



CITY OF CHICO MEMORANDUM

TO: BIDWELL PARK AND PLAYGROUND COMMISSION **DATE :** DECEMBER 12, 2006

FROM: PRESERVATION/STREAM COMMITTEE (BARRETT, CHAIR; WOOD) **FILE:** 12/11/06 BPPC

RE: REPORT ON PRESERVATION/STREAM COMMITTEE MEETING OF DECEMBER 11, 2006

Attendees of the 12/11/06 Preservation/Stream Committee Meeting:

Commissioners: Tom Barrett, Chair, Dave Wood and Rich Ober (absent)
Public: Susan Mason, John Copeland, Joanna Francesca, Woody Elliott, Sue McCabe and Neil McCabe
Staff: Dennis Beardsley, Denice Britton and Lise Smith-Peters

The Committee reviewed and took actions as indicated at its December 11, 2006 meeting.

(Action Recommended)

a. Review and Consideration of 2007 Vegetation Management Program.

The initial discussion focused on the 2007 Vegetation Management Plan. Lise Smith-Peters, Park Volunteer Coordinator, and Susan Mason with Friends of Bidwell Park gave a brief background on the formation of the 2007 Plan and explained some of the particulars in terms of priorities for the Park's vegetation management planning, including the mapping of invasive plants in the Park. Ms. Mason also described the Invasive Plant Management Chart (see chart in attached 12/11/06 Committee Staff Report) and how it would be used for prioritizing removal of invasive plants found in Bidwell Park, and that the chart also identifies areas where removal of invasives have already begun.

The group discussed the eradication efforts of the Arundo Donax in Lindo Channel and ailanthus trees in the Park. Ms. Mason asked that the word "seed" be removed from the Arundo Control section on page 6 of the 12/11/06 Staff Report. Commissioner Barrett recommended that Catalpa and English ivy also be considered as priorities for the 2007 plan. The group also discussed the removal of Olive trees at the Golf course and suggested that staff review removal methods with Golf Course staff members.

Ms. Mason then explained the control methods section of the Invasive Plant Management

Chart, emphasizing that more research and review of how other entities control invasives would be needed. The group discussed control methods and recommended that the term “Spray Program” be changed to “Herbicide Treatment Program,” to better reflect this control method.

The group then considered the importance of educating the Park staff, the general public as well as Park neighbors to the need for removing invasive plants and replacing invasives with plants native to the area.

Commissioner Barrett asked that mapping of the oak regeneration areas be added to the Vegetation Management Plan priorities for next year so that the progress of young oaks maybe monitored. General Services Director Beardsley also recommended that a soil analysis be conducted on the walnut orchard to determine why tree regeneration in that area has been limited over the last few years.

The Committee recommends that the 2007 Bidwell Park Vegetation Management Plan be approved as revised herein. A copy of the revised Plan in redline/strikeout form is attached.

Attachments: 12/11/06 Committee Agenda and Staff Report
Revised 2007 Vegetation Management Plan

BIDWELL PARK

VEGETATION MANAGEMENT PLAN

for

Bidwell Park and Playground Commission Meeting of December 11, 2006

This report reviews the goals and objectives for the Vegetation Management Plan for Bidwell Park as well as various techniques that are being used or considered to achieve those goals and objectives. In the plan, it is important to note that a variety of techniques to managing vegetation are used. As a vegetation management tool, effective and sustainable control alternatives are welcomed. The use of herbicides tend to be a tool of last resort for specific applications.

Background

In the latter part of 1993, a plan was approved by the Bidwell Park and Playground Commission (BPPC) to address invasive plant species through prescription burns and allow native species to regenerate. Both the Bidwell Park Master Management Plan adopted January 2, 1990 and the Wildfire Management Plan adopted December 1, 1991 addressed the vegetation management problem. Due to the lack of fire, better suppression technology when a fire did start, and the introduction of non-native vegetation many years ago, the park had become severely overgrown. This plan was the culmination of earlier work and the beginning of the present Vegetation Management Program in Bidwell Park.

On March 1, 1994, the BPPC approved a proposal to enter into a contract with the California Department of Forestry and Fire Protection (CDF) to do prescription burns in Bidwell Park. The agreement stated the City would provide personnel and equipment and CDF was to provide expertise and burn equipment to accomplish the goals. The Chaparral Management Program written by the CDF Resources Agency, dated May 1981, was the master document that provided the environmental review and analysis for this agreement.

Subsequent to the yearly burns, herbicides were used to control the Himalayan blackberry regeneration. The herbicide applications used in conjunction with the burns specifically targeted non-blackberries.

At its 7/25/97 meeting, the BPPC approved the following policy statement regarding the use of herbicides in Bidwell Park:

Consistent with the vegetation management goals and objectives as stated in the Bidwell Park Master Management Plan to manage for native species and reduce invasive non-native plants and trees, to minimize the use of chemicals in Bidwell Park to the greatest extent possible. Management techniques shall be evaluated continuously for best management practices to reduce the use of herbicides.

However, as a method of last resort, use of chemicals shall be permitted if feasible, if sustainable alternatives cannot be utilized.

1994-2006 Synopsis

The initial plan called for rotational burns over seven years with at least three rotations over twenty one or more years. The intent was, over time, to convert areas where non-native species were replaced with natives. The plan included provisions for mosaic control to minimize visual impacts and staying approximately fifty (50) feet away from Big Chico Creek until a more detailed plan could be developed. Concerns focused on impact on riparian habitat, stream health, and erosion potential. A summary of the initial six years are presented below:

1994

- South Side of One-Mile - Picnic Area #00 to Hwy. 99 - Completed
- South Park Drive - Picnic Area #2 east to Cedar Grove - Completed
- Upper Park - Trash cans to Day Camp along Big Chico Creek - Completed

Learned - Broadcast burns were attempted. The Park Department discovered that berry vines do not burn hot enough to have a clean burn. Too much stubble was left behind. No herbicides were used - area quickly became overgrown.

1995

- Vallombrosa Avenue - Rey Way to Crister Way - Postponed
- Centennial Entrance Corridor - Initiated
- Upper Park - South Slope - Postponed - Not beneficial to Burn at this time.

Learned - Found that cutting the vines and burning the piles was a very effective way to clearing an area. No herbicides were used.

1996

- Vallombrosa East - Crister Way to Walnut Orchard - Completed
- North Park Drive - One Mile Recreation Area east to Hwy. 99 between North Park Drive and Big Chico Creek. Postponed - Proximity of the vines to the Creek requires careful study before proceeding with a burn program
- Brown's Hole - postponed. Work was beyond capability of available equipment and personnel.

Learned - Found that using herbicides after clearing and burning was very effective in eradicating vines and allowing natives to regenerate.

1997

Bidwell Park Vegetation Management Plan
Annual Review

- South Park Drive - Cedar Grove to Manzanita Avenue - Postponed because of length of time to work on North Park Drive
- Five Mile - East on South side of Big Chico Creek - Postponed - Will be rescheduled for Year Six or Seven
- Upper Park Road - North of parking area F and Day Camp - Completed

Learned - Perfected the procedure for clearing of the berry vines and used herbicides sooner after the burns. In subsequent years, unburned areas were evaluated on a year to year basis. Factors taken into consideration were the benefits to the park, safety of burn and difficulty of clearing areas.

1998

- Lost Park - Initiated - Lost Park received an initial clearing to remove vines and other vegetation to improve the visibility of officers patrolling the area.
- Horseshoe Lake - Postponed until 1999
- North Park Drive - Continued - The area between Cedar Grove and Vallombrosa Lane was cleared in this year's program. The area around Picnic Site #25 was especially targeted to remove invasive tree species.
- Council Ring - Revisited - The areas around the Council Ring were revisited by the crews from Salt Creek in January and sprayed in June
This was one of the original control sites.
- Cedar Grove - Initiated - Several areas in and around Cedar Grove were cleared by Salt Creek in January and sprayed in June
- Five Mile - Initiated - Invasive vegetation was removed from the area east of the restrooms on the south side of the creek

Learned - While complete target plant death occurs quickly in late May and early June, the potential for non-target plant mortality increased when ester based herbicides are used. Ester based materials volatilize easily during warmer weather. An amine, or water based, material is safer for use during warmer weather.

1999

- North Rim Trail - Initiated burns - Began the process of controlling Yellow star thistle below the Easter Cross area
- Horseshoe Lake - Initiated burns - Thistle control
- Wildwood Park - Ongoing - Continued bi-yearly wetland burn program
- North Park Drive - Initiated goat program
- Upper Bidwell Park - Unplanned burn - The fires of August 1999 initiated a 1,600 burn of Upper Park.
- Horse Arena - Initiated goat program - Thistle control

2000

Bidwell Park Vegetation Management Plan
Annual Review

- Rifle Range to Trash Cans - Burns Completed
- Parking Lot P to Easter Cross- Burns Completed
- Peterson Memorial Park Drive - Continued goat program - Grazed approximately 25 acres between the Walnut Orchard and Madrone Avenue, at Picnic Sites #39 and #40, east of Sycamore Pool, and west of the Sycamore Pool dam
- Peterson Memorial Drive - Initiated goat analysis - Study the long-term effectiveness and sustain ability of the goat program in controlling Himalayan blackberry
- Horse Arena - Continued goat program
- Golf Course - Initiated Arundo donax control program
- Upper Park - Volunteers continued broom control program

Learned - Goats serve as a better follow-up vegetation control method in some instances. Manual Arundo donax removal works better than using chain saws. Repeated burning of an area for one target plant can have negative impacts on other plants within the area.

2001

- Peterson Memorial Drive - Continued goat grazing although program halted before completing area north of Big Chico Creek east of the One Mile Recreation Area, due to vandalism. Salt Creek crews completed invasive blackberry removal in August/September.
- Arundo donax (Giant Reed) - Removal and chemical treatment. Removed 28 tons upstream from the bridge at the Golf Course down to the Club House.
- Ailanthus - Completed bank treatment in Lower Bidwell Park. There were no prescribed burns.

2002

- Last controlled burns in Upper Bidwell Park (Parking Area B)
- Goats grazed the area north of the Five Mile Recreation Area
- Began Arundo donax removal continued downstream from the Bidwell Golf Course

2003

- Goats grazed the Walnut Orchard and an area east of Picnic Site #20
- Arundo donax removal reached the Five Mile Recreation Area
- The Friends of Bidwell Park focused on Bladder senna making remarkable progress toward eradicating it from Lower Bidwell Park.
- Streaminders began work in the Sycamore Restoration site at One Mile. Major equipment work was done, removing 75 tons of concrete and asphalt from the

creek. Blackberries and other non-native invasive plants were removed from an

acre of land by the creek and the area was planted with native grass plugs and tree seedlings.

Learned - With blackberry removal, planting of natives and follow-up is the key. Herbiciding of resprouts may be required for success.

2004 - 2006

- California Native Plant Society (CNPS) continued their Spanish broom control in Upper Park and the Big Chico Creek Ecological Reserve (CSU, Chico Research Foundation) initiated a major broom removal effort.
- Friends of Bidwell Park (FOBP) continued monitoring and removing bladder senna.
- Park Division and FOBP started a major privet removal effort in Lower and Middle Parks. Park Division followed up with backhoeing of privet stunts on the northside of Five Mile Recreation Area.
- Annie's Glen was selected as the Bidwell Park Centennial restoration site and FOBP had weekly volunteer invasives removal and restoration activities there for 1 ½ years.
- FOBP started invasive plant removal on the north side of Lost Park.
- FOBP started ailanthus and puncturevine eradication projects.
- Park Division with CDF removed all Arundo Donax from Big Chico Creek.
- Park Division cut, cleared and treated Himalayan blackberries in the World of Trees, a one acre parcel next to Hwy 99 (between Petersen Drive and Vallombrosa), one acre parcel north of picnic site 21 (previous goat area) and picnic sites 34 and 35. Follow-up treatment with Roundup.
- Park Division volunteer projects in 2006 include pokeweed removal at Caper Acres and surrounding area and at Sycamore Restoration site; weeding around oak seedlings in Oak Regeneration area; ivy removal along .

Goat Program

The Vegetation Management Program was modified in 1998 to include the use of goats for Yellow starthistle and Himalayan blackberry control.

In 1999, the goats were used in place of manual control of the Himalayan blackberry. The height and thickness of the brambles proved to be very difficult for the goats and produced results less than anticipated. In 2001, Salt Creek crews were used to cut the blackberries during the winter and have the goats feed on them in the spring. The new growth was much more manageable for the goats, allowing them to eat the stalks much closer to the ground. This had a positive visual impact on the Park.

Another positive visual impact of grazing is the creation of extended sight lines due to

the goats browsing and lifting the vegetation to about six feet.

Due to budget restrictions and the need to evaluate best management practices, goat grazing has not been continued.

Hand Removal for Early Infestations of Non-Native Blackberries

The Commission has asked for a program to hand remove small non-native blackberry plants before they become large plants. During 2004 - 2006, the Park Division cut, cleared and treated Himalayan blackberries in the World of Trees, a one acre parcel next to Hwy 99 (between Petersen Drive and Vallombrosa), one acre parcel north of picnic site 21 (previous goat area) and picnic sites 34 and 35. The Park crew followed-up treatment with Roundup where needed. Volunteer removal of blackberry has occurred in Caper Acres and at the Sycamore Restoration site.

Spray Herbicide Treatment Program

Limited spraying will be done in 2007. If necessary, spot treatments will be used to control blackberry. The spot spray program will occur in a manner similar to the ailanthus program in which isolated trees are identified and treated using low volume/pressure application techniques. The techniques ensure the application is made to only the target plant. Arundo treatment will also include spraying.

Arundo Control

In 1998, a group of concerned citizens led by Suzanne Gibbs experimented with removing giant reed at the Five Mile Recreation Area. The main location of the invasive plant is adjacent to the Bidwell Municipal Golf Course as the **seed** source for infestations downstream. The experiment indicated it would be extremely difficult to remove an old Arundo clump from the creek bed. In response to this information, staff applied for, and received, grant money to initiate a mechanical and chemical removal program.

Hand and mechanical removal of Arundo donax began in September 2000 and continued into October 2000. Initially, City staff cut, treated, and removed, the Arundo. Midway through the project, Salt Creek crews were used to cut and remove the Arundo, and staff immediately applied a (Rodeo) solution. Early cutting was done using chain saws. This proved to be dangerous and it fractured the Arundo canes.
Hand loppers

were substituted for the chain saws. Not only was the work safer and quieter, the canes were kept intact, facilitating easier wick applications.

The results were encouraging - A total of 28 tons of *Arundo donax* was removed in 2001. In the same area, approximately two tons were removed in 2002. In 2002, removal and the treatment extended through the Golf Course removing a total of 13 tons. Follow-up included chemical treatment in 2003 on previously treated areas.

Staff anticipates at least one or two more years of follow-up with diminishing amounts of chemical. At that point, the project will be monitored.

In 2005, the CSU, Chico Research Foundation received a grant to eradicate *Arundo donax* from Lindo Channel. After reviewing the long-term effectiveness of *Arundo* control projects in Bidwell Park, they expanded their eradication area to include the section of Big Chico Creek upstream of the diversion dam, in order to ensure that new infestations would not occur. Due to permitting problems, only half of the 218 *Arundo* occurrences in Lindo Channel/Big Chico Creek were treated in 2006. Treatments will continue in 2007 and 2008. Invasive Salt Cedar plants in Lindo Channel also were treated. Infestations on Big Chico Creek downstream of the dam (4-5 locations) will continue to be treated by the Park Division.

Broom Control

The Mt. Lassen Chapter of the California Native Plant Society, under the direction of John Copeland, continued to remove Spanish broom from Upper Park. The CSU, Chico Research Foundation received a grant to remove Spanish and French broom from the upper watershed and was also able to remove all of the remaining large broom plants in Upper Park through the Iron Canyon area. CNPS and other volunteers will continue their monitoring and removal efforts in 2007. Although there is no broom in Big Chico Creek downstream of the diversion dam, the amount of broom in Lindo Channel continues to grow. The Butte County Weed Management Area has applied for a grant to control broom in several areas of the county, including the Big Chico Creek watershed. If the grant is awarded, Lindo Channel could be one of the targeted areas.

Ailanthus Program

In 2005, FOBP mapped ailanthus occurrences between Lost Park and Manzanita Ave. Subsequently, several other occurrences were found in the horse arena area. With the help of a volunteer licensed herbicide application, basal bark treatments were started on the ailanthus in Lower Park. Detailed records have been kept regarding treatment locations, size and number of stems treated and herbicide usage. Most of the mature

trees that were treated have died. FOBP will treat additional areas and re-treat, as necessary, in 2007. Total eradication will take at least 5 more years. The Park Division provides support by removing dead ailanthus trees that have become fall hazards.

Bladder Senna Program

In 2003, FOBP mapped all bladder senna occurrences in Lower and Middle Park and began removal of the shrubs. To date, they have spent about 1900 hours in this effort. Virtually all mature, seed-producing plants have now been removed. However, because of the enormous seed bank and long seed viability (20+ years), this monitoring and removal program will need to continue for many years. Currently FOBP spends about 200 hours per year on this project. The goal is eradication.

Japanese Privet Program

Continuing the privet removal work of Kids & Creeks at Five Mile, in 2004, the Park Department cut down the large seed-producing privet trees and FOBP manually removed most of the thousands of smaller trees. In 2005 and 2006, the Park Department removed most of the large privet trees around Caper Acres. In the last 3 years, FOBP has removed most of the privet trees in Annie's Glen, Camellia Way Park, Hooker Oak Park, along Woodland Ave. between East 4th St. and One Mile Way and on the north side of the park between One Mile and Hwy 99. Privets in the World of Trees were removed as a joint project of the Park Division and FOBP. FOBP has mapped all occurrences of privets in the park (263 locations containing an estimated 1M trees and seedlings) and will continue to remove these privets as volunteers are available.

Puncturevine Program

Volunteer Lynn Thomas monitored and removed puncturevine from Lower Park for many years. FOBP has been mapping and removing puncturevine between Annie's Glen and Parking Lot E in Upper Park since 2004. Bike shops participated by paying for

specialized removal tools. Total control will require cooperative efforts from park lessees, since much of the puncturevine is on their leased properties. Lower Park infestations increased significantly in 2005, possibly due to construction. Since puncturevine grows primarily in unshaded areas in July and August, it is difficult to get volunteers to remove it.

American Pokeweed

Pokeweed is currently the invasive plant species that's expanding its territory most quickly in the park. It's a perennial, with a large bulbous root. The seeds are spread by birds. The Park Division's Volunteer program has focused on removing pokeweed in and around Caper Acres and the Sycamore Restoration site.

Restoration Program

Throughout 2006, volunteers through the Park Division have identified oak seedlings, staked the trees, and weeded and mulched around them in the One Mile Oak Regeneration areas. Additional Park Division volunteer efforts in 2006 have focused on removing invasives in the Sycamore Restoration site. Park Division volunteers will also help revegetate this area with native plants based on Streaminders restoration plan. This site is one of the locations for the Park Division's *Volunteer Fridays in the Park*.

This Fall, Kids and Creeks have held several work days with elementary students at Cedar Grove, removing vinca and planting native plants.

Bidwell Park 2007 Vegetation Management Priorities

- For worksites where a significant amount of invasive plant removal has already taken place (see *2007 Invasive Plant Management* spreadsheet), continue to eradicate invasive species. Partners will develop revegetation plans and also document the history of prior work at the site. Throughout the park, continue to remove specific weed species for which the distribution and prevalence are known and a successful control method has been developed. These include American pokeweed, broom (French & Spanish), bladder senna, giant reed, perennial pepperweed, privet, puncturevine, and tree of heaven.
- Partners will develop vegetation management plans for additional worksites in the park, including botanical surveys, prioritizing of invasive plant removal, creating revegetation plans and starting removal. For 2007, these areas will include Cedar Grove, World of Trees, Deer Pen, the area between Caper Acres and Hwy 99, and the north side of Big Chico Creek between the Pine St. Bridge and the One Mile pedestrian bridge.
- Partners will develop a methodology for mapping and map the rest of the Priority 1 & some of the Priority 2-3 invasive plants (see *2007 Invasive Plant Management* spreadsheet). A control plan will then be developed for each of these plants.. With the information compiled through mapping, partners will work toward the goal of defining vegetation management zones for the entire park to facilitate the development of future

control plans. The background work for creating management zones will also include reviewing how other entities manage their lands and ecosystems.

- Train park maintenance workers to identify rare plants and specific invasive plants. Decide which invasive species park workers could assist in removing as part of their regular routine as time permits (e.g. puncturevine, milk thistle, small infestations of pokeweed and yellow starthistle). Set up a system for park workers and the public to report weed infestations and a way to verify the weed identification (see the attached “Strategies for Early Detection—Using the Wildfire Model”). Partners will design a form for reporting infestations. This form may be placed on the following agency/organization websites for reporting purposes: the City of Chico, Friends of Bidwell Park, and Streaminders. Invasive plant identification, mapping, and removal will be incorporated into the trail maintenance program, when possible.
- Partners will work together to develop materials to provide public information about invasive plants in general and specific invasive plants (e.g. kiosk displays, plant ID cards.)
- Each organization that provides any vegetation management in the park will be asked to submit a periodic report to the Volunteer Coordinator, documenting what they accomplished during the prior time period and, annually their goals for the following year. Currently, these organizations include the Chico Park Division, California State University Chico Research Foundation, Friends of Bidwell Park, Mt. Lassen Chapter of the California Native Plant Society, Kids & Creeks, Mechoopda Indian Tribe and Streaminders. An annual version of these reports will be presented to the BPPC concurrent with the annual park lessee pesticide/herbicide usage reports.

Long-term Tasks

- Work with local experts to include fire management elements into vegetation control plans for the vegetation management zones, as the zone plans are developed. In conjunction with the Fire Chief, partners will develop a list of local experts to work with.
- Work with park lessees (Bidwell Park Golf Course, CARD, Chico Creek Nature Center, Chico Equestrian Assoc., Kiwanis Community Observatory, Rod & Gun Club) to develop invasive plant control programs for their leased areas of Bidwell Park.

