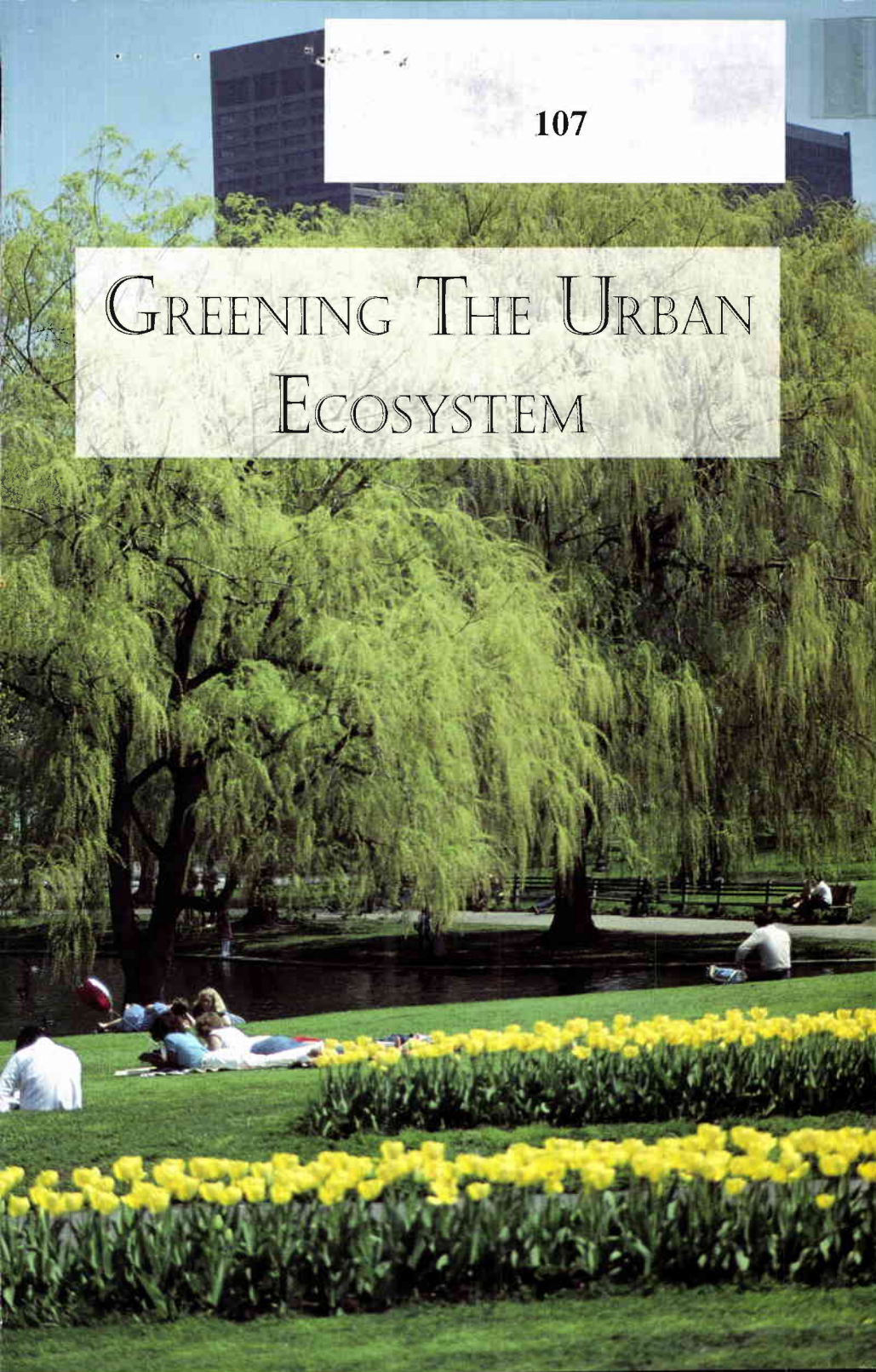


# GREENING THE URBAN ECOSYSTEM





## INTRODUCTION

### Greening the Urban Ecosystem

All too often we forget that the trees shading our streets, the flowers brightening our neighborhoods and the grass that cushions our steps represent more than simple aesthetics. This urban plant life constitutes a green ecosystem that makes our cities environmentally, socially and economically healthier places to live.

Though Californians living in cities need plant life year round, rainfall only occurs in the winter months in the Western United States. People must, therefore, take care of the green infrastructure in their communities. Well planned irrigation systems, plant installations and plant maintenance are not only a major industry, they are also critical to a sustainable urban environment and social habitat.

It is not enough to protect the plants that now live in the cities. We must greatly increase existing greenery per capita to ensure that our kids have places to play, our cities receive the environmental benefits of landscaping and communities pride continues to grow in plant-filled neighborhoods.

The first step in greening the cities is for Californians to understand the magnitude of the green environment. For this reason three elements of the urban ecosystem are presented in the following pages: environmental, in which energy, air quality, and water are managed; social, in which individuals, communities and cities flourish along with plants; and finally the economic element of the green industry with more than \$10 billion in sales and services.

## GREENING — THE ENVIRONMENTAL INVESTMENT

During the drought the public was bombarded with misinformation about the relationship between the environment and landscaping. As a result, trees, flowers, grass and bushes were allowed to die simply because they used water.

*The following facts are important to know:*

- Less than 4% of California's developed water supply is used for landscape, which includes homes, golf courses, public parks and roadways.  
*(UC Riverside Extension Study)*
- More than 90% of California's developed water is used for agricultural, commercial, industrial and governmental needs.  
*(Department of Water Resources)*
- A 25% reduction in landscape watering would produce only a 1% savings in California's total water usage.
- Improved irrigation management alone, without plant restrictions, can generate 40% reductions in landscape water use.

Water conservation is only one factor in the total environmental equation and must be balanced against other environmental benefits resulting from landscaping.



## Greening Lowers Energy Bills

- Landscaping cuts energy bills. Landscaping cools our environment and reduces energy consumption by 10% to 50%.  
*(Southern California Edison)*



- Approximately 8% of urban electrical demand in cities is used to cool buildings, compensating for the “heat island” effect. Heat island effect is the term used to describe the phenomenon of cities being hotter than adjacent rural areas, due to large areas of concrete and asphalt.  
*(Lawrence Livermore Laboratory, UC Berkeley)*
- Shade trees form a natural umbrella over homes, cutting attic temperature by up to 40 degrees and helping air conditioning units run 2 to 4 percent more efficiently.  
*(Sacramento Municipal Utility District)*

- During winter, evergreen plants and trees serve as excellent windbreaks; reducing heat loss and keeping homes warmer.  
*(Sacramento Municipal Utility District)*
- Deciduous vines and trees on the south and west side of a home provide summer shade, yet allow winter sun to warm it.  
*(Sacramento Municipal Utility District)*
- An average front lawn has the cooling effect of 10 tons of air conditioning.  
*(Dr. James B. Beard)*

## Greening Improves Air Quality

- Plants scrub pollutants from the air. One tree can remove 26 lbs. of carbon dioxide from our atmosphere each year, which is the same amount emitted by one car every 11,000 miles.  
*(National Arbor Day Foundation and California Association of Nurserymen)*

- An acre of trees can remove 13 tons of dust and gases every year from the surrounding environment.

*(Sacramento Tree Foundation)*

- Landscaping cleans the air by trapping dust and smoke particles. Grasses trap much of an estimated 12 million tons of dust and dirt released annually into the atmosphere.

*(Dr. J. Scott Angle)*

### Greening Cleans and Protects Our Water Supply

- Plants capture surface water run off which helps recharge our aquifers, reducing erosion, flooding, and excess sewer overload.
- Turfgrass, trees and shrubs filter water pollutants. Water running off or passing through a well-managed lawn is of approximately the same quality as tap water available in many cities.

*(Dr. Thomas L. Watschke, Penn State University)*

- Plant material helps purify water entering underground aquifers with its root mass, acting as a filter to capture and break down many types of pollutants.

### Greening Creates Wildlife Habitats

- There is considerable wildlife in cities. City habitats provide food and shelter for squirrels, birds and other small animals. A green urban ecosystem and wildlife corridors adjacent to cities will become more important for protecting wildlife as truly wild areas dwindle.

### Greening Helps Reduce Suburban Sprawl

- Some environmental leaders are now calling for a urban, “implosion” — for cities to become even more concentrated as a way to save what is left of California’s pristine wilderness. This is in response to the harmful environmental effects of suburban sprawl. Yet one reason people leave the cities is to “get close to nature.” Cities with a green ecosystem give people access to a natural environment close to their homes.

# GREENING — AN INVESTMENT IN THE PEOPLE OF CALIFORNIA

The urban ecosystem is where most people live and come to develop their relationships to other living things. The green urban ecosystem creates healthier living conditions, builds a sense of pride in community and can turn blighted areas into beautiful places to live.

## Greening Improves Public Health

A Harris Poll revealed gardening is America's number one leisure time activity, as well as a popular form of physical exercise. The planting and caring for plants can become a metaphor for finding personal strength and meaning. As the tree grows so does the individual.

Plants also encourage emotional and physical healing. One study revealed that convalescing patients with a view of trees spent 7.9 days convalescing, compared with 8.7 days spent by those without a view. Those with a view also required less-potent painkillers, had fewer post-operative complications and reported a much more positive hospital experience.



*Common Ground Garden Project*

## Greening Brings Communities Together

Beautifying the environment around homes and neighborhoods creates strong community pride. Plants around schools, churches, or community centers provide attractive facilities for family time, hobbies and recreation.



## Greening Can Reduce Vandalism

Constructive community landscaping activities involving young people are powerful crime deterrents. In addition, the use of landscaping, especially vines, is an effective means of combating graffiti.

## Greening as Public Art

Landscape is one of the most public forms of artistic expression. Using towering palms, a kaleidoscope of color, and thought provoking shapes, architects create art that is permanent, yet constantly changing with the seasons. When landscape art is included in public places such as transportation corridors, public buildings and parks, it expands a community's sense of individuality and civic pride, while bringing beauty to what could otherwise be pavement, concrete and glass.

# GREENING — THE ECONOMIC INVESTMENT

It is also important to remember the huge economic impact of the diverse green industry on the California economy. It is not only a large employer, it employs a great number of both skilled and low skill workers, people who might otherwise not have jobs. In fact, more than 4,500 jobs were lost in the industry due to the last drought and the



resulting water restrictions. *(Metropolitan Water District of Southern California—Draft Report)* Many more jobs also were lost during that period as a result of the recession. It is, therefore, critical that everyone consider the effect on California’s economy before making decisions that reduce landscape water availability.

## GREEN INDUSTRY GROSS SALES (estimated in billions)

Horticultural Growers.....	\$ 1.97
Wholesale Nurseries .....	2.01
*Landscape Services .....	2.01
Lawn & Garden Mfg. ....	0.03
Retail Nurseries & Garden Supply .....	1.43
Florists.....	0.56
Public Golf Courses.....	0.93
Subtotal .....	8.94
**Estimated value of Government Landscape Services .....	2.00
<b>Total.....</b>	<b>\$10.94</b>

*(Metropolitan Water District of Southern California—Draft Report)*



\*Landscape Services increased by 50 percent to reflect unlicensed contractors.

\*\*Estimated value Government Services based on 1987 wages reported by U.C. Riverside.

Extension study and Foster Economics, 1992, inflated to 1990 dollars and with an assumed gross value-to-wages ratio of two. This is a conservative estimate. Other multipliers quoted in the U.C. Riverside Extension study are in the range of 2.76 – 3.76.

## California Green Industry

- 10,000 firms
- \$10 billion plus in annual sales and services
- 170,000 people employed statewide
- \$3 billion annual payroll

## \$48 Billion in Single Family Homeowner Investments

- Home values increase by an average of 7.5% with a well-landscaped yard.  
*(Gelman & Grey Research and Planning Services, 1991)*
- A landscaped yard can speed up selling a home by 5 to 6 weeks.  
*(Gelman & Grey Research and Planning Services, 1991)*
- The average cost to replace dead landscape is \$8,000. The 6 million single family residences in the state, with landscape investments of \$8,000, have a combined statewide landscape investment of approximately \$48 billion.  
*(Armstrong Garden Center, Inc. Survey, 1991)*
- Landscape investments can be recovered between 100-200% in increased home value.  
*(Wall Street Journal, 1991)*
- Landscapes reduce utility bills.  
*(Southern California Edison)*

## Community Fire Protection Investment

- Green landscaping can save homes in a wildfire. Experts say the devastating Santa Barbara Fire in June 1990, which destroyed more than 500 homes, demonstrated that residences bordered by green trees and plants were far more likely to be spared than those with dry landscaping.

*(California Insurance Group)*

- Over reliance on native or so called “drought tolerant” plants can increase fire danger because they have high fuel oil contents and are often dormant and dry in summer.

## Erosion Control

- Plant covered areas prevent mudslides and duststorms.

## Economic Development and Tourism

Greening is usually a major part of economic development projects. Civic efforts to bring investment into blighted areas frequently begin with improving landscaping in common areas and making parks inviting for people after work and on their lunch breaks. Tourists visit our beautiful cities for

their architecture, museums and specialty gardens, such as Japanese tea and botanical gardens.



*Terrace Theater, Long Beach  
Convention and Entertainment Center*

## CONCLUSION

One of the primary goals of the Council for a Green Environment is to educate both individuals and public policy makers about the environmental, social and economic importance of the green urban ecosystem. Tree-lined streets, community parks and urban gardens should not be viewed as luxuries, but instead should be seen as basic components in a livable urban environment.



It has been well documented that for less than 4 percent of California's developed water supply, the green urban ecosystem helps mitigate some of the worst environmental problems associated with cities. For example, trees absorb the carbon dioxide emitted from cars, and grasses help capture and purify storm water runoff and restore underground aquifers.

The social benefits of the green urban ecosystem also can not be denied. The installation and maintenance of a green urban ecosystem creates healthier living conditions and helps build a sense of personal and community pride.

It must also be recognized that plant maintenance, installation and irrigation in our cities is a major industry, which employs thousands and pumps more than \$10 billion into local economies.

We hope this publication will help Californians expand their awareness and understand the necessity of the green urban ecosystem in all of our lives.

*A publication of*

THE COUNCIL FOR  
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