

# THE POSITIVE IMPACT OF TURF

A turf has numerous, important functional purposes as well as being attractive. These important dimensions that contribute to our quality-of-life are too often overlooked.

## FUNCTIONAL BENEFITS

- Soil erosion control — vital resource protection.
- Dust stabilization
- Heat dissipation — temperature moderation
- Noise abatement
- Glare reduction
- Reduced runoff of precipitation
- Ground water recharge
- Entrapment and biodegradation of organic chemicals
- Atmospheric pollution control — particulate/chemical
- Conversion of carbon dioxide emissions
- Safety in vehicle operation/equipment longevity
- Facilitates security for key installation
- Reduced fire hazard
- Reduced noxious pests — insects, snakes and rodents

## Erosion, mud and dust stabilization

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

One of the key mechanisms by which turfs control soil erosion is through a superior capability to essentially absorb or trap and hold runoff water. A healthy turfed lawn absorbs rainfall 6 times more

effectively than a wheat field and 4 times better than a hay field; being exceeded in this important function only by a virgin forest (Watschke). This attribute is certainly important in enhancing ground water recharge.

The water use rate of turfgrasses is lower than most trees and shrubs.

## Heat dissipation

The overall temperature of urban areas may be as much as 10 to 12F warmer than nearby rural areas. Lawns through the cooling process of evapotranspiration serve an important function in dissipating the high levels of heat generated in urban areas.

Very strong contrast can be shown in terms of comparative dissipation of radiant energy from typical urban surfaces such as asphalt, concrete, bare soil, and turfs (Beard and Johns, 1985); as well as from bare soil and artificial turf.

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 (Johns and Beard, 1985).

## Noise and glare reduction

Turfs reduce noise, glare, and visual pollution problems. The rough surface characteristics function in noise abatement (Cook and Van Haverbeke) as well as in multi-directional reflection that reduces glare. Thus, turfs lower the harshness of unwanted noise and lessen the visual stresses of glare.

A grassed area of 70 feet distance on a roadside can abate obtrusive vehicle noises by 40%.

## Pollution Control

The dense plant canopy of mowed turfs 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 plus the pollutants, if proper landscape designs are used.

The extensive fibrous root system of turfgrasses contributes substantially to soil improvement through organic matter additions. 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.

## Nuisance pest and pollen control

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 these small animals seek haven in taller grass at locations more distant from the house, they also are less likely to invade the home.

The diverse ecosystem of the grass lawn serves as a source of food for birds.

## Economic contributions

Quality turfs are of economic importance in that they contribute to

increased property values and commercial appeal. Similarly, a well groomed lawn surrounding a factory or business is an asset in conveying a favourable "we care" impression to employees and the general public.

American consumers spent an estimated \$3.5 billion on outdoor power equipment products in 1987.

From a monetary standpoint, the turfgrass industry contributes in excess of US \$30 billion annually to the United States Economy (Cock-erham and Gibeault).

### Security

Roadside turfs are important in highway safety, as well as erosion control, in that they function as a stabilized zone for emergency stop-page of vehicles.

Turfs are utilized for soil and dust stabilization around airfield run-ways in order to prolong the operating life of engines. Smaller airstrips utilize turfgrasses as the runway surface itself.

### RECREATIONAL BENEFITS

- Enhances physical health of participants
- Serves as a safety cushion against impact injury
- Provides a low cost surface for outdoor sport and leisure activities
- Even home lawn care offers physical exercise

Many outdoor sports and recrea-tional activities utilize turfgrasses, including archery, badminton, baseball, cricket, croquet, field hockey, football, golf, hiking, horse racing, horseshoes, lawn bowling, lawn tennis, lacrosse, polo, rugby, shooting, skiing, soccer, softball, track and field, and volleyball.

Turfs provide a low cost cushion-ing effect that reduces injuries to the participants, particularly in the more active contact sports such as

football, rugby, and soccer (Gramckow). Turfs feel good to walk on. This resiliency con-tributes to healthy legs.

Artificial turfs have not duplicated the cushioning effect of turfgrasses and thus offer less safety to par-ticipants.

Turfgrasses offer the least expen-sive, safest form of outdoor surface for sports and recreation.

Also there is the entertainment dimension that spectators derive from sporting competitions played on turfs. The enjoyment and benefits of improved physi-cal/mental health derived from recreation and leisure activities on turfs are vital to a contemporary society, especially in densely popu-lated urban areas.

Home lawn owners derive the benefits of both physical exercise and therapeutic relaxation from the stresses of the work-place via activities involved in the actual care and grooming of lawns. There is great satisfaction in creating beauty within the landscape.

While some scorn its needs, others find lawn maintenance require-ments an excellent opportunity to enjoy reasonable exercise and a healthy mental diversion.

### • Therapeutic value

Better quality of life, especially in densely populated urban area-Thomas Jefferson wrote that com-munities "should be planned with an eye to the effect made upon the human spirit by being continually surrounded by a maximum of beauty.

Turfs provide beauty and attrac-tiveness that enhance the quality of life for human activities. These benefits are magnified when com-bined within the total landscape of trees, shrubs, and flowers.

How we see vegetation in our sur-rounding is basic to social stability and harmony. Ugliness is costly. Cities can be very dismal without green turfs in parks, beside boulevards, and surrounding homes and business. The result is a loss of productivity, more suscep-tibility to anxieties and mental dis-ease.

The clean, cool, natural green of turfs provides a pleasant environ-ment in which to live, work, and play. Such aesthetic values are of increasing importance to the dig-nity of the human spirit and the mental health of urban residents because of a rapid paced lifestyle and increasing urbanization.

### Calories are burned and muscles toned via many activities:

Task/Activity	Calories burned per hour
Digging	516
Mowing	458
Weeding	295
Raking	222

### ORNAMENTAL BENEFITS

- Compliments flowers, shrubs, and trees
- Enhances beauty and aesthetics
- Improves mental health
- Improves social harmony
- Improves work productivity

Properly maintained lawns and recreational turfs (1) contribute a diverse array of benefits that make turfgrasses one of the best friends of the urban environmentalists and (2) greatly enhance our quality of life.