

HF Nature Areas Restoration Report

written by the Heather Farm Habitat Task Force

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Heather Farm Park Nature Area Report Summary Benefits for People, Benefits for the Park

Heather Farm Park is unique among Walnut Creek's parks in providing a balance of active recreation facilities and open areas for passive recreation. It has a balance of developed areas, green lawns, ponds and lakes and open nature areas. The natural lake and three nature areas near the lake are widely used by walkers, joggers, bird watchers and children's natural history classes. The Nature Areas Report identifies practical things that can be done to improve the lake and nature areas near it. The project will provide many benefits to park visitors:

- More places to walk using additional paths. These pedestrian friendly, soft surfaced paths will provide new recreational access to more of the park.
- More and different views. Planting trees and shrubs to vary and channel views will make paths more interesting for walkers.
- More plants, birds, and butterflies to see in nature areas. Trees, shrubs, flowers and grasses will be chosen to provide visual interest and to provide food and shelter for insects, birds and other animals.
- More to see on the natural lake. Measures will be taken to improve water quality to better support a varied bird, turtle and fish population on the lake. In addition, logs and other perching places will be added in the lake. Two observation platforms will be constructed on the edge of the lake to enhance viewing of wildlife.
- More kinds of habitats. Plantings in different areas will show park visitors several natural habitats that can be found near Walnut Creek including grassland, riparian, rocky hilltop and chaparral habitats. These habitats will add variety to visitor's experience and provide a richer basis for natural history classes in the park.
- More information on plants and animals. Several kiosks and interpretive signs will educate visitors about interesting plants and animals they may see along paths.
- More support for natural history education. More varied plant and animal life will make the park a better site for natural history education. Curriculum information will make it easier for teachers to plan classes in the park. Docent tours can provide similar natural history education for adults and children outside a school framework.
- Restoration will enhance existing nature areas and arrest an observed decline in bird populations on and around the lake. Restoration will not increase the

excessive populations of Canada geese, which feed on lawn areas and ballfields in the park. It will not require a significant increase in park maintenance.

- All of this will be accomplished without taking away from or replacing any existing park facilities or activities. Restoration work will complement and enhance everyone's use of Heather Farm Park. Areas targeted for restoration are not suitable for other uses or other kinds of development.
- Volunteers, both groups and individuals, can do much of the work. Several organizations including the Walnut Creek Open Space Foundation, the Lindsay Wildlife Museum, the Mt. Diablo Chapter of the Audubon Society, The Gardens at Heather Farm and a local chapter of the Rotary Club have already expressed strong interest in participating in restoration work as have many individuals. Restoration in the park will attract much wider interest once the project has been approved.

Restoration of the Heather Farm Park natural area will benefit people, the lake area, and the entire park.

I. Introduction

During the development of a new Master Plan for Heather Farm Park by the Walnut Creek Park, Recreation and Open Space (PROS) Commission, residents voiced strong support for retaining and restoring several existing nature areas in the park. The entire PROS Commission supported that idea and voted to establish a task force to develop ideas for a restoration project that would make use of that strong community support through volunteer participation in the restoration work. This task force included three members of the Commission, Walnut Creek city staff representatives and representatives of several non-profit organizations that believed the restoration to be important. The membership of the task force is described in Attachment A.

This report may be read at three levels of detail. The summary provides a brief description of the proposed project and its benefits. Sections I-VI. give further detail on the goals of the project and how it can be implemented with a minimum of city funding and a maximum of community involvement. Section VII documents the task force's detailed recommendations and the attachments provide supporting information.

II. Description of nature areas to be restored

The map in Attachment B shows the nature areas to be restored.

In addition to the concrete bottomed pond near the community center building, the park contains a more natural lake that is home to a variety of animals including fish, turtles and a number of birds. (Area 4) Water sources for this lake include a creek running behind the new ballfield and entering the lake near the community center (C1 on the map), outflow from the concrete bottomed pond and a small creek that carries water from the neighborhood above the Equestrian Center (C2 on the map). There are trees and bushes along much of the edge of the lake - willows, coyote bush and a few cottonwood and oak trees providing cover, perches and roosting places for birds. Several large beds of tall reeds provide shelter for birds and turtles.

Area 1 on the map is between San Carlos Drive and the lake. A paved path runs through the edge of this area close to the street. In addition, a number of people use an existing unmaintained dirt path that runs close to the edge of the lake. Parts of this area have a heavy population of weeds including milk thistle and black mustard. There are several raywood ash trees in very poor condition in this area and parts of the area have an accumulation of wood chips dumped over many years.

Area 2 on the map is between the lake and the Equestrian Center. A paved single lane road runs close to the edge of the lake with an irrigation canal on the other side of the road. This road is heavily used by people walking in the park for exercise or for recreation. The other bank of the canal has a number of valley oaks of various sizes. The area near the canal also has valuable plants including milkweed and a large population of blue-eyed grass. The back end of this area near the street has clumps of coyote bush and a few oak trees that provide useful shelter for birds and other animals. At the other end of the area, the irregular water from the small creek C2 supports plants such as willows and cottonwood that need a wetter environment. This wetter area provides an interesting visual contrast to the rest of the area. Other than the paved road at the edge of the area, there is no path through this area.

Area 3 on the map runs uphill from the Equestrian Center to the edge of the park and from the Equestrian Center forward to the single lane paved road comes down the hill near the end of the parking lot of the Gardens at Heather Farm. The small Creek C2 runs through this area. This area provides a buffer between active uses in the park and the houses uphill from the Equestrian Center. The area also serves as a wildlife corridor connecting the nature areas in the park with the open space of Seven Hills Ranch. This area has some native grass (creeping wild rye) mixed with non-native annual grass. Most of this area has few or no weeds.

None of these nature areas has been restored to increase its value as a place to observe native plants and animals. The bird report in Attachment C lists birds that have been observed in the park and discusses a decline in bird population in recent years. It is

important to restore these nature areas to preserve and enhance the natural qualities that residents have enjoyed for decades.

III. Goals for the restoration

The nature areas described above already serve a useful and appreciated purpose in the park. Many people are no longer able to walk in Walnut Creek's Open Space. For parents pushing a stroller with one or two young children, walking through the nature areas is a regular form of recreation where walking in the open space is harder to manage. For classes, a visit to the park with its parking, restrooms and compact size is easier to arrange than a visit to the open space. For other residents, the park is a same, familiar introduction to their natural environment. It is a gateway to other outdoor destinations including our open space.

What is needed is a restoration effort to increase their value to park visitors. The restoration will increase diversity of plant and animal life to make the areas more interesting. It will also increase public access so that the public can take more advantage of these areas. Improving the value of the park as a setting for natural history education is an additional part of the restoration project. The task force believes restoration can make the nature areas more valuable to people and a better home for plants and animals. The restoration can be practical and cost effective.

Making the nature areas more interesting

The natural lake is a magnet attracting a large variety of birds. It is also home to fish, turtles, frogs and insects. This animal life also makes the lake a magnet for people walking in the park. A study conducted by expert consultants is needed to evaluate water quality, identify specific problems and to suggest cost effective incremental remedies to improve water quality. This should produce increased diversity in animal population on the lake.

Planting a variety of native grasses, flowers, shrubs and trees make the land areas more inviting and interesting to park visitors. These plants will also provide shelter, food and roosting and nesting places for birds, butterflies and other animals. Plants will be grouped to produce several kinds of habitat including grassland, rocky, dry hillside and wet riparian habitats to increase variety in the park.

Kiosks and interpretative signs will be constructed to provide a place to display interpretative material to help park visitors get more out of what they see.

Improving access to the nature areas

Additional all-weather paths will be constructed in all three areas. These paths will have an all-weather soft surface that is easy on walker's feet and joints. Benches will be provided at intervals along the paths so that walkers can stop to enjoy a view or just rest. Trees will be planted to provide shade will make paths more inviting during hot weather.

Routing paths carefully and planting trees and shrubs along paths and in the walker's sight lines will provide many different views along their paths

A bridge will be constructed across to small canal in area 2 to connect the paved road to the path through area 2.

Two observation platforms will be constructed on the edge of the lake to make it easier to observe animal life on the lake.

Providing better support for natural history education

Many of the changes described above will make the park a better place for natural history education. Improving plant and animal diversity in the park makes it a richer subject for classes. Both the Gardens at Heather Farm and the Lindsay Wildlife Museum will be able to offer more classes with richer content in the park. The organizations represented on the task force will lead in creating interpretative material for display on kiosks and interpretative signs. The Lindsay Museum will create a notebook of curriculum material for use in classes. This notebook will be available to teachers to be used in planning natural history lessons at the park.

The Mt. Diablo Audubon Society can teach classes in bird watching in the park.

Making the project practical

The restoration should use mostly plants native to this area for several reasons:

- They look appropriate to a natural California outdoor landscape.
- They provide food shelter and roosting and nesting places for local animals.
- They do not require regular irrigation once they are established.
- They have low requirements for mowing and other maintenance.
- They do not contribute to overpopulation of problem species such as Canada geese, pigeons or sea gulls.

Funding a study lake water quality is cost effective since it will identify problems when they can be remedied with economical, incremental measures rather than waiting until very costly lake renovation is required.

Sycamore Associates, a consulting firm with experience providing studies for similar projects provided the city with estimates of approximately \$75-95,000 for a study of water quality and planning for the entire restoration. They also estimated a range of approximately \$ 170,000 to \$ 335,000 for implementation paying for all material and labor costs. The implementation cost can be reduced to \$ 40,000 to \$ 90,000 using

volunteer labor and other sources of funding. The cost of the study phase may also be reduced using volunteer resources including work already done by the task force.

IV. Volunteer Participation

Some parts of the restoration work may be done by city staff or may be contracted out to specialized firms. However, most of the restoration work can be done by volunteers with a minimal amount of coordination by city staff. Several task force members have extensive experience working or leading restoration projects and can teach other volunteers. Some have broad gardening experience. Other task force members have expertise in teaching natural history and gardening classes and in creating teaching materials.

The two local Rotary Club chapters and other service clubs have a good track record designing and building pedestrian bridges, an amphitheater at Sugarloaf Open Space and other construction projects. Open Space staff has successfully used Eagle Scouts to construct signs and to erect kiosks.

Several organizations have already shown their interest by joining the task force. These groups can form a nucleus for organizing volunteer activities and for attracting additional organizations and individual volunteers. Several individuals who learned about the task force have joined the group and contributed to its work.

Task force members have already contributed by developing a vision for the restoration of the nature areas, in surveying plants present in the nature areas and in suppressing weeds such as yellow star thistle in the park. When task force members work in the park, park visitors often ask about their activities and express strong support. The task force has not attempted to recruit additional members for this stage of the process. It is clear that with some publicity in the City of Walnut Creek's Nutshell newsletter and in local newspapers and other media, wide community participation can be achieved.

V. Funding Possibilities

The restoration project is an excellent candidate for grant funding. It already has community involvement of several non-profit groups with the prospect of much wider participation. Heavy use of volunteer labor makes the project appear attractive and cost effective since grant money would go for materials rather than labor. The project also supports and enhances natural history education.

The task force has already secured a grant from the Contra Costa Fish and Wildlife Committee. Once the timing of full-scale implementation is clear, the task force can apply for additional grant funding. The Walnut Creek Open Space Foundation has already agreed to serve as a grant applicant and recipient of grant funds.

The project may be able to get donations of materials and perhaps of specialized labor. The task force may also be able to get contributions from local businesses. Businesses with a specific interest in outdoor activities such as Wild Birds Unlimited, Wild Bird Center of Walnut Creek, Any Mountain and REI are especially good prospects for participation.

VI. Accomplishing the Restoration

Some work has already been done to survey the plant and animal resources in the nature areas. Mowing to suppress weeds such as thistles began in 2002 with volunteer labor and continues on a larger scale in 2003 along with hand pulling. Very small scale planting was done in the winter of 2002-2003.

A demonstration project in the winter of 2003-2004 should test planting methods, train volunteers and build at least one kiosk. Interpretative material created by the task force will be displayed on the kiosk along with material to explain the restoration project and interest additional volunteers.

Consultants will be hired to conduct a study of the lake and to provide detailed plans for planting and path layout in the land areas. This work should produce an implementation plan and cost estimates. City funds will probably be needed for this step.

Full implementation will be carried out over at least two winters. Planting most plants during the winter rainy period provides the best chance for plant survival and delays the need for watering until the following May or June.

Plants have to be acquired in the year leading up to winter planting. Since most native plants to be used are not available off the shelf, a commitment to buy or grow them must be made 6-9 months before planting.

Construction of kiosks, benches, observation platforms and bridges will also require planning and some lead time. Most of the construction can be scheduled independently from the planting activity. Individual construction projects can be assigned to specific service groups that will take responsibility and can achieve a sense of accomplishment and ownership from that project.

VII. Detailed Restoration Recommendations

The nature areas in the park are not pristine wilderness nor are they gardens to be planted and maintained intensively. They should be representative of a natural outdoor setting for this part of California. Areas 1-3 are not currently irrigated regularly and maintenance such as mowing is light; restoration should not create a long term requirement for additional irrigation or maintenance.

Some dead trees should be left in place to provide perches and food sources for birds and insects. They should be chosen for usefulness to animals and the suitability of leaving a dead tree in the location. City staff agrees that this can be done in a way that provides habitat value without making the park less attractive.

Choice of Plants

Planting should use primarily plants native to the area that can survive and thrive without extensive maintenance or regular irrigation. Plants should be chosen for visual interest and for their value in providing food, shelter and roosting and nesting places.

Plants chosen for nature areas will not encourage any additional Canada geese to reside in the park.

Planting Methods

For volunteer projects, planting during the late fall and early winter is an effective approach. Seasonal rains provide moisture in the ground that minimizes the need to water new plants until mid to late spring.

Planting will be done inside rectangles covered by weed block plastic to suppress growth of weeds and annual grasses. This is particularly important for grasses, flowers and small shrubs. Within a small area, planting would be done in a checkerboard fashion with some rectangles planted and some left unplanted. In the following year, the previously unplanted rectangles might be planted. It may be necessary to scrape a rectangle to remove any existing grasses and weeds before placing the weedblock plastic on the ground.

The goal of the restoration is to improve the visual appeal of the nature areas and to improve their ability to support birds, insects and other animals. Weeds and non-native grasses will be removed to improve the success of plantings. However, no attempt will be made to remove all weeds and non-native grass.

Irrigation

Temporary irrigation connections can be used for periodic watering through the first two years of the plant's life. Irrigation system connections may already be available in some or all of the nature areas. This temporary irrigation should be in place before the first full-

scale planting. Hand watering of test or demonstration plantings is possible but the presence of an irrigation system would be convenient to reduce volunteer effort.

Source of Plants

Some plants can be grown from seed or cuttings collected locally using volunteer efforts. Other plants will be ordered from commercial or other nurseries. Some lead time is required in either case to grow the required plants.

Shelter Areas - Thickets and Brush Piles

Birds and lizards need places of refuge where vegetation is thick enough for them to hide from predators. Trees whose branches are low to the ground provide useful shelter in area 1. Clusters of coyote bush at the edge of the lake and in area 2 near the road also provide shelter. Restoration can improve these existing shelter areas. In addition, synthetic brush piles can be constructed using timbers and tree branches.

These shelter areas can provide visual variety and help channel views. Since they become hot spots of bird activity, they will be centers of interest. Such shelter is especially important for quail - an easily observed bird with interesting behavior and distinctive calls.

Paths

The park already has hard surfaced paths that are used by joggers and bicyclists as well as walkers. Area residents have asked for soft surfaced paths that are easy on walkers' feet and joints. These additional paths will be designed primarily for people walked through the nature areas rather than for fast traffic of joggers and bicyclists. A durable, all-weather material such as decomposed granite should be used for new paths in Areas 1-3. A new path in Area 1 should replace the existing dirt path. A new path should run through Area 2 from the road at the back to the single lane paved road at the other end of Area 2. A branch of this path should go to a new bridge over the irrigation canal somewhere near the large oak tree on the edge of the lake. This path should be located so that it does not destroy a large patch of blue-eyed grass near the canal.

A new path should be constructed in Area 3, located far enough away from the houses above the park so that their privacy is not strongly affected.

Paths should be placed so that each path provides its own different views. The new path in Area 2 should be located some distance away from the canal so that it does not duplicate the views on the paved road at the edge of the lake in Area 2. It may curve near the canal in one or two places to provide variety. Trees and large shrubs should be located to limit and channel views so that each trail gives different views along its length. Trees should be placed so that paths are shaded at intervals. This will encourage use of trails on days when park visitors would be too hot if they walked continuously in the sun.

Preventing vehicle access

Area 2 has been used for overflow parking of horse trailers for events at the Equestrian Center. This practice should be stopped. In addition, private individuals have entered area 2 in four-wheel drive vehicles and driven through the area causing damage to plants. A barrier should be added at the edge of area 2 next to the Equestrian Center parking lot and the gravel road along the edge of area 2.

Benches and Tables

Benches should be placed at intervals along paths so that park visitors can rest and enjoy views when you want to stop. Some benches should be shaded to make them attractive in hot weather.

Tables should be placed at a few places to accommodate larger groups of people such as a natural history class.

Observation Platforms

The lake is a focus of interest for park visitors. The restoration includes construction of 2 new observation platforms at the edge of the lake. These platforms should extend a short distance into the lake (perhaps 5-10 feet.). Platforms could be supported by piers sunk into the lake bottom or could float. The lake is less than 18" deep where piers would be required. A floating design might be easier for volunteers to build but a design supported by piers might be more durable.

Bridge over the Irrigation Canal

The Heather Farm Master Plan shows a bridge across the irrigation canal near the large oak tree at the edge of the lake in Area 2. There are old bridge foundations near this area which might be used for a new bridge.

A new bridge may have to be approved by the Contra Costa Water District which operates the canal and by the Bureau of Reclamation. This process may take as much as 2 years. Using the old bridge foundations might shorten this process. However, if the site of a previous bridge across the canal is used, the approval process may be shortened.

Kiosks and Interpretative Signs

Park visitors will see more and enjoy the nature areas more if they know what to look for and where to look. Kiosks should be placed at several entry points to nature areas with information to guide visitors. Additional interpretative signs may be appropriate.

The kiosks also provide a place to display information reminding people not to feed birds in the park.

City staff will supply some material for the kiosks and several other groups such as the Lindsay Museum, The Gardens at Heather Farm, and The Audubon Society and the Walnut Creek Open Space Foundation will supply additional material. Some attempt should be made to determine the space needs of all these groups before specifying the size and layout of the kiosks.

Teaching Material and Additional Classes

At least one kiosk should be built at the beginning of the restoration to provide a place for material explaining the project and recruiting volunteers. Once the restoration project is partially completed, the kiosks can be used to display interpretative material.

Task force members can provide a syllabus for teaching natural history courses in the park and material for display in kiosks.

Restoring the nature areas makes them more valuable for teaching people about plants and animals. The park could be used for related classes in bird watching and bird photography.

Attachment A. Task Force Members and Organizations

William Hunt - task force chair. member, W.C. Park, Recreation and Open Space Commission. Past board member, W. C. Open Space Foundation. Participated extensively in oak habitat, quail habitat, willow and native grass restoration projects with the W.C. Open Space Foundation and oak habitat creation with the Nature Conservancy.

Ralph Kraetsch - W. C. Open Space Foundation. Organized Oak Habitat restoration project that has established over 500 oaks in Walnut Creek's open space since 1991. Organized suppression of exotic weeds in W.C. Open Space. Also active in native grass planting in open space. The Foundation has approximately 300 members. Its mission is to work to improve Walnut Creek's open space and to promote its use by area residents. A number of Foundation volunteers have worked in its oak habitat, quail habitat, and native grass restoration projects and in weed control projects.

Bob Wisecarver - Audubon Society and W. C. Open Space Foundation. Performs bat habitat restoration and related education. Organized quail habitat and willow restoration projects in Walnut Creek Open Space.

Hugh and Rosita Harvey - Audubon Society. Hugh and Rosita are active in bird counts and other chapter activities and visit the park on an almost daily basis.

Connie Loosli - Lindsay Wildlife Museum. Past board member, W. C. Open Space Foundation. The Lindsay Wildlife Museum is a wildlife rehabilitation hospital and museum with approximately 5500 members. Its mission is to connect people to the natural world through education. The Museum conducts classes in environmental awareness for children from preschool age up. Classes are open to children from Walnut Creek and the surrounding area. The Museum needs trails that get people off concrete sidewalks and closer to places where animal life and signs of life such as tracks can be observed. Restoration would allow the Museum to offer more classes.

Elizabeth Fox - Executive Director of The Gardens at Heather Farm. The Gardens organization teaches environmental classes at the park and maintains extensive gardens in the park including native plant and butterfly gardens. The gardens has offered the use of their facilities for starting plants.

Patrice Spenser - member of staff, Gardens at Heather Farm. Active in gardening with natives and native plant restoration projects.

Barry Slavin - member, W.C. Park, Recreation and Open Space Commission. Organized and participated in Rotary Club projects including construction of amphitheater in Sugarloaf Open Space. Coordinated joint construction of the Tice Valley Gym representing the Jewish Community Center in a project with the City of Walnut Creek. Local Rotary clubs have demonstrated their abilities to design and build projects for parks and open space. Recent examples include the amphitheater at Sugarloaf Open Space and the bridge over a creek at the Wiget Lane entrance to Shell Ridge Open Space.

Tracy Murray - member, W.C. Park, Recreation and Open Space Commission. Executive Director, The Volunteer Center of Contra Costa. The Volunteer Center can aid in recruiting and coordinating volunteers for restoration projects.

Kern Hildebrand - manager, Leisure Services for the City of Walnut Creek. Provides staff support for W.C. Park, Recreation and Open Space Commission. Prepared proposed master plan for Heather Farm Park.

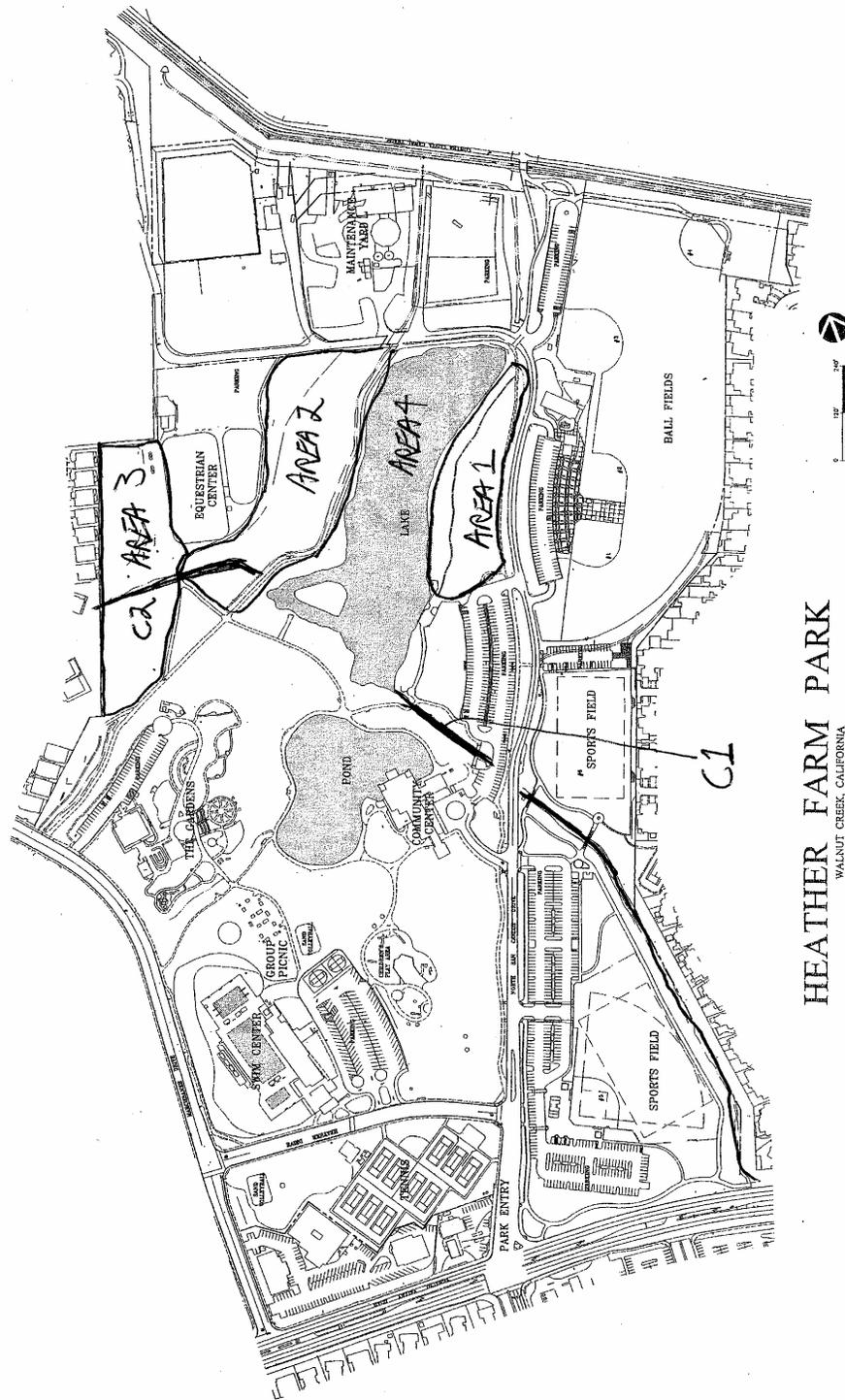
Dan Cather - manager, Open Space and Park Maintenance for the City of Walnut Creek.

Additional volunteer task force members:

Joe Watson - Lindsay Wildlife Museum. Active in Nature Conservancy habitat restoration projects.

Russ Jones - master gardener. Past board member, W. C. Open Space Foundation. Russ has enlisted the resources of the Master Gardener program to provide plant lists, resource lists and to analyze soil conditions in the park.

Attachment B. Map of Heather Farm Nature areas



HEATHER FARM PARK
WALNUT CREEK, CALIFORNIA

Attachment C. - Bird Report for Heather Farm Park

Heather Farm Park is an urban park in a suburban and increasingly urban area, attracting hundreds of people daily. Because of its location and natural features, Heather Farm has also been used by over 130 species of birds.

The birds which visit and live in Heather Farm depend primarily on oak savannah, riparian areas, and ponds. Some of these birds are residents, and some use the park only during migration. Maintenance and restoration of the natural habitat is a primary concern for the continued presence of the birds. They use this habitat to find food, water, and shelter.

A current checklist for birds observed in Heather Farm Park indicates that 132 species either reside in or have visited the park. Data collected for the Contra Costa Breeding Bird Atlas, along with prior observations, confirms that at least 21 species use Heather Farm for breeding purposes. An additional 8 species have been confirmed breeding in the immediate surroundings, and these, along with another 5 may use or may have used the park.

The checklist below is compiled from data collected over 32 years. Many of the birds using Heather Farm visit the area on a seasonal basis, while others are resident year-round. Still others seem to use Heather Farm as a stop-over during migration, staying for as little as one day to one week.

(x—breeds in Heather Farm)

Common Loon	Sora
Homed Grebe	American Coot—x
Western Grebe	Greater Yellowlegs
Brown Pelican	American Avocet
American Bittern	Least Sandpiper
Great Egret	Common Snipe
Green Heron—x	Ring-billed Gull
Turkey Vulture	Herring Gull
Ross's Goose	Caspian Tern
Wood Duck	Rock Dove
American Wigeon	Mourning Dove
Cinnamon Teal	White-throated Swift
Northern Pintail	Belted Kingfisher
Canvasback	Red-breasted Sapsucker
Ring-necked Duck	Downy Woodpecker
Bufflehead	Pacific-slope Flycatcher
Hooded Merganser	Ash-throated Flycatcher
Ruddy Duck—x	Loggerhead Shrike
Northern Harrier	Western Scrub-Jay—x
Red-shouldered Hawk	Common Raven
Golden Eagle	Pied-billed Grebe—x
Ring-necked Pheasant	Eared Grebe

Clark's Grebe	White-breasted Nuthatch
Double-crested Cormorant	Marsh Wren
Great Blue Heron	Western Bluebird
Snowy Egret	American Robin
Black-crowned Night-Heron—x	Northern Mockingbird--x
Greater White-fronted Goose	European Starling—x
Canada Goose—x	Orange-crowned Warbler
Gadwall	Yellow-rumped Warbler
Mallard—x	Common Yellowthroat
Northern Shoveler	Western Tanager
Green-winged Teal	California Towhee
Redhead	Fox Sparrow
Lesser Scaup	Lincoln's Sparrow
Common Goldeneye	Golden-crowned Sparrow
Common Merganser	Black-headed Grosbeak
White-tailed Kite	Tricolored Blackbird
Cooper's Hawk	Brewer's Blackbird
Red-tailed Hawk	Brown-headed Cowbird
American Kestrel	House Finch
California Quail	Lesser Goldfinch
Common Moorhen	Northern Rough-winged Swallow
Killdeer—x	Barn Swallow—x
Black-necked Stilt	Oak Titmouse—x
Spotted Sandpiper	Red-breasted Nuthatch
Long-billed Dowitcher	Bewick's Wren
Mew Gull	Ruby-crowned Kinglet
California Gull	Hermit Thrush
Glaucous-winged Gull	Wrentit
Forster's Tern	California Thrasher
Band-tailed Pigeon	Cedar Waxwing
Barn Owl	Yellow Warbler
Anna's Hummingbird—x	Townsend's Warbler
Acorn Woodpecker	Wilson's Warbler
Nuttall's Woodpecker—x	Spotted Towhee
Northern Flicker	Lark Sparrow
Black Phoebe—x	Song Sparrow
Western Kingbird	White-crowned Sparrow
Warbling Vireo	Dark-eyed Junco
American Crow—x	Red-winged Blackbird
Tree Swallow	Western Meadowlark
Violet-green Swallow	Great-tailed Grackle
Cliff Swallow—x	Bullock's Oriole--x
Chestnut-backed Chickadee-x	American Goldfinch
Bushtit—x	House Sparrow

(x—breeds in Heather Farm)

Due to their nature it is impossible to completely document the birds in Heather Farm. Observers are not on the property every hour of every day, and because of the property's extent, it is not possible to see everything at once. In addition, bird populations around the world are being affected by what we humans have done and continue to do to our environment, sometimes for better and sometimes for worse. The observations made in

Heather Farm might be a result of something happening on a much larger scale. However, loss of natural habitat within Heather Farm Park is a threat to populations of birds, butterflies and other insects and other animals within the park.

The Mount Diablo Audubon Society's Christmas Bird Count surveys indicate a drop in winter water fowl in Heather Farm Park. The following table gives numbers for 5 species:

	Average Population up to the mid-90's	Average Population last 2-3 years
Canvasback	2	0
Common Goldeneye	2	0
American Wigeon	2	0
Ruddy Duck	25-30	2
Double-crested Cormorant	15	4

Interestingly, Ruddy Ducks started breeding in Heather Farm during the summer of 2001. Notable, too, is the appearance from at least December 10, 2001, to early February 2002, of up to 20 Ring-necked Ducks. A pair of these ducks stayed on until at least March 7, 2002.

Pied-billed Grebes have nested at Heather Farm at least as early as 1995, probably much earlier. At times 2 families have been noted.

Black-crowned Night-Herons have probably been nesting here many years. The writer first saw a nest only in 2000. These birds are probably a serious predator of Mallard ducklings and Coot chicks.

Canada Geese first bred in Heather Farm as early as 1994. They continue to breed quite successfully, apparently suffering very few losses to predators.

The Ruddy Ducks, as noted, have for many years been present during the winter. Their numbers vary from a few pairs to 20 or more. They were strangely absent during the winters of 1996-97 and 1997-98. On June 3, 2001, a pair of Ruddy Ducks was seen with 7 ducklings. They suffered due to predation by the Night-Herons. A second brood by these parents, and additional nesting by a second pair, resulted in 2 separate families.

Mallards and other ducks reproduce profusely, but they seem to suffer high mortality in the first week or so after hatching. They are present in high numbers year-round.

A member of the Falcon family, the American Kestrel was regularly seen in the park well into the 90's. On February 12, 1994, a pair was seen copulating. The last record of note is 1997.

Acorn Woodpeckers used to be resident breeders in Rancho Dorado, a housing development immediately to the north of the park. After being crowded out by the more aggressive European Starlings in the early 90's, they were still seen occasionally in the small oaks in the open space south of the original ball fields and just west of Bancroft Village. These trees were removed during the construction of the new ball fields. The last record for the woodpeckers is August 16, 1996. Lack of groves of old-growth oak trees has hastened their decline.

Last year, 2001, Killdeer nested on the raised mostly flat portion of the Contra Costa Water District property. This raised portion is composed of fill brought to the site during the large construction project in the late 90's.

Anna's Hummingbirds have resided in Heather Farm for many years. In January of 1999 a female unsuccessfully nested adjacent to the Equestrian Center parking lot.

In the spring of 1992, Bullock's Orioles nested along the small creek just south of the Garden Center. The last known observation of orioles in Heather Farm is May 11, 1995.

Throughout the 1990's, additional sightings of wildlife were noted. The Red Fox family in the Contra Costa Water District property was often noticed early in the morning. Sometimes they were seen on the property of the 7 Hills Ranch. After the large tank-like structures were removed as part of the large construction project, they were no longer seen.

Sometime in the mid-90's, River Otters were noted in the large natural pond, and even in the man-made pond. The sightings have been sporadic at best, and it has always been best to find these aquatic mammals early in the morning.

Until sometime in the early 90's, when a large construction project rebuilt the drain for the main pond of Heather Farm, from where it exits the park and parallels the Contra Costa Canal until entering the main channel of Walnut Creek, Muskrats were occasionally sighted. They were also noticed in the Ygnacio Canal where it runs alongside the large pond.

This report was prepared for the Habitat Restoration Task Force, William Hunt, Chair, by Hugh B. Harvey and Rosita O. Harvey, Representatives to the Task Force for Mount Diablo Audubon Society,
June 28, 2002.

The attached Heather Farm Bird List was prepared for the Task Force by Hugh B. Harvey using observation information supplied by Vida Dawson, Hugh B. Harvey, Dee Mitchell, Br. John O'Neill, Susan Parr, Jean Richmond, Fred Safier, Barbara Vaughan, and other volunteers of the Mount Diablo Audubon Society Christmas Bird Count. The list may be incomplete, pending additional reports of observations.

Attachment D. Task Description

Some elements of the plan can be started before we have detailed plans including saving existing small oak trees and starting some vegetation.

Changes in Park Maintenance Practices

1. From now on, stop dumping dirt, wood chips and other debris in the following three habitat areas.
2. From now, suspend mowing oak seedlings until the habitat design has established which ones will be kept as part of the habitat plan. In the near term, Park Maintenance staff, Bill Hunt and Ralph Kraetsch working as a team can mark seedlings to be saved. From that time on, avoid mowing oaks that are to be kept as part of the habitat design.
3. After planting has begun, time mowing in habitat areas to allow flowers and native grass to develop and go to seed. In general, the amount of mowing in habitat areas should be minimized.

Removals / Repairs (work for volunteers and staff)

4. Remove or spread the mound of dirt in area between the lake and Equestrian Center. This mound is 100 yards from San Carlos. (near that end of the habitat area.) Spreading the mound could be done by volunteers with shovels and wheelbarrows, but would be a quick job for staff with a tractor. Removing it would require a truck and a place to take the dirt and would be less suitable as a volunteer activity. If the mound does not contain an refuse or other undesirable material, it may provide a source of good quality dirt for use in the nature areas.
5. Remove or spread the mound of wood chips between the lake and the equestrian center. This mound is farther from San Carlos than the dirt mound (at the other end of the habitat area.) Spreading the mound could be done by volunteers with shovels and wheelbarrows, but would be a quick job for staff with a tractor. Removing it would require a truck and a place to take the wood chips and would be less suitable as a volunteer activity. Removal is preferred.
6. Remove the thick layer of spread wood chips in the area between the lake and San Carlos. City workers have dumped and spread wood chips in this area for years. In some places the wood chips form a layer several inches thick that is now contaminated with weed seeds. This layer is not effective in suppressing weed growth. Our chances for establishing an attractive landscape in this area would be enhanced by removing this excess layer of wood chips. This would require city park workers and their equipment to probably
7. Remove the Raywood Ash trees between the lake and San Carlos that are in poor

condition. Most of these trees have sunburned trunks and are leaning excessively. This is not necessary for habitat restoration in the area but the trees will need to be removed at some point. (Around 12 trees.)

8. Remove most of the Sycamore trees between the lake and Equestrian Center that are in poor condition. Several of these trees have few remaining leaves and are leaning excessively. This is not necessary for habitat restoration in the area but the trees will need to be removed at some point. One or more trees might be left as perching places for birds.

9. Remove the timbers and gates between the equestrian center and the fence uphill from it that were once used as a training course for horses. When that is done, the disturbed area should be replanted with trees and shrubs so that weeds will not colonize the bare areas. In the past, representatives from the Equestrian Center organization stated that these features were no longer needed. They offered to participate in removing this material. This material includes heavy timbers that may need to be cut up and hauled away. This may require power tools, a truck and a place to dump the removed material. Volunteers from the Habitat Task Force and Equestrian Center can get this clearing started. City help will be needed to cut up, load and haul away the heavy timbers. The timbers might be useful in making a temporary barrier to entry to Area 2.

Weed control (work for volunteers and staff)

10. The area between the lake and San Carlos has quite a few non-native thistles (mostly milk thistles.) It is important to prevent more thistle seed being added to the seed bank in the ground here. These thistles should be mowed at the proper time to prevent development of seed. Some mowing could be done by volunteers using the OSF mowers. Timing is important for success in controlling weeds. If we can plan ahead, volunteers can mow weeds before they have developed viable seeds and too late for those weeds to grow back. Volunteers may provide extra flexibility to get the job done at the right time. Thistles can be mowed even after seed heads have developed if a sickle bar mower is used and the seed heads are gathered and removed.

11. There have been several small stands of yellow star thistle in the park. One is near the outlet of the lake. Another is on the edge of the lake opposite the island near the boat ramp. There are also some other thistle plants there. It is important that these stands be prevented from spreading more seed and eliminated. Mowing at the proper time or cutting with a weed eater is practical. Hand pulling is also practical for such a small area. Volunteers can do this work. Mowing for 2 years should control the problem.

Consulting Support

12. The city should hire a consultant firm to design the layout of the habitat areas - walks, benches, tables and placement of trees, shrubs and flowers

13. The city should hire a consultant firm to evaluate habitat issues. This work might

include identifying current populations of plants and animals and suggesting measures to improve habitat quality. Studying aquatic habitat (in the lake) and water quality issues should be a part of this study.

A single consulting firm might accomplish both tasks in one study.

Planting (all by volunteers)

It is difficult to form a complete estimate of the total number of plants required at this time. The estimate for trees is the most reliable and the estimate for flowers and grasses (as started plants rather than seed) is the least reliable.

Trees - 35-50

Shrubs - 150

Flowers - 500

Grass plants - 1000

Some of the plants will be grown at little cost by volunteers and the rest purchased from nurseries.

14. Volunteers will collect seed and cuttings from local sources and start these plants in pots. (Some seed and cuttings would be planted directly in the habitat areas.) The Gardens at HF has volunteered space and labor for starting plants. Individual volunteers may also house some plants.

15. Some collected seed and cuttings may be started under contract by a local nursery. Cost would be similar to buying plants from a nursery. (\$ 4-5 for a plant in a 4" pot to \$6.50-7.50 for a plant in a 1 gal. container). This collection of plants would include a mixture of trees, shrubs, flowers and grasses.

16. Some plants would be bought from a nursery with cost depending on the size of the plant and the size of the container. This collection of plants would include a mixture of trees, shrubs, flowers and grasses. Average cost for plants bought from a nursery might be \$5 - \$ 7 per plant.

17. Small valley oaks are already growing in some parts of the area between the lake and the Equestrian Center. Although they have been mowed in past years and have little structure above ground, they have extensive root systems that would give them a big head start over newly planted oaks. Volunteers can mark these trees so that they will not be mowed again. Volunteers can prune the trees that are selected to be retained.

18. Planting trees and shrubs requires digging holes. Most of these plants would be in 1 gal. containers. A few trees in 5 gal. containers might be planted. We do not expect to use any trees in large boxes. Volunteers would dig holes with shovels and use trowels to

fill in holes. Volunteers may supply some tools. Buying additional tools for volunteers might cost \$ 700.

19. Some experimenting with planting methods should be done before full scale planting begins. Planting flowers, small shrubs and grasses requires some preparation of the ground to allow the new plants to compete against established grasses and weeds. We will use black plastic material ("weedblock") to suppress competing grass and weeds around the flowers and grasses. We will prepare 3' by 3' or larger rectangles by scraping away the current cover of grass and weeds. Next we will dig holes and plant on or more plants within that square. We will cover the cleared rectangle with a rectangle of weedblock material with holes cut in the material for the plants just planted. We will tack down each corner of the plastic with 6" metal staples. Volunteers will hand water these plants through the first summer and fall. Volunteers will remove the plastic and staples after the first or second year as appropriate.

20. Full scale planting of flowers, small shrubs and grasses would be done in late fall and winter by groups of volunteers over two years. Large number of volunteers can be used and work can be arranged into a number of work sessions. We will not attempt to plant every inch of habitat areas or to suppress all existing grass and weeds. We expect to plant in a checkerboard of planted areas surrounded by unplanted areas. This will establish desirable plants and improve the area's habitat value and visual appeal. Costs for plants have been described above.

Paths, Benches, Tables and Bridge

21. Soft paths should be constructed in each habitat area. City staff should choose materials and method of construction. The exact location of the trails will be determined in the design process. The path shown in the proposed master for the habitat areas are representative of the length and general direction of the expected final paths.

22. The HF Master plan shows a bridge across the small irrigation canal near the large oak tree on the edge of the lake. This bridge might be constructed as part of the project. The bridge design has to be approved by the CC Water District and the Bureau of Reclamation. This approval process may take 2 years. Construction of this bridge may not be a part of the initial restoration process.

23. Up to 8 benches and one or two picnic tables should be placed in habitat areas along the paths. City staff should specify the type of bench that is appropriate. A volunteer group could carry out installation of benches and table. Dan, do you have standard benches and tables for such a use (and costs?)

Irrigation or Hand Watering

24. Temporary irrigation or hand watering would be used to sustain the plants for the first spring and summer after winter planting. Newly planted trees and larger plants could be watered by drip irrigation or watered in larger volume at intervals of 2-4 weeks through

the late spring and summer. Flowers, small shrubs and grasses might need to be watered every week through the first summer. Hand watering by volunteers is feasible if water is available within 50' of all plants. Irrigation would not be needed after plants were started except when replacements were planted. This irrigation could be based on above ground pipes from water connections. It should be much cheaper than installing a permanent irrigation throughout the habitat areas. entail? Water sources will be needed for eitat source. If hand watering is used, piping will be needed to within 50' of each plant to be watered. If irrigation is used, a combination of piping of different sizes will be needed from the water sources to all plantsr diameter piping for larger volume piping would be required. Dan, I think staff needs to decide what alternative is perferable and your staff should provide costs.

Platforms

25. Two observation platforms will be installed at the edges of the lake - one near the large oak tree near the island and one between the paved parking lot and the outlet. The details of these platforms has not been established yet. The platforms might float on the water or be supported by piers sunk into the lake bottom. Materials might cost \$ 3-4000 per platform. Volunteers might be able to do part or all of the construction. If the platforms can float rather than be supported by piers, the project may be simpler and more amenable to construction. (This element is not essential for habitat restoration. However, construction of the platforms would disturb the surrounding area. It would be better to finish that disturbance before restoring the surrounding area. The platform near the large oak tree is not in a habitat area. It can be built before or after the habitat areas are restored.) Constructing these platforms is a prime project for local service clubs, which are anxious to join this project.

Interpretation

26. Up to 8 simple 2-sided kiosks will be installed at several entry points to the habitat areas using volunteer labor. (3 between the lake and San Carlos, 3 between the lake and the Equestrian Center and 2 between the Equestrian Center and the uphill edge of the park. The city's Open Space staff has experience with installing such kiosks. Pre-fabricated kiosks are available for a cost of \$ 1200 each.

27. Interpretive signs will be placed near interesting features such as trees and shrubs. City staff should specify materials and design for these signs. Volunteers can compile the text and possibly photos for these signs. We do not have n estimate for the number of signs required. This would be an excellent project for a volunteer group such as the Lindsay Museum.

28. Up to 20 interpretative signs could be placed on the railings of the platforms on the lake (and on the existing platforms at the edge of the lake) providing information about wildlife on the lake. City staff should specify materials and design for these signs. Volunteers can compile the text and possibly photos for these signs. We do not have n

estimate for the number of signs required. This would be an excellent project for a volunteer group such as the Mt. Diablo Chapter of the Audubon Society.

Improving aquatic habitat quality

The consultant study listed above may suggest specific water quality improvements. This report can not predict those recommendations or estimate the extent to which volunteers could be used in aquatic restoration. Some of those restoration activities may be independent of restoration of land areas.

30. The task force with staff approval will shortly anchor several log segments in the lake to provide additional perches for birds and places for turtles to sun themselves. These changes are good for birds and turtles and make it easier for park visitors to see them.

31. Reeds growing around the edge of the lake may need to be thinned in a few years.

32. Trees and shrubs might be planted at the edge of the lake to provide additional food, shelter, perching and roosting places and to provide the desired level of screening of the lake.

Attachment E. - Plant List compiled by Rosita Harvey

What are the benefits of restoring a habitat with natives plants? Native plants provide the best kind of habitat for birds, animal, and insects because these plants are the foundation for a vast web of life that includes bacteria, fungi, insects, animals, and birds. The National Wildlife Federation, an organization that promotes the use of natives plants in gardens, estimates that **native plants support 10 to 50 times more wildlife than non-native plants**. Native plants provide other benefits also: they help conserve water, they protect water quality, and they prevent the invasion of unwanted species. Here I have listed a few native species, from large to small, which will do well in our park, and the names of birds that will benefit from them. Different sizes of plants provide a better habitat because they meet the different species' needs. Any of the plants I mention here will help make Heather Farms Park not only more beautiful but more attractive for wildlife.

Trees

Bigleaf Maple. This is a fast growing tree and can grow from 20 to almost 100 ft. Maples grow in moist canyons and stream banks. They will do well near the lake at H.F. The flowers and seeds provide food for squirrels, mice, woodrats, House Finches, American and Lesser Goldfinches, Yellow-rumped Warbler, Warbling Vireos, and Black-headed Grosbeak. Birds such as Anna's hummingbirds, Orioles, Bushtit, Marsh Wren use this tree for building their nests.

Valley Oak, Coast Live Oak, Canyon Live Oak, Blue Oak. A number of valley oaks are already growing near the canal between the lake and equestrian center; more can be planted in some of the areas which will not be watered much. Coast live oaks and blue oaks should be planted in suitable locations. The acorns and insects living in the trees feed birds such as Western Scrub- Jay, Downy Woodpecker, Red-breasted Sapsucker, Acorn Woodpecker, Nuttall's Woodpecker, Northern Flicker, Chestnut-backed Chickadee, Bushtit, House and Bewick's Wren, Oak Titmouse, Red-breasted Nuthatch, Ruby-crowned Kinglet, Wrentit, Yellow-rumped Warbler, Townsend's Warbler, Orange-crowned Warbler and Wilson's Warblers, Mockingbird, Robin, Western Blue Birds and Western Tanager. Butterflies and dragonflies also benefits from these trees.

Toyon can adapt to any environment. This tree grows as much as 20ft; it is a drought-tolerant, good at keeping erosion under control and can grow fast. The flowers which bloom in the summer attract a great variety of insects, which many birds depend on for food; the flowers also attract bees and butterflies. Birds, such as robins, pigeons, California Quails, Western Bluebirds, California Thrasher, Cedar Waxwings, Warblers, and Red-breasted Sapsuckers love the red berries this tree produces in the Fall. This kind of tree can be used dividers, or background, accent plant perhaps around the property line.

California Madronos (Madrone). These trees prefers full sun, and their large roots are good at controlling erosion. The berries they produce can stay in the tree feeding the birds most of the winter.

The flowers produce abundant nectar for butterflies, bees, and hummingbirds. Some butterflies, such as the western elfin, use the California Madrone as a host for their larva. Some of the birds which feed on its berries are robins, Cedar Waxwings, California and Spotted Towhees, Northern Flicker, Jays, Mockingbirds, Acorn Woodpecker, Downy Woodpecker, Nuttall's Woodpecker.

Western Sycamore. This type of tree, like the others I mentioned, grows as tall as 80ft tall, but it is a graceful looking tree. Because they are not drought tolerant, they are excellent to plant next to the creeks or in some empty areas by the natural pond. Birds, such as Anna's hummingbirds, orioles, Titmouse, Gold finches and Pine Siskin will use this tree for nesting and feeding. Butterflies also benefit from it.

Other trees I recommend are cottonwoods, Arroyo Willows, White Alder, California Hazelnut, Black Walnut, Monterrey Cypress and California bay laurel. Some can be planted near the lake or creek and others by the property line. All of them will need water until established.

Shrubs Large and Small

Coyote Bush and Mulefat. These plants, although not related, are not only drought tolerant but they propagate quickly. Birds and small animals use it as shelter. They also attract a great abundance of insects on which birds such as California Quails, California Towhee, several kinds of sparrows, Wrentit, and warblers need to feed.

Manzanitas: Big-berry, Brittle-leaf, Pringle and Mt Diablo's Manzanita. Their sizes vary from 6' to 20 ft high. These shrubs grow well under harsh conditions and is completely drought resistant. In the summer, their flowers yield berries which feed Cedar Waxwings, jays, California Quails, California Towhees, sparrows and finches.

Coffee Berry and Redberry Buckthorn. Hummingbirds and butterflies feed on the flowers; birds feed on the abundance of insects these shrubs produce; few birds feed on the berries. Still, these are hardy plants which grow rapidly and do well in partially shaded and sunny areas although they will need some water while they adapt to their new environment.

Pink Flowering Currant is considered one of the most ornamental shrubs for it beautiful flowers. They are drought tolerant, will grow best under large trees such as oaks, but they can also tolerate full sun once established. Birds such as towhees, thrushes, sparrows, finches, robins, quails, and jays love the berries.

There are many other kinds of shrubs which will do well in the park. All will require some water in the summer until they are established, and all will look wonderful in any area of the park. Some are Tree Tobacco, Blue blossom, Spice Bush, Silver Bush Lupine,

Pitcher Sage, Black sage, Blue Bush Lupine, Chaparral Pea, Chaparral Currant, Ninebark, Wild Roses, Thimbleberry, Yerba Santa, Sticky Monkeyflower, Huckleberry, Wild Plums and Cherries, Bush Sunflower, Bush poppy, Dogwood, Jim brush Gooseberries, Wild-ginger, Western Redbud, and last but not least, Chamise. All are loved by hummingbirds and butterflies which feed on the flowers; warblers, chickadees, vireos, sparrows, thrushes, finches, waxwings, towhees, wrenit and quails eat the insects or the berries these plants produce. Some birds also may use them for nesting as well.

Vines

Vines are also necessary to create a balanced environment for wildlife. A great number of insects live on them, and they prefer a riparian habitat once established. The flowers some of these vines produce a great abundance of nectar which hummingbirds love; other birds love the seeds. They are good climbers and fast growers, so they should be chosen carefully. Some are Virgin's Bower, Common Manroot, Vine Honeysuckle, Decorated Sweet Pea, Native Blackberries, California Wildgrape, and California Pipevine. All these vines provide great shelter for ground feeding birds, insects, and animals such as squirrels and rodents.

Wild Morning Glories should also be considered; they are native morning glories and should not be confused with the bindweed, which was introduced from Europe. The most common specie is called *Calystegia occidentalis*. Two others are *Calystegia subacaulis* and *Calystegia malacophylla pediceliata*. These plants produce beautiful flowers and seeds during spring and summer from which many birds can feed.

Perennials / Annuals / Herbs

These are charming and aromatic plants which attract a great variety of insects, butterflies, and birds. They are smaller than shrubs and some bloom throughout the summer. Some make excellent ground covers and some do require water once established. Many produce attractive flowers, seeds or leaves and many have interesting shapes.

Blue-eyed grass is well established in area 2 and appears to be spreading. Milkweed which supports butterflies is also found in this area but greater quantities are needed.

Those plants that require water that I know are California Buttercup, Douglas Iris, and Coral Bells. Many others will take either full sun or partial shade and will do well with little or no water. Some are Yarrow, California Fuchsia, columbine, Scarlet Monkeyflower, Coyote Mint, Field Mint, Sacramento Pogoyne, Penstemons, Yerba Buena, Mullein, Woody or Black Nightshade, California Goldenrod, California Bells, Elk Clover, Popcorn Flower, Prince's Plume, Fiddleneck, Wild Buckwheats, Red Larkspurs, Blow-wives, Rosinweed, Native thistles *Cirsium occidentale*, Indian Warrior, Figwort, Indian Paintbrush, Wild Snapdragon, Willow Herb, Wooly Paintbrush, Golden Eardrops, Western Bleeding Heart, Wild Onions (golfers love it though), Trillium, Ithuriel's Spear, California Milkweed, Mallow, Chia, Hummingbird Sage, Skullcap, Mustard, Toothwort

or Milkmaid, Western or Foothill Wallflower, Wild Tobacco N. bige/ovii, Lady's Bedstraw, Lady's Smock, Wooly Angelica, Cow Parsnip, Water Parsley, Biscuit Root, any of the Monkey Flower family, Broadleaf Milkweed and Horsetail Milkweed, and many others.

There are some annual herbs which will do well in our area also. Some are Fringe-pod or Lacepod, Bitter Cress Vinegar Weed, Canchalagua, Cream Sacs, Owl's Clover, Ellegant Clarkia, Chinese Houses, California Poppy, Baby Blue-Eye, Tidy-Tips, and Bird's eye Giia.

Grasses

Some native grasses should be considered because they add gracefulness to areas inter-planted with annuals and perennials. They produce stalks of flowers which stand above the foliage. One type is Blue wild Rye. This plants grows about six feet tall, it is drought tolerant and loves full sun. It is already found in area 3.

Purple needlegrass (*Nassella Pulchra*) and Foothill needlegrass (*Nassella Lepida*) are found in many parts of Walnut Creek's open space. They occur in combination with soaproot, blue-eyed grass and buttercups and are drought tolerant. The Melic Grasses, *Melica California* (*M. imperfecta*) and *Melica Torreyana* are also found in Walnut Creek's open space - *M. California* in rocky or dry habitats and *M. Torreyana* in more moist settings such as Indian Creek. Both are somewhat drought tolerant.

Another grass is California Fescue. The plant grows to about four ft. tall and the flower to about three ft. It is drought tolerant but will do best in partial shaded areas. This is an excellent choice of grass to plant in a meadow area.

This list is not intended to be used as a guide but to be used only as a sample. I have chosen these plants for their availability at Native Plants Nurseries. I cannot include every tree, shrub, or wildflower in an area as rich in plants species as our area is, but I know that these plants attract a great number of birds and will do well in the park.

Sources used:

Wildflowers of the Sierra Nevada and the Central Valley by Laird R.Blackwell.

Plants of the East Bay Parks by Glenn Keator Ph.D.

The Gardener's Guide to the East Bay, published by the Aquatic Outreach Institute. This booklet also has lists of resources such as native plant nurseries, plant sales, mail-order seed sources and books and magazines.

Annotated Checklist of the East Bay Flora by Barbara Errter.

The Flowering Plants and Ferns of Mount Diablo, California by Barbara Ertter,
Mary L. Bowerman, Marianne Franzese Chasen

Online sources

California Academy of Sciences California Wildflowers

<http://www.ca/academy.org/research/botany/wildflow/index.html>

Calflora: Botanical Resource for California

<http://elib.cs.berkeley.edu/caflora>

California Oaks

<http://www.californiaoaks.org>