



## Benefits of Gardening

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Americans face a lot of stress factors including constant bombardment with information about environmental issues, economic concerns, health worries, and community strife. Gardening is a tool to abate life's stress, enhance the environment, develop individuals, and build communities.

### Landscapes Contribute to Environmental Quality

Urban and community forests can strongly influence the physical/biological environment and mitigate many impacts of urban development by moderating climate, conserving energy, using carbon dioxide, improving air quality, controlling rainfall runoff and flooding, lowering noise levels, harboring wildlife, and enhancing the attractiveness of cities.<sup>1</sup>

Urban forests play a key role in abating the emerging energy crisis. On a community-wide basis, the value of the urban forest in heating and cooling effects quickly adds up to the millions of dollars in energy savings. Some figures to illustrate this point include the following:

- Trees contribute to energy conservation because they help reduce the cost of heating and cooling buildings. Summertime air temperatures in cities can be as much as 10<sup>0</sup> F warmer than in surrounding rural areas due to the replacement of soil and vegetation with concrete, asphalt, and metal.<sup>2</sup>
- Computer simulations suggest that a single 25 foot tree can reduce the heating

and cooling costs of a typical residence by 8 to 10 percent.<sup>3</sup>

- In another study, windbreaks can reduce a typical home's heating demand by 5 to 15 percent.<sup>4</sup>
- In a Sacramento County case study, the value of the urban forest in its annual cooling effects was calculated at approximately 157 GWh (\$18.5 million) per year.<sup>5</sup>

Carbon sequestration is another measurable benefit of lawns and trees, important because increased greenhouse gases in the atmosphere have been linked with global climate change. Studies in Sacramento, California, showed that "in net, the urban forest removes approximately 3.3 tons per acre each year with an implied value of \$3.3 million (\$0.55 per tree). Carbon dioxide reduction by Sacramento's urban forest offsets the total amount emitted as a by-product of human consumption by 1.8 percent".<sup>6</sup>

A fast-growing forest tree absorbs up to 48 pounds of carbon dioxide a year; that adds up to ten tons per acre of trees—enough to offset the carbon dioxide produced by driving a car 21,000 miles.<sup>7</sup>

### Gardening Techniques Protect and Enhance the Environment

Yard care and gardening activities have a direct impact on the neighborhood and community environment. Landscape design and maintenance sets a community standard of prosperity, tranquility, and serenity. This may be

found in a small but charming inner city garden or tasteful rural home sites.

Many Coloradans are unaware how their yard care and gardening practices actually enhance or negatively impact the environment. As a point of illustration, let's consider the home lawn.<sup>8</sup>

- The lawn provides clean space for children (and adults) to enjoy the outdoors.
- An actively growing lawn provides significant cooling to the local surroundings.
- Grass traps and thereby helps control dust and pollen in the air that contribute to allergic reactions.
- Grass helps abate noise and reflected light, common irritants in the urban setting.
- Grass is a very effective element of the urban ecosystem to break down pollutants. Twenty-five square feet of actively growing grass converts enough carbon dioxide into oxygen for one person per day.
- Soil microorganism associated with grass actively breakdown various pollutants, including air contaminants washed out of the air, pollen, and pesticides.
- A thick turfgrass allows 15 times less runoff than a lower quality lawn. A healthy stand of turfgrass can reduce surface runoff to almost zero. In the landscape setting, grassy areas provide the primary process to abate pollution caused by surface runoff.
- Mowed lawns are a major fire control component in residential areas.

On the other hand, yard care and gardening practices can negatively impact the environment. For example:

- Lawn clipping and leaves mowed or blown onto the gutter and street account for 60-80% of the phosphate loading of surface water in the urban landscape.
- Excessive lawn fertilization, promoting rapid growth, adds to the volume of yard waste.
- Excessive or careless fertilizer or pesticide applications contribute to water quality problems.
- According to data from the *Plant Health*

*Care* (landscape maintenance) industry, over 90% of the pesticides typically applied in landscape maintenance are unwarranted and have little to no benefit.

- Irrigation water demand is becoming a critical factor in the arid west. Plant selection, and irrigation system design, maintenance, and management techniques determine water usage.

## Landscaping and Property Values

Around twenty percent of the value of a house is tied up in the landscape. Landscape design and maintenance is a major factor in marketability of a house. To illustrate the point, the County Assessor's office lists the value of residential property in Larimer County, Colorado at \$16.9 billion.<sup>9</sup> This places the approximate value of residential landscapes in Larimer County at \$3.4 billion!

Studies have shown that landscape plants, particularly trees, enhance property values and increase city assets. For example in a study on a seven-acre tract of land, shade trees contributed 19 percent, or \$57,000, to the total appraised value of \$302,000.<sup>10</sup> In another study, real-estate appraisers estimated that trees contributed as much as a 27 percent increase in dollars for two-thirds wooded compared to open land with no trees.<sup>11</sup>

A study on the contribution of landscaping to the price of single-family houses showed that a house that obtained an "excellent" rating for the landscape from a local landscape professional could expect a sales price 4 to 5 percent higher (depending on the size of the lot) than equivalent houses with a "good" landscape rating. Homes with landscapes rated "fair" or "poor" could expect a sales price 8 to 10 percent below equivalent homes with good landscape appeal.<sup>12</sup>

A survey of real estate agents revealed that 84 percent of the real estate agents feel a house on a lot with trees would be as much as 20 percent more salable than a house on a lot without trees.

In addition, 62 percent of the respondents said the existence of healthy shade trees strongly influences a potential buyer's impression of a block or neighborhood; 60 percent thought healthy shade trees have a big influence on a potential buyer's first impression of a property; and 56 percent felt healthy shade trees are a strong factor in a home's salability.<sup>13</sup>

## **Gardening for Nutrition and Health**

Families with home vegetable gardens eat more fruit and vegetables for improved nutrition. For families on limited incomes, fresh fruits and vegetables may be a luxury they can't afford. The home garden supplies fresh fruits and vegetables and at the same time gives over a 20-fold increase in the value of produce grown compared to material costs.<sup>14</sup>

Gardening is also a key tool for improved health by providing exercise, stress reduction, and relaxation. From the medical perspective, researchers have documented that people who interact with plants recover more quickly from everyday stress and mental fatigue.<sup>15</sup>

For many, the garden is their escape from the pressures of the job and family responsibilities. This relaxation technique reduces stress levels and related issues like heart disease. Minnie Aumonier expressed it eloquently with, "*When the world wearies and society ceases to satisfy, there is always the Garden.*"

There has been an increased awareness in the restorative value of plants in hospitals, homes for the aged, and senior centers. In such places, many "healing gardens" are being constructed for clients, staff and visitors.

## **Gardening, a Tool to Develop Individuals, Strengthen Families and Build Communities**

Not only do plants contribute monetarily to the value of property, they also contribute to a higher

quality of life and benefit society. Researchers found that accessibility to nature was the most important factor—after the marital role—in life satisfaction.<sup>16</sup> Yard care and gardening activities develop individuals, strengthen families, and builds communities.

**For the individual**, gardening provides exercise, stress reduction, and relaxation. For many Americans it provides a creative outlet, a sense of accomplishment, and the gardener's personal link to nature.

The garden is a great place to learn the "joy" that comes from work. In contrast to popular video games, gardening teaches that life does not always give instantaneously rewards. With gardening, as in real life, the rewards for one's efforts often payoff some time in the future.

For many individuals the garden is their piece of nature. While most of us will never visit the tropical rain forests of Central America or the open plains of Africa, we can have our own piece of nature in the backyard. While many of us will find some time to enjoy wildlife in the majestic Colorado Rockies, most of us will spend more time enjoying the beauties of nature in our own backyard.

Gardening is increasingly used for its rehabilitation therapy in prison systems. When asked to document the impacts of a gardening project in a Colorado prison system, a Colorado Master Gardener report included the following statements from prison inmates. "... it helped me to start caring about life. I'm more relaxed and see how living thing are very fragile and need to cared for and nurtured... We can be indifferent or even cruel and mean and destroy life or we can help life and take care of it and benefit everybody by just not hurting. I guess people are not much different than daisies. We need care, and nurturing, and balance in our growth. ...." Another inmate states, "I have learned to deal with people as people instead of overpowering them or manipulating them as some sort of object to satisfy my wants."<sup>17</sup>

**Family** bonds are strengthened as families work together on yard care and gardening activities. Children learn work skills and team skills through gardening projects.

**Building Communities** – Gardening is a universal language that brings the community together. Gardening conversations and activities bring neighbors together, melting differences between racial and ethnic groups. Gardening is an effective tool to unite neighborhoods. Community gardens and urban forestry projects contribute to lower levels of domestic violence.<sup>18</sup>  
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Even corporate America is now including landscape considerations in its philosophy. When asked why they have emphasized landscaping, business owners cite the numerous positive aspects of trees and plants including the following:<sup>20</sup>

- Increases employee productivity, morale, and pride in the workplace
- Helps recruit new employees
- Attracts customers or new business tenants
- Can be used as an employee benefit
- Has a role in creating a corporate image
- Has value as a marketing tool

## **Partnership with Colorado's Green Industry**

In Colorado, yard care and gardening activities are a significant part of our state's economy. The wholesale value of Colorado Green Industry goods and services exceeds \$2 billion annually, accounting for over one-fourth of the state's agriculture industry. The green industry employs over 34,000 with an annual payroll in excess of \$825 million dollars. The average household in Colorado spends over \$1,000 annually on yard care and gardening supplies.

Since Colorado Master Gardeners are not selling products, Coloradans often look to CMG

volunteers as an unbiased information source. Home gardeners verifying information received from green industry workers accounts for one-third of the inquiries processed by Colorado Master Gardeners. CMG volunteers also serve the community as a catalyst to encourage gardening activities.

Colorado green industry leaders readily recognize that Colorado Master Gardeners directly impact the success of local gardeners. This in turn supports the success and growth of the Colorado's green industry. The CMG training also provides a great learning opportunity for nursery and garden center employees. Past success encourages expanding links between the Colorado Master Gardener Program and appropriate green industry training opportunities.

## **CMG Information Empowers Coloradans**

Gardening is a common topic of conversation at work, church, and between friends and relatives. The more involved a person is in garden related activities, the more aggressive they will be in seeking out *reliable* garden information. These active gardeners also share their gardening wisdom *weekly* with other less active gardeners.<sup>21</sup>

This has direct implications on the Colorado Master Gardener program. Highly involved gardeners are more likely to seek the advice of CMG volunteers, and in turn pass the information on to others. The level of expertise required to adequately respond to these advanced gardeners must continually rise and address emerging issues. To best serve the community, Colorado Master Gardeners need wisdom about water conservation and management techniques, alternative pest management options, as well as general gardening knowledge.

Colorado Master Gardener volunteers do make a difference. We have only begun to visualize the potential.

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