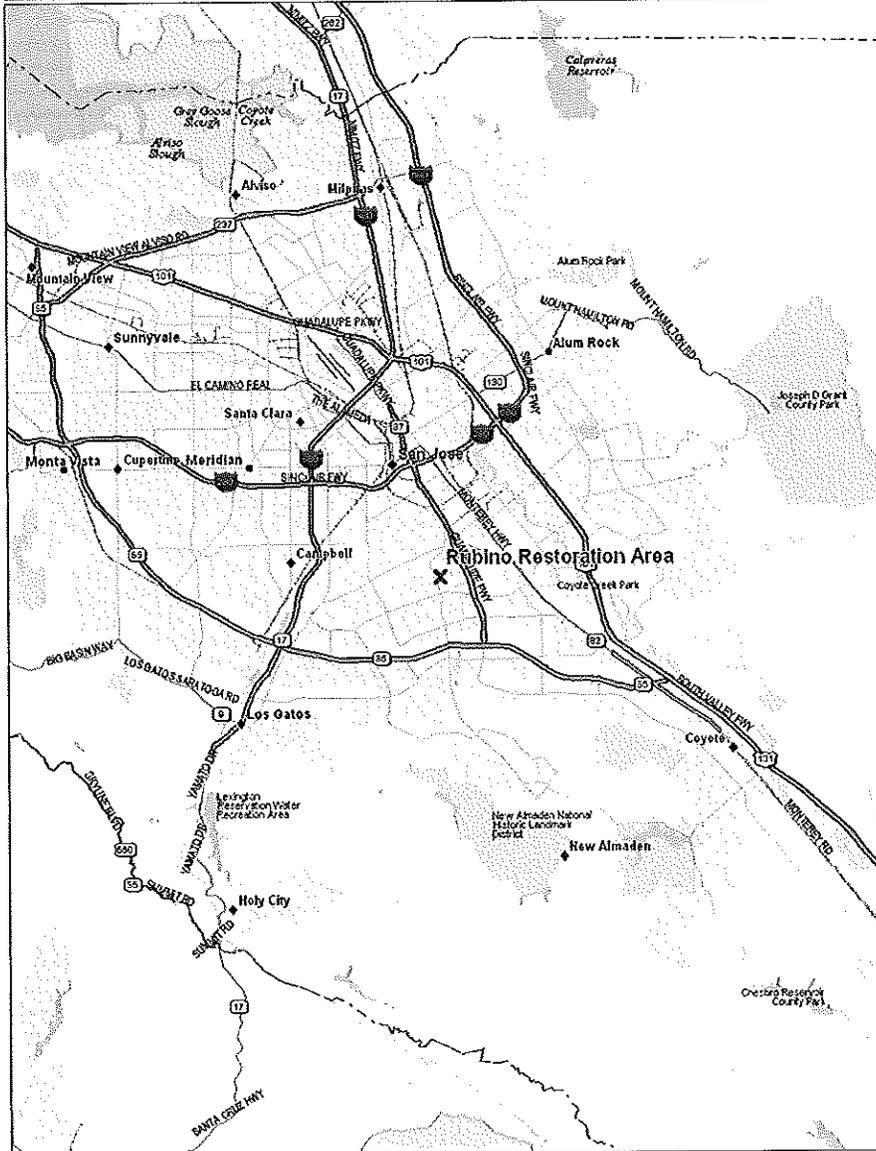
Weed cover in the Canoas Creek planting area is at 100 percent and reaches heights of four to eight feet tall. Weed cover in the Guadalupe River planting area was at 50 percent and reached heights of three to six feet tall. Maintenance crews must go to the Restoration Areas immediately along both the Guadalupe River and Canoas Creek corridors and weed the site, check the irrigation lines, and remove the litter along the Canoas Creek corridor that has been dumped there by local residents.

ATTACHMENTS

ATTACHMENT 1 FIGURES

- Figure 1 Regional Map**
- Figure 2 Vicinity Map**
- Figure 3 USGS Quadrangle Map for San Jose West
and San Jose East**
- Figure 4 Aerial Photograph**
- Figure 5 Rubino Site Map**
- Figure 6 Canoas Creek Riparian Corridor**
- Figure 7 Guadalupe River Riparian Corridor**

Figure 1
Regional Map



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MN (144° E)



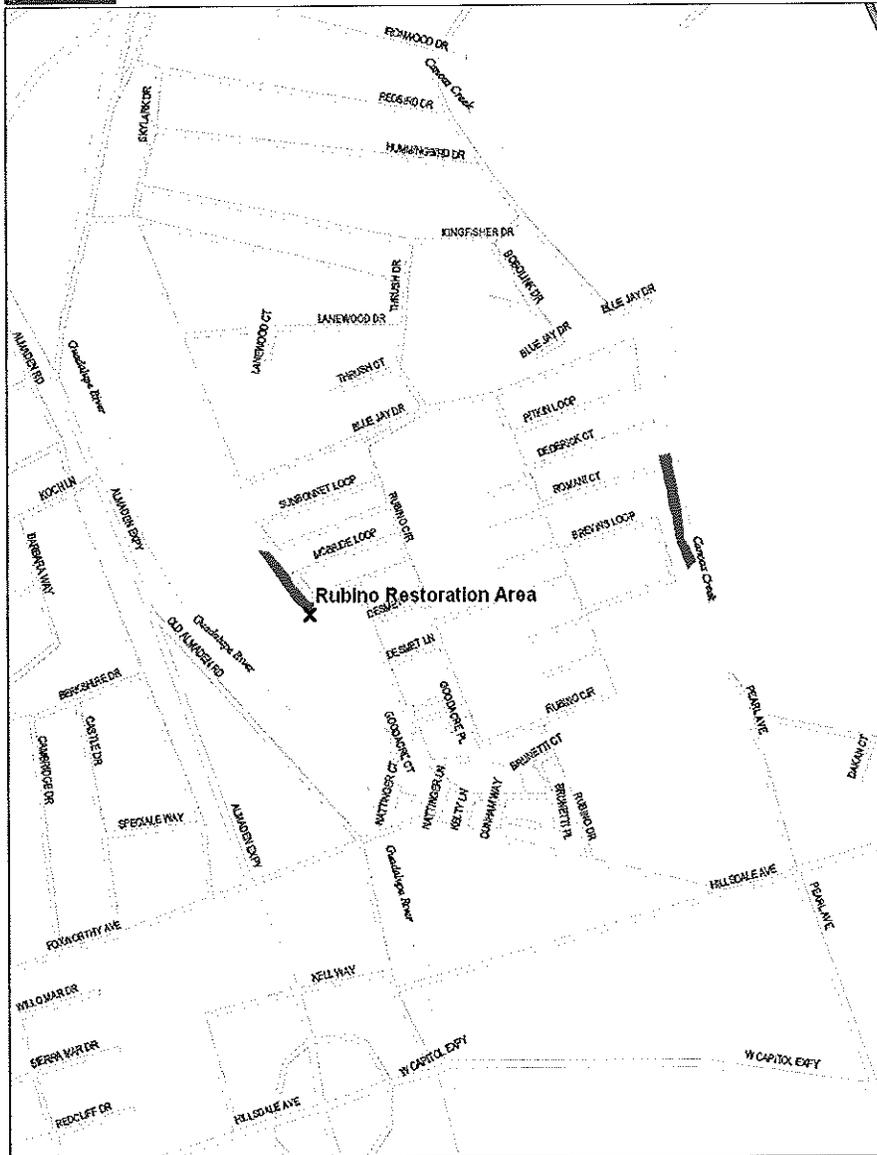
Data Zoom 10:0

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Figure 1
Regional Map of the Rubino
Restoration Area
San Jose, California

This document is not intended for detail design work.

Figure 2
Vicinity Map



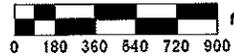
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Figure 2
Vicinity Map of the Rubino
Restoration Area
 San Jose, California

This document is not intended for detail design work.

Figure 3
USGS Quadrangle Map for San Jose West
and San Jose East

Figure 4
Aerial Photograph

Figure 5
Rubino Site Map

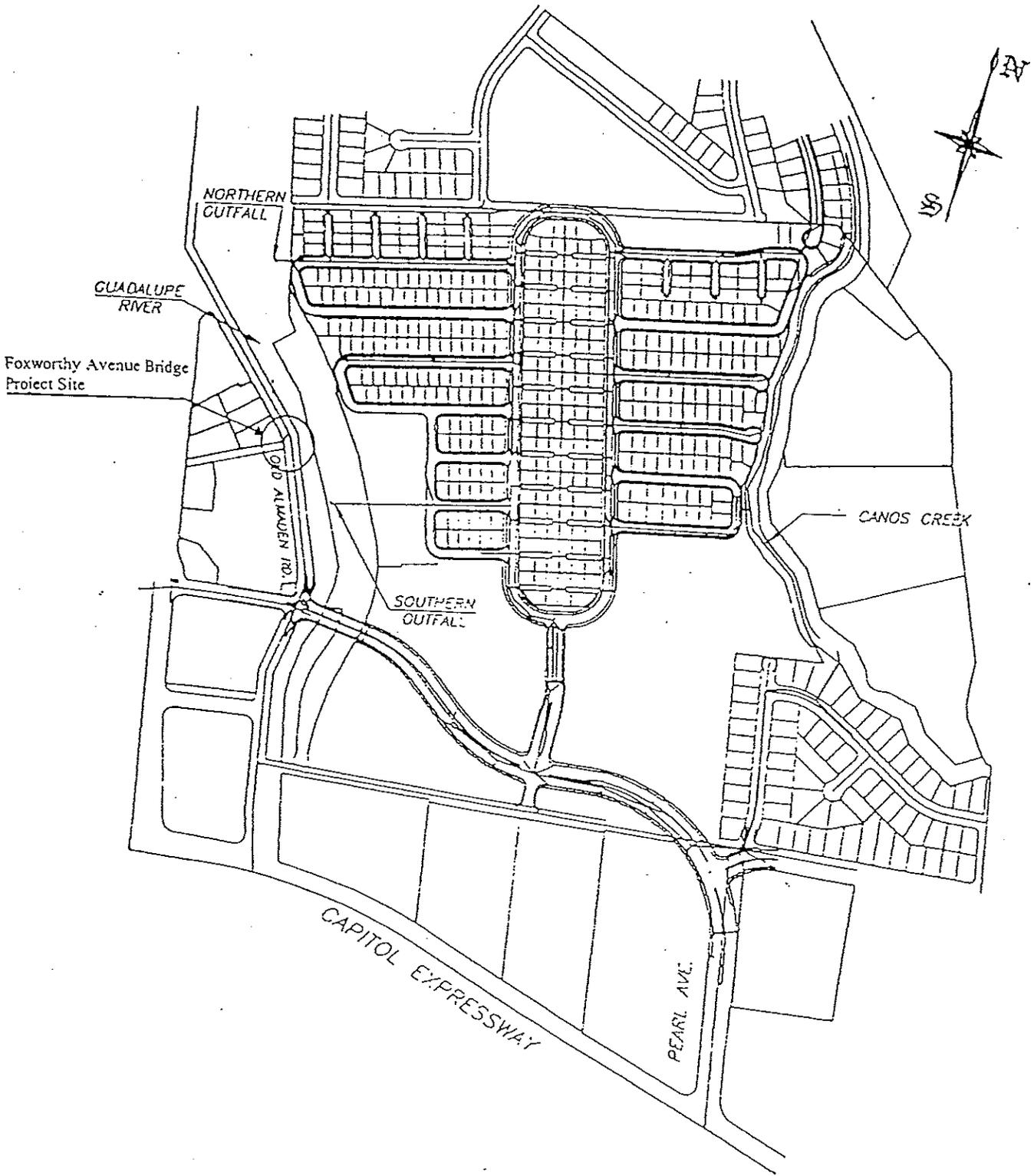


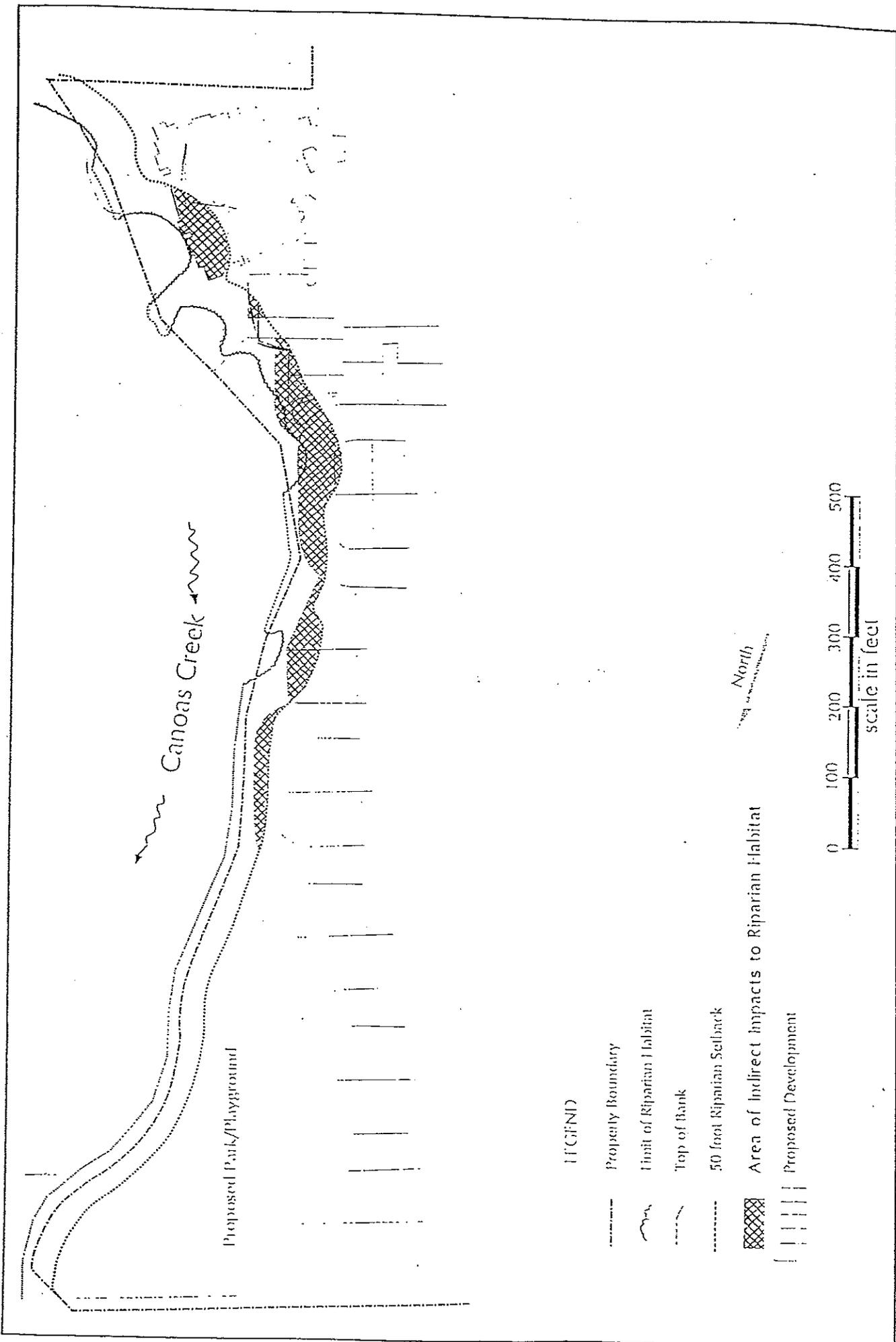
FIGURE 3

RUBINO
SITE MAP

DATE: 3/11/96
 SCALE: AS SHOWN
 DRAWN BY: BDW
 CHECKED BY:
 JCB NO.: 1537

Charles W. Davidson Co.
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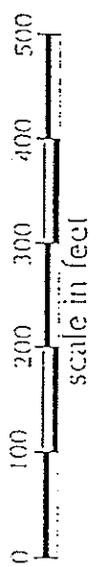
Figure 6
Canoas Creek Riparian Corridor



HIGHLIGHT

- Property Boundary
- ~~~~~ Limit of Riparian Habitat
- Top of Bank
- 50 foot Riparian Setback
- ▣ Area of Indirect Impacts to Riparian Habitat
- ||||| Proposed Development

North
Scale of map is not to be used for engineering purposes.



CANOAS CREEK RIPARIAN CORRIDOR

FIGURE 5

Figure 7
Guadalupe River Riparian Corridor

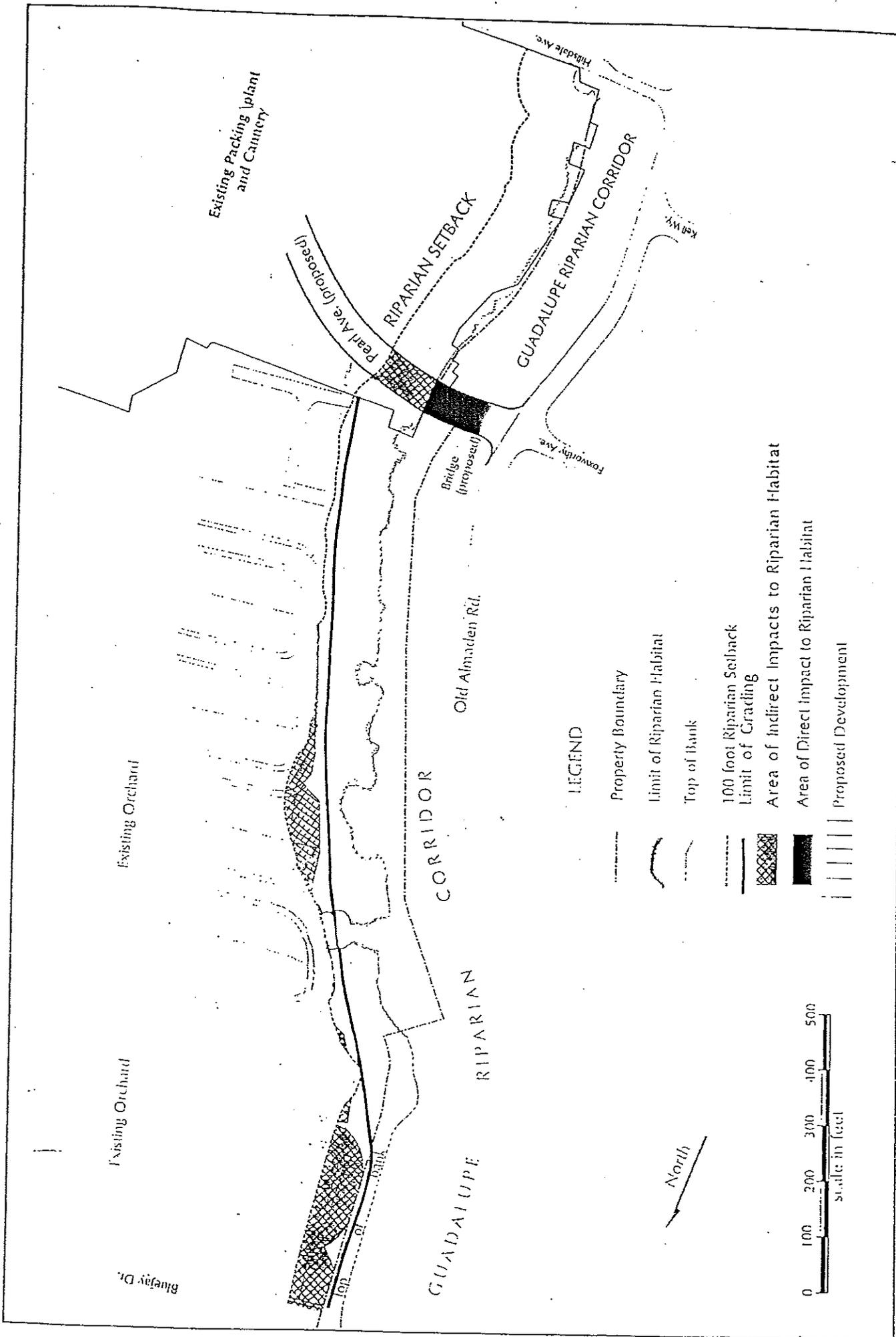


FIGURE 6

GUADALUPE RIVER RIPARIAN CORRIDOR

**ATTACHMENT 2
SITE PHOTOGRAPHS
(SPRING 2009)**

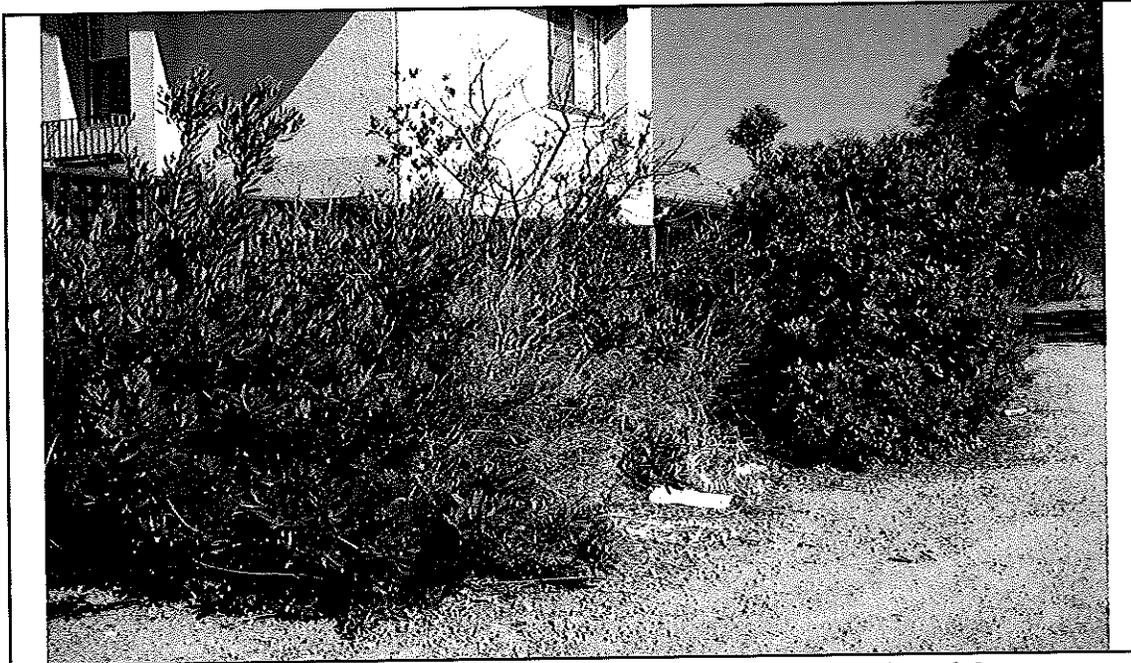


Photo 1. Southern view of Rubino Restoration site along the east side of the Guadalupe River. Toyon shrubs look full and healthy.

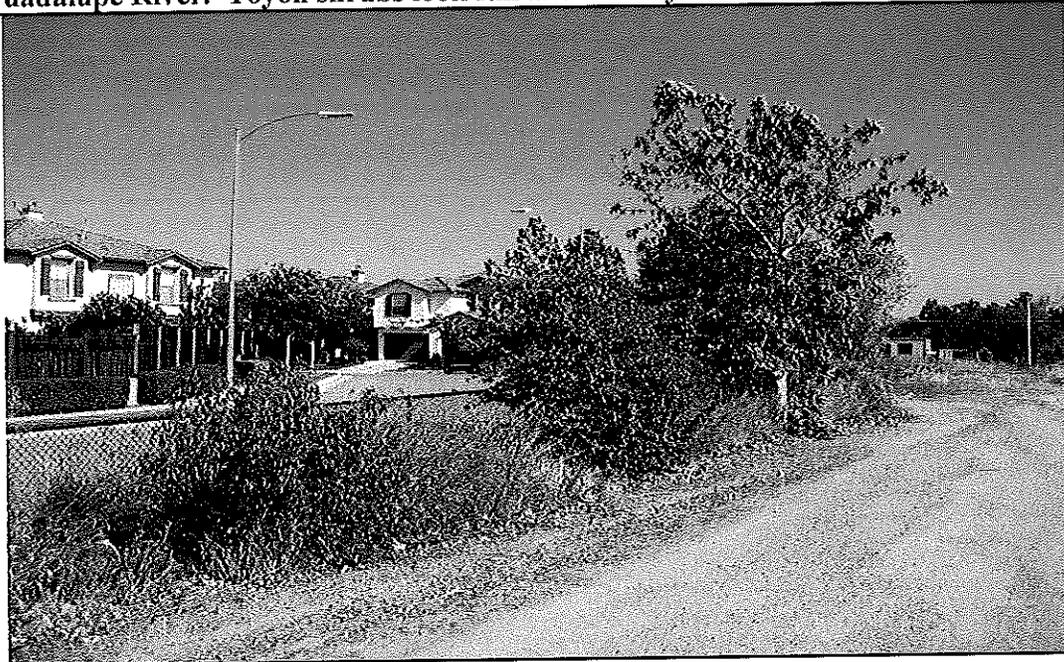


Photo 2. Southern view of Rubino Restoration site along the east side of the Guadalupe River west of Sunbonnet Loop.

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Rubino Restoration Area – May 2009**



Photo 3. Southern view of Rubino Restoration site along the east side of the Guadalupe River south from Sunbonnet Loop. Note the heavy weed growth in this area.



Photo 4. Southern view of Rubino Restoration site along east Guadalupe River. Restoration area between Sunbonnet and McBride Loop.

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Photo 5. Southern view of restoration site east of Guadalupe River and west of McBride Loop. The buckeyes are doing well in this area.



Photo 6. Southern view of Rubino Restoration site along the west side of Canoas Creek. Roughly 50 rose bushes occurred against the fence since 2001 and have been weed whacked.

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Photo 7. Northeastern view of the Rubino Restoration site along the west side of Canoas Creek north of Atkin Loop. Weed growth is heavy along Canoas Creek.



Photo 8. Northern view of restoration site west of Canoas Creek and east of Atkin Loop. Large coffeeberry shrubs observed in background. Note the heavy weed growth throughout this section of the restoration site.

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Photo 9. Northern view of restoration site along west side of Canoas Creek east from Dederick Court.



Photo 10. Northern view of restoration area along west side of Canoas Creek east from Romani Court. Restoration plants are difficult to see due to the heavy weed growth throughout the site.

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Photo 11. Rubino Restoration Area viewed north from Brevins Loop. The Pride of Madeira has grown to tall heights.



Photo 12. Large size coffeeberry specimen exhibits excellent growth habitat.

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Photo 13. Very tall toyon shrubs and buckeye trees exceed height of residential fencing.



Photo 14. Coffeeberry shrub with excellent new growth emerging from all buds.

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