Invasive Plants in Bidwell Park

What are they? What is being done? Why should you care?

Friends of Bidwell Park Presentation to Bidwell Park and Playground Commission February 25, 2008

What is an Invasive Plant?

 A plant with traits that allows it to invade, persist and dominate pre-existing biological communities

 Invasive plants are prolific, easily dispersed, and grow readily in a variety of conditions, especially where human activities occur

Why is it Important to Control Invasive Plants?

- Weeds out-compete native plants reducing biodiversity and ecosystem function—can create a monoculture containing only a few plant species
- They usually fail to meet food and shelter requirements for diverse native wildlife species
- Weed-dominated communities have less aesthetic value
- Weed-dominated communities tend to present an increased fire danger
- Dense infestations can create a security problem

How Do We Decide What's Invasive?

Consult Reference Materials



How Do We Decide What's Invasive?

Participate in Symposiums, Workshops, Field Trips



How Do We Decide What's Invasive?

Seek Advice from Nearby Agencies, Universities & Organizations

- California Invasive Plant Council
- California Native Plant Society, Mt. Lassen Chapter
- California State University, Chico faculty & Herbarium
- California State Parks
- Big Chico Creek Ecological Reserve
- Butte County Dept. of Agriculture
- Butte County Weed Management Area
- Dittes & Guardino Consulting
- Eco-Analysts
- Plumas National Forest
- River Partners
- The Nature Conservancy
- University of California, Davis

Brief History of Invasive Plant Control in Bidwell Park

- Prescribed burns of Himalayan blackberry
 1998-2003
 - Goat graze on YST & Himalayan blackberry
- Salt Creek Crew hand remove blackberry
- 2003-present

1994-1999

- Volunteers hand remove invasive plants
 - Park staff remove large invasive trees
 - Spot spraying of herbicide

Vegetation Management Techniques Species-based Approach

- Easier for volunteers to learn to identify one plant species & the proper removal techniques for that plant
- Often requires fewer active restoration efforts and less monitoring
- Useful for small infestations, highly invasive plant species and species that haven't reached the "tipping point"
- Examples: Bladder senna, Broom, Bur-chervil, Giant reed, Ivy, Japanese privet, Johnsongrass, Perennial pepperweed, Pokeweed, Puncturevine, Yellow starthistle

Vegetation Management Techniques Site-based Approach

- Remove all invasive species from a well-defined location and replant with appropriate native plants, as volunteer time and funding permits
- Can require large investment of volunteer time for initial removal and for monitoring & maintenance
- Examples: Annie's Glen, Caper Acres, Lost Park, Sycamore restoration sites, Five Mile Recreation Area, some picnic sites

What Species are Being Controlled?

• Limited number of species targeted (about 20 of the 130 invasive species found in park)

• Focus of control has changed over time

• Available resources dictate control choices

 Plantings in Experimental Forestry Station in ~1900 have led to unique invasive species

Spanish & French Broom Spartium junceum, Genista monspessulana

- Spanish broom is found along creek in Upper Bidwell Park and in Lindo Channel
- French broom found at Hooker Oak Park
- CNPS Mt. Lassen Chapter has pulled out Spanish broom for 14 years
- Major broom eradication efforts underway upstream of Bidwell Park





Yellow Starthistle Centaurea solstitialis

- Dense infestations scattered throughout grasslands and oak woodlands
- Prescribed burns and goat grazing tried from 1999-2003
- Controlled eradication trials to start soon





C032-09

Himalayan Blackberry

Rubus armeniacus

- Dense thickets are common in Lower Park, and scattered in riparian areas of Middle and Upper Park
- Prescribed burns started in 1994, goat grazing in 1999, volunteer hand-removal in 2003
- Dead canes under new growth are major fire hazard
- Currently being removed in small area north of Caper Acres
- Although it provides some wildlife habitat, it excludes the germination and growth of plant species native to Bidwell Park



S52-03



Giant Reed

- Found in about 230 locations in Upper Park & Lindo Channel
- Only 4 locations in Park below Five Mile dam
- Park Division started park eradication efforts around 1996
- Eradication in Big Chico Creek & Lindo Channel started by Big Chico Creek Watershed Alliance in 2006





Tree of Heaven

Ailanthus altissima

- About 200 locations between Lost Park and Horse Arena in Upper Park
- Spreads primarily by root sprouts that grow up to 70 feet from tree; seeds a lesser source of reinfestation
- Major volunteer eradication effort about 10 years ago, but no monitoring and follow-up
- Friends of Bidwell Park started eradication in 2005; about 20% remaining
- Needs long-term monitoring due to trees in neighboring yards





C241-02

English & Algerian Ivy Hedera helix, H. canariensis

- Found primarily in Lower Park, covers at least 100 acres
- Toxic to humans and most wildlife
- Provides mosquito breeding areas
- Super park volunteer, Laura Nissim, started removing Ivy at Five Mile in 2003
- Current volunteer efforts focused on cutting vines at base of trees
- Need to pull vines away from trees and target seed-producing ivy





Bladder senna

Colutea arborescens

- 1 shrub planted in Experimental Forestry Station around 1900
- Spread to over 70 trail-side locations by "seed-pod-popping" park users between One Mile and Five Mile
- Not used by local wildlife for food or habitat
- About 500,000 plants removed so far by Friends of Bidwell Park, since starting in 2003
- Will need continued removal and monitoring for at least 10 more years



Japanese Privet

Ligustrum japonicum

- Approximately 275 locations between Lost Park and Bidwell Park Golf Course with an estimated 1M trees & seedlings
- Intentionally planted at golf course, Five Mile, Caper Acres and Hwy 99
- Extremely prolific, producing millions of seeds yearly
- Seeds germinate and grow readily
- Focused removal effort started in 2003 by Park Division and Friends of Bidwell Park



C115-03



Puncturevine (a.k.a. Goathead)

Tribulus terrestris

- Ouch! Found along roads and trails throughout Bidwell Park, Chico bike paths and Chico schoolyards
- CNPS volunteer removal in Lower Park for at least 10 years
- Monitoring and removal efforts started in 2004 by Friends of Bidwell Park
- Commissioner Dave Wood and CNPS Volunteer Wes Dempsey removing from Upper Park trails
- Pesticide contractor now spot spraying along Upper Park Road to control







C254-03

Big Periwinkle Vinca major

- Dense ground cover, found mostly in Lower and Middle Park
- Planted by Boy Scouts in 1950s at request of Park Director
- Spreads primarily by root sprouts
- Difficult to eradicate
- Dense cover prevents oak tree and native plant germination and establishment
- Kids & Creeks and park volunteers removing it from specific sites





C013-02

American Pokeweed Phytolacca americana

- First recognized as problem in 2005
- Now spreading rapidly throughout Bidwell Park
- Spread by birds eating seeds
- Increasing problem throughout Central Valley riparian settings
- Large bulbous root makes removal difficult
- Mature plant leaves and seeds toxic to humans





C168-03

What Other Plants Need Control as Soon as Possible? Woody Species

- Catalpa
- European olive
- Edible fig
- Hawthorn
- Pistachio
- Cherry plum
- Winged elm
- Hackberry





Catalpa Catalpa spp.

- Found between Lost Park and Five Mile
- Original planting in World of Trees
- Shading out species that are more desirable for wildlife
- FOBP mapping locations
- May need permits for effective control





European Olive Olea europa

- Olive orchard near former pistol range in Upper Park, spreading rapidly into areas of Upper Park
- Also prevalent in Cedar Grove & spreading throughout Lower and Middle Parks
- Dense growth changes soil chemistry, inhibiting other plants from growing
- Host for agricultural pest olive fruit fly
- Dense stands are fire hazards



C115-05



Edible Fig Ficus carica

- Found throughout riparian areas in Bidwell Park
- One very large tree in Deer Pen and one at former cabin site at Ten Mile
- Other areas in California are reporting sudden, massive increases in fig populations
- Requires herbicide for control & eradication
- Will require permits for control due to proximity to creek





C159-01

English Hawthorn Crataegus spp.

- Planted in Experimental Forestry Station in about 1900
- Major, dense infestations near Cedar Grove and by Madrone Ave.
- Difficult and expensive to eradicate



C228-01



What Other Plants Need Control as Soon as Possible?

Grasses & Thistles

- Barbed goat grass
- Broomsedge bluestem
- Bur-chervil
- Garden burnet
- Johnsongrass
- Italian plumeless thistle
- Klamathweed
- Medusahead grass





C141-02

Take-home Messages

- Some invasive species are well-established and others are just getting started
- Invasives are rapidly replacing native plants and animals in all cityowned natural areas
- City's most valuable asset, their 5000+ acres of open space, needs professional natural resource management
- MMP contains no specific information about assessing or controlling invasive species and how it will be financed
- Volunteers should not be expected to shoulder the whole burden
- Need more help from the City and the public