Dimond Park Oaks Survey

Prepared by Karen Paulsell
For the Friends of Sausal Creek
November 2006

The Dimond Parks Oak Survey

The purpose of this study was to survey Dimond Park vegetation with particular attention to the coast live oaks. After the decline and destruction of the Dimond Oak, this survey was designed to prevent unforeseen circumstances from claiming other significant oaks in the park. A survey of existing trees was needed so assessments of their health could be made in a larger context. Additional information was gathered on aspects of Dimond Park's vegetation that affects the oak woodlands.

The location of all oaks greater than 4 inches in diameter at breast height (DBH) was recorded using a consumer-grade Global Positioning System (GPS). During this process, oaks were examined for visible problems such as ivy infestation, disease or damage.

The park was divided into zones, generally along major features such as sidewalks, driveways, or the creeks. Descriptions of the vegetation of each zone were compiled, along with recommendations for future management. A detailed report on each zone follows this introduction.

The zones provide a means to analyze and discuss the vegetation of the park. They provide the reader an ability to "walk through" the park either virtually or actually. In the future, they can provide a means of tracking work to improve the oak habitat.

Methods: A Geographic Information System (GIS) database was created, with streets, sidewalks and trails, buildings, paved areas, park boundaries, and other features of the park. An aerial photo (taken in approximately 2002) provides an easy to understand background for some of the maps.

When possible, GPS readings were taken at the trunk of the tree. Where slopes were extremely steep, or vegetation such as poison oak or Himalayan blackberry blocked access, locations were recorded as close as possible to the tree, with the field notes recording an estimated offset distance to the trunk. The offsets were used to adjust the position of the oaks in the GIS. All data was collected using UTM NAD83.

Under good conditions, the accuracy of consumer-grade GPS receivers is 10-30 feet. Anything that blocks satellite reception, such as working in a canyon or under foliage can increase the error. Work in Dimond Park involved both of those problems, and, given the scale of the park, some GPS points appeared, when loaded into the GIS to be in the wrong place -- in the middle of the driveway, or on the wrong side of a path. These locations were adjusted in the GIS to generate a map that shows the locations relative to landscape features.

Data from GPS surveys was uploaded into the GIS, and merged into a single file. This file is coded to indicate problems with the oaks, the number of main trunks or branches at breast height, and relative sizes.

Maps Created

The following maps are included with this report:

- Vegetation zones and coast live oak locations superimposed over the aerial photo and other park features
- Coast live oaks with ivy infestations
- Coast live oaks that are shaded or crowded by other trees
- Coast live oaks that are damaged or diseased.

PDF files of each of these maps are included on the CD that accompanies this report. A PDF file of the report is also included on the CD. All files needed to create the maps are provided; see the end of this report for more information.

Work Performed During the Grant Period

Survey work began in the middle of August 2006, and continued until early November. Since Creek to Bay Day occurred during the study period, Friends of Sausal Creek used early survey results to determine tasks for some volunteer crews. The zone reports include notes about this work and earlier work performed by the Friends of Sausal Creek.

Native Vegetation

The study identified native vegetation present in the understory to the extent possible. However, some native plants that could be present are dormant by late summer and fall.

Results

I was surprised at the number of coast live oaks in the park. There are 225 oaks over 4” in diameter, and uncounted smaller oaks. This count may be slightly low; major reasons are:

- In the steepest areas that were inaccessible, there may be other trees behind those that were visible from the closest access point.
- Some trees were so shrouded with ivy that it was not possible to determine whether it was multiple trees, or one tree with multiple trunks; these were recorded as one tree.
- Some large multi-trunked trees may have been separate trees whose trunks have grown together over time; these were recorded as one tree.

The problems that affect Dimond Park's oaks are:

- Ivy infestation, which robs the trees of nutrients, blocks light, and which can kill the trees, or topple them, especially those on steep slopes.
- Shading or crowding by other trees.
- Injury or disease, limited to a small number of trees.
- Choking by tree supports was a problem identified early in the study; these trees were freed from bondage on Creek to Bay Day, 2006.

Coast Live Oak Condition Summary

Condition	Count
Ivy infested	51
Injured/Diseased	11
Shaded/crowded	20
Trees choked by supports	8
Healthy/no ivy	149

Totals add to slightly more than the total number of oaks since some trees have multiple impacts.

The Oaks in Dimond Park

Features

- Coast Live Oaks
- OakZones
- Streets

Trails, Walks, Drives

- Driveway
- Sidewalk
- Multipurpose trail
- Social trail

Creeks and Culverts

- Engineered channel
- Culvert /Storm Drain
- Sausal Creek
- Dimond Park

0 50 100 200
Feet

N

Coast Live Oak Counts Per Zone

Zone	Oaks
A	18
B	10
C	16
D	5
E	36
F	0
G	49
H	21
I	20
J	17
K	17
L	16
M	0
Total	**225**

Map created by Karen Paulsell for the Friends of Sausal Creek
November 2006

Dimond Park Oaks and Ivy

About one-fourth of the coast live oaks in Dimond Park have some amount of ivy, from small tendrils just starting to ascend the trunks to vast curtains that obscure the tree trunks and drape from high limbs. Many other oaks have been cleared of ivy, but are at risk of re-infestation unless maintenance work continues.

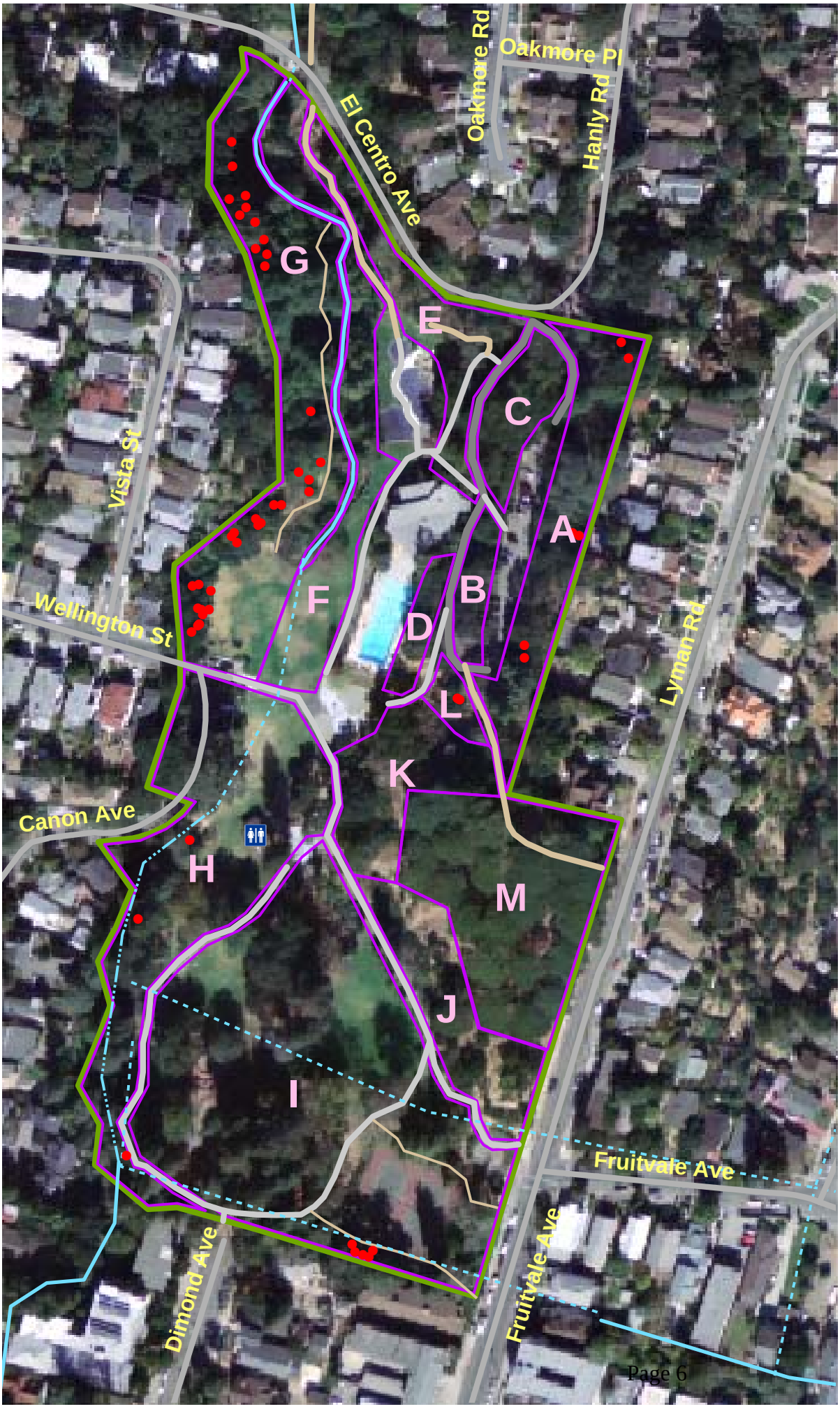
Most of the impact on trees in Dimond Park is due to a type of ivy known as Algerian ivy. Algerian ivy:

- Climbs trees, eventually killing them by robbing them of nutrients and sunlight
- Obliterates virtually all understory plants, greatly reducing biodiversity and habitat value to birds, insects, and native mammals
- Can break limbs or cause trees to topple from the added weight of the vines
- Greatly reduces the planting of oaks by jays and squirrels, and inhibits the growth of any acorns that do sprout, inhibiting future generations of oaks
- Can harbor rats
- Blooms in the fall, then sets fruit that is eaten by birds, who distribute seeds in their feces, or which can drop in place, producing a long-lasting seedbank the produces seedling ivy plants for many years. Photo at right shows ivy fruit staring to form.
- Resprouts from root fragments left in the soil, requiring repeated visits to eliminate

There is also a plant called Cape ivy that impacts a few oaks. Cape ivy is not a member of the ivy family, but its leaves look similar to ivy leaves. Cape ivy has all the impacts listed above, except for bird dispersal of seeds and harboring rats. In addition, fragments of Cape ivy stems can be extremely long-lived, and must be meticulously bagged and removed to avoid reinfestation. (There is debate on whether Cape ivy produces viable seed in the U.S.) Only a few of the oaks in Dimond Park are affected by Cape ivy, since it tends to take root only in moist areas. These trees are in Zone G, and are discussed in the report for that zone.

In Dimond Park, the coast live oaks in Zone G are most heavily impacted by Algerian ivy, which also infests bay laurel trees in that zone. Other areas with significant Algerian ivy impact are Zone A, where ivy infests several oaks and many other species of trees. Some of the pines in Zone A are badly infested, and pose a risk to neighboring homes or fences. In Zone H, only two oak trees are infested, one of them badly, and many other trees and shrubs are badly infested. The ivy infestation in the oaks in Zone I, south of the tennis courts, is minor.

Oaks Infested with Ivy



Features

- Oaks with Ivy
- OakZones
- Streets

Trails, Walks, Drives

- Driveway
- Sidewalk
- Multipurpose trail
- Social trail

Creeks and Culverts

- Engineered channel
- Culvert /Storm Drain
- Sausal Creek
- Dimond Park

0 50 100 200
Feet

N

Coast Live Oaks with Ivy, per Zone

Zone	Oaks with Ivy
A	6
G	35
H	3
I	5
L	2
Total	51

Map created by Karen Paulsell for the Friends of Sausal Creek November 2006

Shaded and Crowded Oaks

A number of oaks are being shaded and crowded by other trees. In some cases, the offending trees are non-natives, such as acacia, eucalyptus, or pines.

Recommendations:

- Remove non-native trees that are competing with oaks for sunlight.
- Have a city arborist or the park gardener determine which native trees need to be trimmed or removed if competing with oaks.

Shaded and Crowded Oaks

Features

- Shaded/Crowded Oaks
- OakZones
- Streets

Trails, Walks, Drives

- Driveway
- Sidewalk
- Multipurpose trail
- Social trail

Creeks and Culverts

- Engineered channel
- Culvert /Storm Drain
- Sausal Creek
- Dimond Park

0 50 100 200
Feet

N

Counts per Zone

Zone	Count
A	9
C	3
E	1
G	5
H	1
J	1
Total	20

Map created by Karen Paulsell for the Friends of Sausal Creek November 2006

Injured Oaks

The study found a small number of diseased or damaged oaks. The damage resulted from carving and from mechanical damage.

Other oaks in the park show signs of having recovered from similar injuries, and in most cases, the wounds shown below will probably also heal.

Recommendations: Trees shown on the map should be checked by an arborist. Staff using equipment such as mowers and brush-whackers should take care to avoid damage to trees.

Above: examples of carving on oak trees

Right: This large oak is near the Scout Hut; the branch above extends across the access drive. The damage on the lower side of the branch may have been caused by garbage trucks accessing the dumpster.

Above, left: The fresh wound on the left was probably caused by recent brush-whacking; the 4” long wound is at the height of the cut vegetation. Above right: older scars higher up on the tree

More damaged oaks, all in zones I and J.

Diseased Oaks

Only a few oaks seemed to be suffering from disease.

Left: This large oak in the Demo Garden has sparse foliage, and is losing large limbs. There is fungus in the wound from the large limb that still blocks the path in that area.

Below: There is a line of 4 oaks planted beside the Wellington entrance; two are clearly unhealthy, with sparse canopies.

The two trees shown below have cracks and streaks of red and black. One cause that was suggested was very rapid growth. Both trees are in watered areas, which would contribute to the problem. Canopies appear healthy. The tree on the left has a small area with cracks; the tree on the right has cracking all around the trunk for several feet. One arborist consulted by members of Friends of Sausal Creek felt that a major problem for Dimond Park oaks was the combination of watering and soil compaction.

Diseased or Damaged Oaks

Features

- Diseased or Damaged
- OakZones
- Streets

Trails, Walks, Drives

- Driveway
- Sidewalk
- Multipurpose trail
- Social trail

Creeks and Culverts

- Engineered channel
- Culvert /Storm Drain
- Sausal Creek
- Dimond Park

0 50 100 200 Feet

N

Counts Per Zone

Zone	Count
B	1
E	1
G	2
I	4
J	2
K	1
Total	11

Map created by Karen Paulsell for the Friends of Sausal Creek November 2006

Recommendations

Maintaining the health of the coast live oaks and other trees of Dimond Park should be part of a long-term, phased plan to curtail invasive plants and foster greater biodiversity in the understory. Maintenance to keep ivy out of trees and to control such invaders as broom, Himalayan blackberry and Cotoneaster exceeds the capacity of the Friends of Sausal Creek's volunteer-based efforts and the capacity of the understaffed Parks and Recreation gardening department.

A partnership between Friends of Sausal Creek, Oakland Parks and Recreation, and other groups such as East Bay Conservation Corps, service groups and youth organizations could develop a strategic plan and seek funding to implement it, in stages, over several years. The plan would include removal of major invasives and revegetation with local native plants. Such a project would serve as education and inspiration to owners of properties neighboring Dimond Park to improve the nearby oak woodland habitat. It would also make Dimond Park a better neighbor: nearby homeowners who maintain landscaped back yards now have to fight off the park's invasive plants.

Urgent Work Needed

At a minimum, hire East Bay Conservation Corps or other clearing crew to work on the three areas where ivy poses the most immediate threat to trees (A, G and H.) The crew should remove all ivy that is climbing trees, and create donuts around the base of trees to slow ivy re-infestation. They should not attempt to clear ivy from the ground until plans and funding are available to allow replanting of the cleared areas.

In one location in Zone G, Cape ivy has ascended from a tangle of Abutilon and Himalayan blackberry into 2 oaks. This vine grows rapidly, and can kill oaks by blocking sunlight. This location also requires professional help.

The next priority for contract crews is the removal of trees that are crowding or shading oak trees. This should include the removal of all acacias. These trees spread rapidly by seed or root runners, and grow more rapidly than oaks. The most affected area is Zone J. See the zone reports for more information.

Ivy Maintenance to Protect Trees

In areas with low ivy infestations and areas that have recently been cleared of ivy in the trees, regular maintenance visits are needed every two years to avoid re-infestation. Checking trees for ivy and renewing the donuts around the base of trees should be performed every two years.

Non-native Oaks

There are several oak trees in the park that are not coast live oaks, and a few oaks that are hybrids. Most of these are near the large parking lot above the Recreation Center (Zones A, B and C) or in Zone J, near Fruitvale. Several FoSC members looked at the plants or a sample of the foliage, and did not recognize the species.

Recommendations: In general, given the tendency of oaks to hybridize, any future oaks planted in the park should be coast live oaks from seed collected in the Sausal Creek watershed to preserve local genetic diversity.

The photo on the left shows the unidentified oak. The photo on the right shows leaves of an oak that is probably a hybrid between the unidentified oak and coast live oak.

Oaks: The Next Generation

In several locations, there are small oaks, ranging from seedlings only a few inches high to a dense thicket of 10-foot oaks, probably the work of jays and squirrels burying acorns. Virtually all of the small oaks are in areas without ivy and without dense stands of non-native shrubs, demonstrating the effects that invasive species can have on the regeneration of oak forests.

Recommendations: These seedlings and thickets should, in general, be left alone: the oaks themselves will sort it out, with some surviving to become large trees for future generations as others succumb to predation, injury, disease or shading. However, in cases where these thickets are close to park infrastructure such as stone walls, sidewalks and driveways, removing those that would damage walls or pavements is probably needed.

Work crews clearing ivy, broom, annual weeds and grasses, and other undesirable plants should avoid impacts on the small oaks.

Zone Summaries

Zone: A

Zone Description: Northeast corner of the park: from the parking lot, to the back of properties along Lyman Road.

Vegetation Overview: Coast live oak and other oaks, pines, thick ivy on the ground, and into oaks and other trees; many other invasives, few natives

Native Vegetation: Coast live oaks

Non-native Vegetation: Ivy into pines and oaks, some at blooming stage, Himalayan blackberry, giant privet, century plant, escaped garden rose, annual grass, broom, silver wattle acacia, Acanthus, at least 3 species of non-native pines, non-local oaks and hybrids. Some very huge cotoneaster bushes.

Recommendations: Hire EBCC (or other contractor) to remove ivy, broom and Himalayan blackberry and cut back cotoneaster.

There is one almost-dead pine that could fall onto a neighbor's new fence. There is also a dead standing tree leaning toward the parking lot, but too short to reach that far.

In the northeast corner, there is a very large Monterey pine with the largest ivy vine I've seen, about 7" in diameter. The ivy almost completely covers the trunk of the tree, has spread

through many of the upper branches, and reached the crown of the tree, and is still reaching skyward. This tree is very close to neighboring houses. It needs immediate work to reduce the risk of property damage from fallen limbs, or the entire tree succumbing to the weight of the ivy.

This pine (and the ivy in it), plus an acacia and other vegetation shade a few oaks in the northeast corner. Remove the acacia and privet. Removing the ivy from the pine will greatly reduce the shading.

If the thicket of oaks along the parking lot edge needs to be thinned, remove only the non-native oaks and hybrids, and only those coast live oaks that are too near the stone wall.

Note: There's a pile of dead vegetation and wood near the northeast corner where a neighbor has replaced a fence, and some trash and a bicycle at south end of the area.

Zone: B

Zone Description: South end of Parking Lot "island", south of stairs to Recreation Center

Vegetation Overview: At the extreme south end, there's a single oak plus annual grass and weeds. It's mostly too sunny for ivy. In the center, there are some oaks, and thicker ivy. At the north end of this zone, there are more oaks and other trees, and ivy is thick.

Native Vegetation: Coast live oaks, another species of oak, toyon, and honeysuckle. Some small seedling oaks.

Non-native Vegetation: Annual grass and small broom seedlings in the southern section. In the center section, thicker ivy and some Ehrharta grass. Closer to the stairs, blackwood and silver wattle acacia, cotoneaster, plum, an apple tree, some small broom, and ivy occur.

Recommendations: Remove ivy, and survey the area every two years for resprouts.

Remove any of the small seedling oaks that are too near the stone walls and driveway, and protect the others from damage while removing weeds and grasses.

Remove acacia trees that are competing with oaks.

Prune apple tree, which is sprawling into the parking lot.

Zone: C

Zone Description: North end of parking lot "island", between the stairs to the Recreation Center and El Centro.

Vegetation Overview: Very thick overstory of large coast live oaks at the northern end, with, sparse understory, very small ivy resprouts. Southern end has a mix of coast live oaks, some hybrid oaks, a large Monterey pine

Native Vegetation: In addition to the large oaks at the northern end, there are a few buckeyes, plus native blackberry, hedge nettle, native grasses and other natives planted by FoSC Education Program are surviving their first summer. With recent rains, native plant seedlings are starting to germinate.

Non-native Vegetation: There are a few plum trees and a small amount of ivy at the northern end, plus some non-native annual grasses and weeds. At the southern end: large Monterey pine, silver wattle acacia, some non-local oaks and hybrids, Ehrharta grass and annual grasses, a few broom seedlings.

Recommendations: Northern section: remove last traces of ivy when soil is damp, to get roots. Check every two years for resprouts. Continue to plant native understory plants to help retain the soil and natural "oak leaf mulch" that reduces soil erosion. To the extent consistent with esthetics, leave fallen wood to help hold the mulch on the slope.

Southern section: Limb up the large Monterey pine to provide more light to the seedling coast live oaks under the tree. The picture at right shows the small oaks in the shade of the pine.

Remove all broom and acacia and patrol regularly for resprouts and seedlings.

Note: The large oak near the entrance sign was cut last winter – it has resprouted. It was not included in the count for this area.

Zone: D

Zone Description: Between lower driveway and pool and Recreation Center

Vegetation Overview: A few oaks, some blackwood acacia and pine, ivy thick in places

Native Vegetation: Coast live oaks, one toyon, one small common rush

Non-native Vegetation: Ivy to blooming/fruiting stage in places, into pine; Ehrharta grass, cotoneaster, giant privet and broom in brighter areas, a patch of Himalayan blackberry the corner near the pool.

Recommendations: Remove ivy, broom, and Himalayan blackberry

Note: Vegetation notes do not include the plants on the patio/deck area of the Recreation Center, such as the Canary Island date palm.

Zone: E

Zone Description: Demo Garden, from El Centro to the Recreation Center

Vegetation Overview: Oaks and a wide variety of local and California native plants, with a mix of some invasives.

Native Vegetation: Coast live oaks, willow, Ceanothus, coffeeberry, snowberry, Berkeley sedge, iris, common rush, plus many other natives. FoSC began clearing this area of ivy in 1997 and planted the 15,000 square feet with native plants. Control of invasive plants and replanting with natives continues.

Non-native Vegetation: Some vinca near Recreation Center, Himalayan blackberry, Ehrharta grass, annual grasses, Kikuyu grass invading from lawn.

Recommendations: The large oak is very sick, with extremely scanty foliage. It has fungus in the wound from the large limb that lies across the path. This tree needs to be removed. Also, the limb blocking the path needs to be removed, or cut so that the path is open. Currently, it's a hazard.

Keep Himalayan blackberry in check, continue regular FoSC weeding, mulching and planting. Look for long-term solution to Kikuyu grass battle that takes too many volunteer hours.

Zone: F

Zone Description: From El Centro to the Wellington Street entrance, between creek and Tot Lot/Recreation Center.

Vegetation Overview: Overstory is mostly alder along the creek. At the northern end, the understory a mix of invasives and many natives Very little ivy, but some into trees.

Native Vegetation: Alders, willows, dogwoods, and buckeyes are the main trees and shrubs; in the northern section, there is a very diverse understory

Non-native Vegetation: Ehrharta grass Kikuyu grass in places; Himalayan blackberry, some plum, *Acanthus, Arum italicum*

Recommendations: Remove ivy from affected trees. Remove Himalayan blackberry.

Work Done: FoSC removed ivy from some of the trees in this area on Creek to Bay Day, 2006.

Zone: G

Zone Description: North of Wellington to El Centro, between the creek and west park boundary

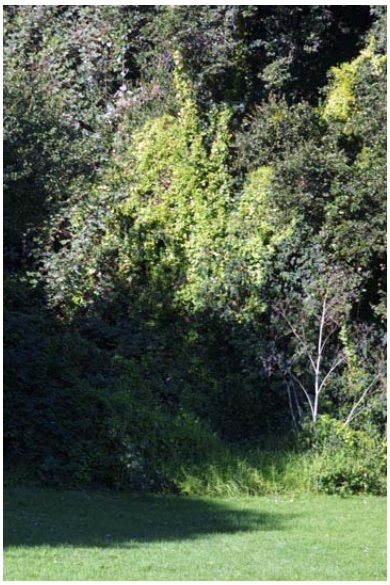
Vegetation Overview: Ivy very thick on coast live oaks and bay laurels on the steep slope. Ivy, Cape ivy, Kikuyu grass, and Himalayan blackberry in flat area below slope and down to creek.

Native Vegetation: Mainly coast live oaks and bays on the slope above, with willows, alders, and buckeyes near the creek. There is a small amount of horsetail and thimbleberry near the creek. There is poison oak, especially in the southern part of this zone, on the hill. One large thicket of native blackberry, plus more native blackberry and fairy bells scattered in the ivy were the only native understory plants visible at this time of year on the slope.

Non-native Vegetation: Algerian ivy (and a white-and-green leaved variant), Cape ivy, Abutilon, Himalayan blackberry, broom, giant privet, nasturtium, vinca, Acanthus, plum, and spiderwort on the steep hillside. Ivy, Cape ivy, Kikuyu grass, Ehrharta grass, and Himalayan blackberry near creek, a large elm and some plum trees.

Recommendations: The health and stability of the oaks and bays on this hillside are quite important to maintain the integrity of this steep slope and the safety of the houses above. Ivy is extremely thick on many trees, hanging in long streamers (see picture at right), and threatening the stability of the trees. Hire East Bay Conservation Corps (or other contractors) to do ivy removal. The slope is too steep, the vegetation too dense, and there's too much poison oak for this area to be maintained by volunteers.

Hire East Bay Conservation Corp (or other contractors) to remove non-native blackberry thickets.



North of Wellington, there is a small swale mostly vegetated by *Abutilon* and Himalayan blackberry. Cape ivy is growing through these invasives and into oaks; it's the bright yellow-green foliage in the picture to the right. Once Cape ivy reaches sunlight, it can quickly cover a tree canopy. The contractors should also remove the Cape ivy, and cut back the shrubs that provide a "ladder" into the oaks.

There is a large eucalyptus crowding and shading some large coast live oaks near the northern end of this zone; remove the large limbs to improve the prospects for these oaks.

The very large bays on this hill are also shading and crowding the live oaks. In one location, bay tree limbs are resting on two live oak trees. Remove impinging bay limbs. Have the City arborist assess whether the large bays are at risk of toppling, and where trunks should be cut back to provide more sunlight for the oaks.

There is a row of 4 small planted coast live oaks along the driveway into the park at the end of Wellington Street. The two oaks on the west end of the row are nearly dead, with sparse, browned canopies. They need to be examined by an arborist, and may need to be removed. See the photograph on page 11.

Notes: A few residents dump yard debris over the fence into the park. Also, there are a number of pipes connected to downspouts that are directed under fence lines into the park. Any erosion effects from this introduction of concentrated run-off are hidden under the ivy and Himalayan blackberry.

I was not able to accurately determine the property lines; in general, fence lines, where present, were considered as the park boundary.

Work Done: On Creek to Bay Day, 2006, Friends of Sausal Creek removed ivy from some of the oaks in this area and from some of the other trees along the creek.

Zone: H

Zone Description: Southwest corner of park, below the Wellington entrance, from the sidewalk to the park boundary.

Vegetation Overview: Coast live oaks and other trees in a watered and maintained lawn near the sidewalk, with remnants of riparian vegetation along the creek banks. Ivy growing heavily into many trees and shrubs along the creek.

Native Vegetation: Coast live oaks, willows, alders, and elderberries. Planted redwoods near the Dimond Avenue entrance.

Non-native Vegetation: Ivy thick on the ground in some areas, and very bad in trees and shrubs near the creek. Near the creek: silver wattle and blackwood acacias, one walnut tree, Himalayan blackberry, plum, spiderwort, Acanthus, vinca, poison hemlock, fennel, Ehrharta grass, and small amounts of broom. Thornless blackberry on west side of creek, near the parking area at Canon and Wellington. And there are some passion fruit vines there too, with fruit.

Recommendations: Hire EBCC (or other contracting crew) to remove ivy from the trees and shrubs along the creek and to remove the non-native blackberries. It is a large task, and the creek banks are too steep for safe volunteer work.

Every two years, check the oaks and redwoods near the Dimond Avenue entrance for ivy and remove as needed; check the trees and shrubs along the creek, and the small oaks near the culvert outlet near Wellington.

Remove acacias to prevent spread from seed and root sprouts.

Zone: I

Zone Description: Southeast corner of park, including the entry plaza, tennis court area and picnic areas.

Vegetation Overview: Coast live oaks and many other trees in a watered and maintained lawn. Some maintained garden beds with a mix of natives and other species. A small stand of redwoods near the tennis court.

Native Vegetation: Coast live oaks.

Non-native Vegetation: A variety of landscaping trees, including magnolia, elm, and plane trees. Many garden beds are invaded by Kikuyu or Ehrharta grass.

Recommendations: Every two years, check for ivy and remove as needed from the redwoods near the tennis courts, the oaks south of the tennis court, and the trees near the Dimond Avenue entrance.

Several oaks along the sidewalk that leads from the Fruitvale Avenue to the Scout Hut show signs of damage to the bark, both recent damage and healed-over scarring. One of these trees appears weak and stunted, and is leaning. Two trees in the area have cracked bark and signs of seeping. These trees should be inspected by an arborist.

In area where ivy and blackberry was cleared, remove stumps and ivy resprouts during winter when soil is soft.

Work Done: On Creek to Bay Day, a FoSC crew led by the intrepid Teresa Kennedy, the City of Oakland gardener for Dimond Park, accomplished several tasks in this area including ivy and blackberry removal.

Zone: J

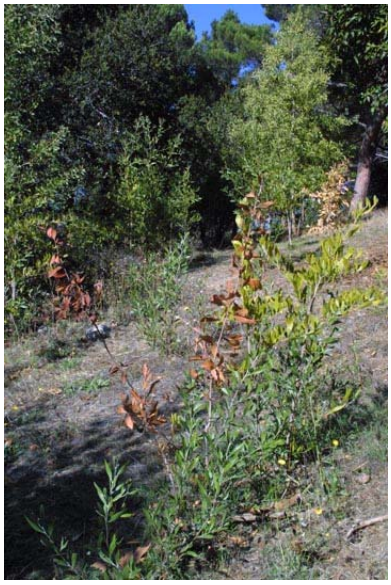
Zone Description: The planted beds along the right side of the sidewalk that leads from the entry plaza to the Scout Hut. Along Fruitvale, it includes all the area up to the edge of the big stand of stone pines.

Vegetation Overview: Lots of landscaping, including non-local manzanitas and ceanothus, some coast live oaks

Native Vegetation: Coast live oaks plus some coyote brush and toyon. Just behind the landscaped area is a small grassy area with purple needlegrass and blue-eyed grass.

Non-native Vegetation: Blackwood acacia trees, and a lot of acacia sprouts, Himalayan blackberry, giant privet, annual grass, Echium, broom, Monterey pine, many ornamental shrubs, including non-local Ceanothus and manzanita.

Recommendations: Remove acacia trees sprouts to avoid the area becoming a dense acacia stand, to avoid long term impacts on nearby coast live oaks. Many of the oaks already have acacia sprouts growing beneath them; these rapidly growing trees will soon shade and crowd the oaks. The photograph shows an acacia in the background, and some of the sprouts spreading from it.



Remove Himalayan blackberry and broom.

There are 2 coast live oaks near Fruitvale Avenue that have damage to the bark. These should be inspected by an arborist.

Enhance the area that has bunchgrasses, creating a native bunchgrass meadow with more blue-eyed grass and other wildflowers.

There is a small amount of ivy in the planted beds along the sidewalk; remove it while it's still a small amount.

Work Done: On Creek to Bay Day, a crew liberated several oaks in this area that were strangling in their tree supports

Zone: K

Zone Description: Hill behind Scout Hut, wrapping around below the stone pines in Zone M.

Vegetation Overview: Many oaks and buckeyes; the understory is mostly ivy and vinca.

Native Vegetation: Large and small coast live oaks, buckeyes, a few toyons, a few traces of native blackberry and woodmint (*Stachys*)

Non-native Vegetation: Ivy and vinca are knee-high; cotoneaster, plum, Himalayan blackberry, a few large broom and some seedlings (to south side), *Echium*

Recommendations: Check for ivy every two years and remove from trees as needed, renewing the "donuts" of ivy-free zones around the base of the trees that help avoid re-infestation.

A large stand of French broom was cut to stubs in September. Remove these stumps, using a Weed Wrench. Patrol the area for seedlings every two years.

This easily accessible and highly visible location is an excellent site for a project to remove ivy and replace it with native understory.

Work Done: FoSC removed ivy from the trees in this zone on Earth Day, 2006, and removed a large stand of broom on Creek to Bay Day 2006.

Zone: L

Zone Description: North-facing slope west of parking lot (separated by a social trail from Zone K)

Vegetation Overview: A few coast live oaks and buckeyes, including one dense thicket of small coast live oaks, and some ivy and weeds.

Native Vegetation: Coast live oaks

Non-native Vegetation: Large amount of cotoneaster, including some very large bushes, a few very large broom plants. Open areas have Ehrharta grass, annuals grasses and weeds. There is a small amount of ivy in shadier places.

Recommendations: Remove the ivy and broom. Check for resprouts every two years. Add native understory plants and grasses.

There is a dense thicket of small coast live oaks in the corner nearest the Recreation Center. Some of these trees are growing directly adjacent to the stone wall or to the driveway. These may need to be removed to prevent damage to the stone wall.

Prune back largest cotoneasters. They can be bad wildland invaders, but their fruit attracts many birds in winter.

Zone: M

Zone Description: Hilltop along Lyman Road, just south of the houses.

Vegetation Overview: A very dense canopy of stone pines covers most of the area.

Native Vegetation: None evident during the study; the area had been recently raked clean of pine needles, into a large pile.

Non-native Vegetation: Stone pines, big patch of broom near house. Blackwood acacia root sprouts (from tree in neighboring yard.) Ivy into one pine tree. All the areas beneath the stone pines had been raked or scraped, so it was difficult to determine what vegetation might have occurred in this area. There are traces of annual grasses and weeds.

Recommendations: Broom near Lyman is probably fairly isolated from infesting other areas due to dense shade of stone pines, but removing it would insure that seeds do not spread in the mulch.

Clear ivy from pine tree and remove acacia sprouts.

Recheck for broom seedlings, acacia sprouts, and ivy re-infestation every two years.

References and Data Sources

References

Information on control of non-native plants was derived from the following sources, which are excellent references for anyone working in Dimond Park:

> *Invasive Plants of the California Wildlands*, by Carla C. Bossard, John M. Randall and Marc C. Hoshovsky, University of California Press, 2000. The text of the book is accessible online, searchable by plant name. See: http://www.cal-ipc.org/ip/management/ipcw/index.php
>
> The *Vegetation Management Almanac for the East Bay Hills*, published by the Hills Emergency Forum contains excellent color pictures of many of the invasive, non-native plants found in Dimond Park, as well as recommendations for control
>
> The Nature Conservancy's website on managing invasive plants is: http://tncweeds.ucdavis.edu/esadocs.html

The California Invasive Plant Council's website and newsletters. See: http://www.cal-ipc.org/

The Ivy Removal Project in Forest Park, Portland, Oregon (also known as the No Ivy League) provides thorough and often humorous advice on ivy removal, and is a great inspiration. See: http://www.noivyleague.com

GIS Information

On the CD included with this report are all the files needed to produce the maps of Dimond Park using ArcMap. Copy the DimondOaks/AGIS directory onto the C drive. The directory contains 4 project files for the four maps in this report (oaks, ivy, shaded, and inspect) and the data required.

Data Sources for Maps

The following layers are originally from the City of Oakland, but I have modified an expanded some of them:

- Streets
- Trails (includes sidewalks, driveways): original source was the City of Oakland trails layer; I have modified it to add the trails and sidewalks in Dimond Park, using both GPS and digitizing from air photos.
- Parks (modified to match the recent city parcel data layer)

Other data sources are:

- The aerial photograph is from Terraserver.
- Creeks, Culverts and Engineered Channels: originally from the Oakland/Berkeley Creek Map, published by the Oakland Museum, created by Janet Sowers. Modified from GPS of creek channels, and to agree with recent City of Oakland storm drains layer.
- Features: created from a combination of GPS and digitizing from air photos.
- Zones: created as needed, using major landscape features
- Dimond Park Oaks: created using GPS data