

POSITIVE BENEFITS OF TURFGRASS

James B. Beard

Texas A and M University, College Station, TX

Statesman Thomas Jefferson wrote that "communities should be planned with an eye to the effect made upon the human spirit by being continually surrounded by a maximum of beauty." A turfgrass has numerous, important functional purposes, as well as being attractive. These important dimensions that contribute to our quality-of-life are too often overlooked.

TURFGRASS FUNCTIONAL BENEFITS

1. Soil erosion control and dust stabilization - vital soil resource protection.

Turfgrasses serve as an inexpensive, durable ground cover as well as in protecting our valuable, non-renewable soil resources. Perennial turfgrasses offer one of the most cost efficient methods to control wind and water erosion of soil, which is very important in eliminating dust and mud problems around homes, factories, schools and businesses.

2. Reduces runoff from precipitation and contributes to flood control.

The dense plant canopy of mowed turfgrasses is very effective in the entrapment of water and airborne particulate materials, as well as in absorbing gaseous pollutants. The high degree of water runoff that occurs from impervious surfaces in urban areas carries many pollutants in the runoff. Turfgrasses offer one of the best known systems for catchment of the runoff water plus the pollutants, especially if proper landscape designs are used.

3. Enhances ground water recharge.

One of the key mechanisms by which turfgrasses control soil erosion is through a superior capability to essentially absorb or trap and hold runoff water. A healthy turfed lawn absorbs rainfall six times more effectively than a wheat field, and four times better than a hay field; being exceeded in this important function only by a virgin forest. This attribute is certainly important in enhancing ground water recharge.

74 ENVIRONMENTAL ISSUES

4. Functions in entrapment and biodegradation of organic chemicals; plus conversion of carbon dioxide emissions.

The extensive fibrous root system of turfgrasses contributes substantially to soil improvement through organic matter additions derived from atmospheric carbon dioxide via photosynthesis. In this process, a diverse large population of soil micro-flora and -fauna are supported. These same organisms offer one of the most active biological systems for the degradation of trapped organic chemicals and pesticides. Thus, this turf-ecosystem is important in the protection of ground water quality.

5. Enhances heat dissipation - temperature moderation.

The overall temperature of urban areas may be as much as 10-12°F warmer than nearby rural areas. Turfgrasses, through the cooling process of evapotranspiration, serve an important function in dissipating the high levels of heat generated in urban areas. For example, a football field has the cooling capacity of a 70 ton air conditioner. The cooling effect of irrigated turfs and landscapes can result in energy savings via reducing the energy input and allied costs required for the mechanical cooling of interiors of adjacent homes and buildings.

6. Reduces noise abatement, glare reduction, and visual pollution problems.

The rough surface characteristics of turfgrass function in noise abatement as well as in multi-directional light reflection that reduces glare. A grass area of 70 feet distance on a roadside can abate obtrusive vehicle noises by 40%. Thus, turfs lower the hardness of unwanted noise and lessen the visual stress of glare.

7. Decreases noxious pests and allergy-related pollen.

Regularly mowed residential lawns reduce problems of nuisance pests such as snakes, rodents, mosquitoes, and chiggers; plus allergy-related pollens produced by many weedy species. As small animals seek haven in taller grass at locations more distant from the house, they also are less likely to invade the house.

8. Provides safety in vehicle operation/equipment longevity.

Roadside turfgrasses are important in highway safety, as well as erosion control, in that they function as a stabilized zone for emergency stoppage of vehicles. Turfgrasses also are utilized for soil and dust stabilization around airfield runways in order to prolong the operating life of engines, while smaller airstrips utilize turfgrasses as the runway surface itself.

9. Lowers the fire hazard and provides security for vital installations.

The spacing provided by green lawns serves as a firebreak and as a high visibility zone that discourages unwanted intruders.

10. Contributes substantially to the national economy.

From a monetary standpoint, the turfgrass industry contributes in excess of \$30 billion annually to the United States' economy. Quality turfs also are of economic importance in that they contribute to increased property values and commercial appeal.