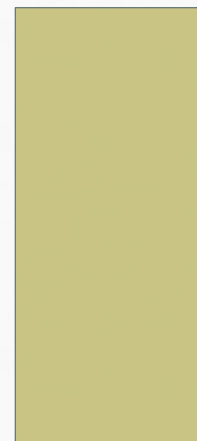




IMPLEMENTING THE CITY OF AUSTIN INVASIVE SPECIES MANAGEMENT PLAN

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THE CITY OF AUSTIN INVASIVE SPECIES MANAGEMENT PLAN

Background

- Austin City Council Resolution (April 2010) called for city-wide invasive species management plan
- Plan development facilitated by Ladybird Johnson Wildflower Center
- Plan Approved by City Council November 2011



City of Austin Invasive Species Management Plan



DEPARTMENTAL IMPLEMENTATION

The ISMP stated that each department should begin implementing invasive plant management actions. It did not stipulate how that should be done.

What invasive management actions should be taken by the Watershed Protection department?

WPD has three missions

- Prevent and reduce impacts from flooding
- Prevent and reduce erosion
- Enhance and protect water quality

DEPARTMENTAL IMPLEMENTATION

How do invasive plants directly impact departmental mission?

- Reduction of channel conveyance
- Increased susceptibility to erosion
- Reduction of stream baseflow

What are other water resource impacts of invasives?

DEPARTMENTAL IMPLEMENTATION

Ecosystem services

- Reduction of cover and diversity of native plant species
- Reduction or impairment of habitat for other organisms, including endangered species
- Alteration of nutrient cycling in lacustrine, riverine and riparian environments
- Alteration of wildfire frequency and intensity, which can impact water resources through post-fire effects (exposed soil and unstable slopes leading to increased suspended sediment)
- Recreational value of waterways and riparian areas

IMAGINE AUSTIN GOALS

- CE P7** Protect and improve the **water quality** of the city's creeks, lakes, and aquifers for use and the support of aquatic life.
- CE P8** Improve the urban environment by fostering safe use of **waterways for public recreation**, such as swimming and boating, that maintains the natural and traditional character of waterways and floodplains.
- CE P12** Adopt innovative programs, practices, and technologies to increase **environmental quality** and sustainability and reduce Austin's carbon footprint through the conservation of natural resources.
- CE P14** Establish policies that consider the benefits provided by natural ecosystems, such as ecological processes or functions in **wetlands and riparian areas**, that have value to individuals or society.
- CFS P1** Deliver potable water to Austin's residents as the population grows and maintain **an efficient and sustainable water and drainage system** in support of the Growth Concept Map.
- CFS P7** Reduce the threats **flooding** poses to public safety and private property.
- CFS P10** Protect and improve the health of Austin's streams, lakes, and aquifers for sustainable uses and the **support of aquatic life**.
- CFS P11** Protect the health of creeks and prevent public and private property damage by **minimizing erosion**.
- CFS P46** Foster the use of creeks and lakes for **public recreation** and enjoyment in a manner that maintains their natural character.

DEPARTMENT OBJECTIVES

- FC1** Reduce the depth and frequency of **flooding** for all structures in the 100-year floodplain.
- FC2** Reduce the depth and frequency of **flooding** on all roads in the 100-year floodplain.
- FC5** Prevent the creation of future **flood hazards** to human life and property.
- FC6** Reduce the depth and frequency of localized **flooding** for buildings.
- FC7** Reduce the depth and frequency of localized **flooding** for yards.
- WQ2** In Urban creeks, restore **baseflow quantity and quality** to the maximum extent possible.
- WQ3** In Non-Urban creeks, preserve the existing **baseflow quantity** and quality to the maximum extent possible.
- WQ6** Maintain or enhance high quality environmental features (springs, seeps, **wetlands**, swimming holes, **threatened or endangered species habitat**) to the maximum extent possible.
- CG1** Maximize the use of waterways and drainage facilities for **public recreation**.
- CG2** Maximize areas for **public use within floodplains**.
- CG3** Maintain **natural and traditional character of floodplains** to the maximum extent possible.
- CG4** For all state designated stream segments... maintain or improve the **Designated Use Support** status.
- CG6** Minimize the risk to structures in the 100-year **floodplain** as required by the National Flood Insurance Program.

PRIORITIZING SPECIES

What species are of highest concern for water resources?

- High Priority
 - Hydrilla
 - Arundo
 - Ligustrum
- Moderate Priority
 - Widespread, low-density species
 - Chinaberry
 - Photinia
 - Patchy but highly concentrated species
 - Nandina
 - Japanese honeysuckle
 - Chinese tallow
- Low Priority – grasses, annuals, common landscape plants

MANAGING WOODY INVASIVES

Current Approach

- Developing techniques for ligustrum and other woody species
 - Gradual canopy reduction
 - Minimal slash generation
 - Minimal soil disturbance
 - Focus on restoration
- Looking at strategies for long-term management



DEPARTMENTAL IMPLEMENTATION

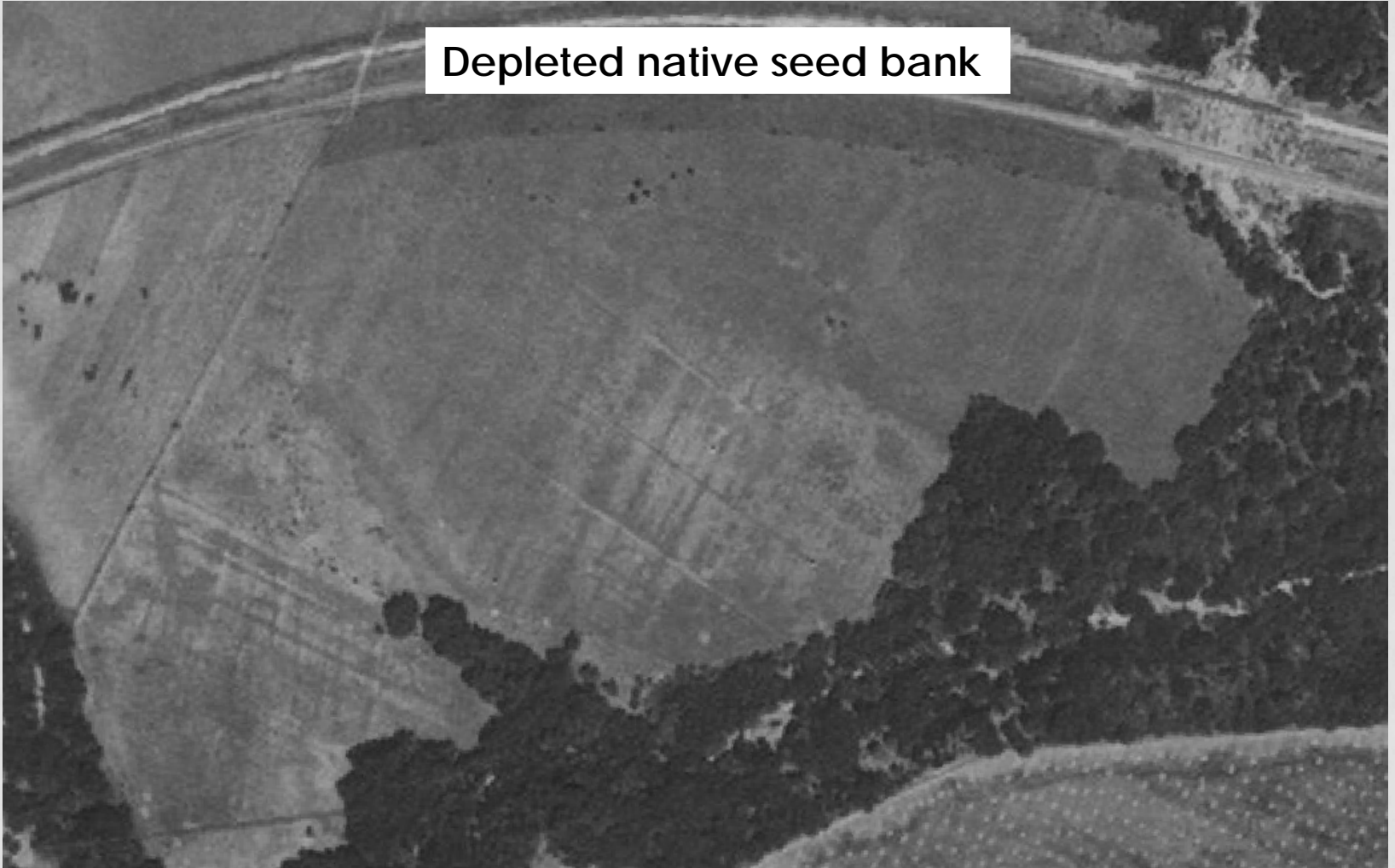
How do we reduce impacts related to water resources?

Is there a stable state we can ~~return to~~ reach?

- Novel Ecosystems
 - Highly modified riparian areas
 - Ongoing hydrologic disturbance
 - Reduced native seedbank
 - Abundant invasive seedbank

INVASIVE PLANTS AND RIPARIAN RESTORATION

Depleted native seed bank



INVASIVE PLANTS AND RIPARIAN RESTORATION



INVASIVE PLANTS AND RIPARIAN RESTORATION

Plentiful invasive seed bank



INVASIVE PLANTS AND RIPARIAN RESTORATION



INVASIVE PLANTS AND RIPARIAN RESTORATION



INVASIVE PLANTS AND RIPARIAN RESTORATION



FUTURE APPROACHES

Continue studying impacts of woody invasives

- Control will likely continue to be limited to “high value” parcels

Continue to develop baseline data for invasive distributions

- Catclaw vine, japanese honeysuckle, chinese tallow

Develop Arundo control strategy for urban watersheds

Evaluate elephant ear on Lady Bird Lake