Benefits of Turf in the Landscape

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WHO NEEDS TO KNOW?

Let's Define "Landscape"

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GRASS IS GOOD

So why the bad rap?

So why the bad rap?

- Water
- Fertilizer
- Mowing
- Pesticides
- Labor
- $$$

Some propose…

- Reducing or eliminate turf
- ↑ Use of native plants
- ↑ Use of ground covers
- Replacing with hardscaping


GRASS IS GOOD

Environmental Benefits

- Soil erosion control
- Air pollution control
- Carbon storage
- Cooling Effect
- Storm water reduction
- Oxygen production
- Heat dissipation
- Noise abatement

Soil Erosion Control

- Protects the soil
- ↑ infiltration
- ↓ wind & water movement

- filters water that percolates through the soil
- contributes organic matter
- highly efficient @ taking up nutrients

Storm Water Reduction

- Thin lawns 7.5x more runoff

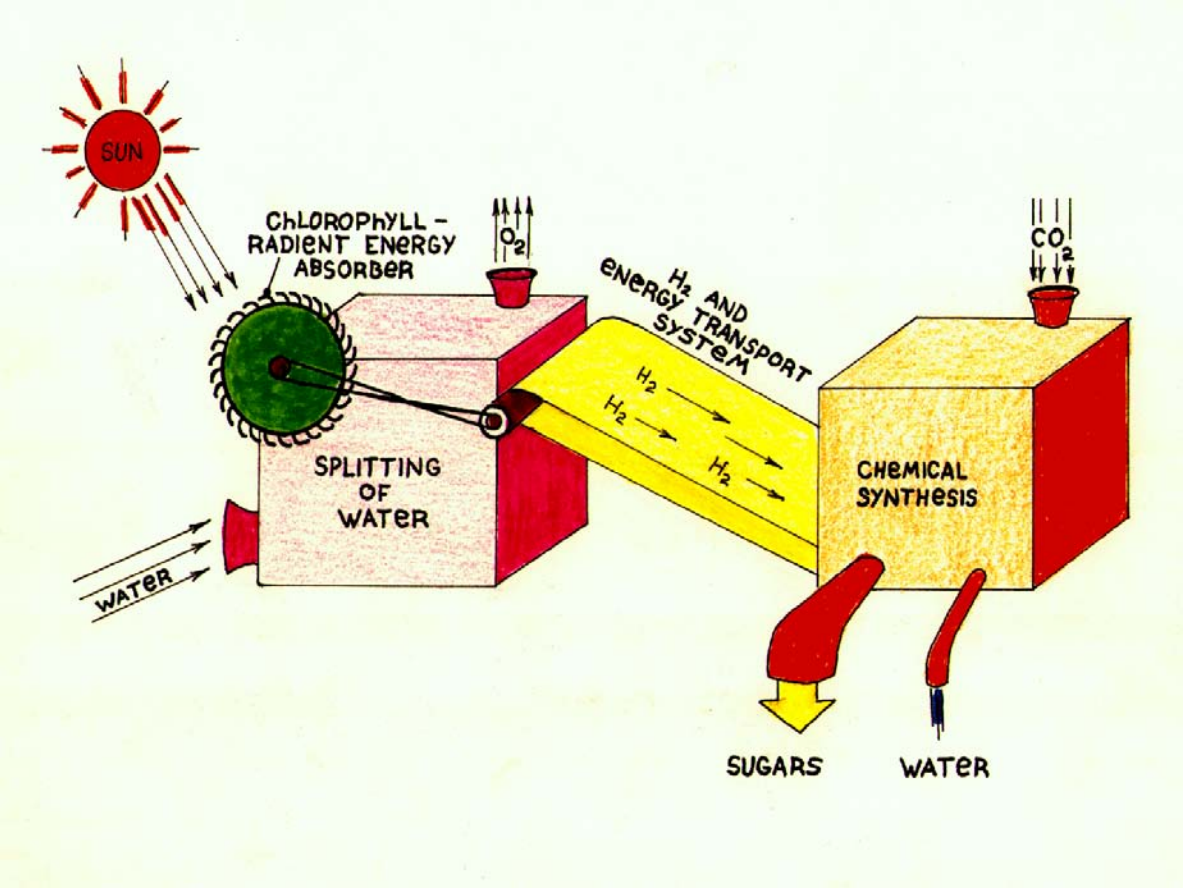
Air Pollution Control

Turf traps an estimated 12 million tons of dust & dirt that is released into the atmosphere each year

Dr. Thomas L. Watschke, Penn State University

Oxygen Production

- Photosynthesis
- Results



Oxygen Production

A 50’ x 50’ well-maintained lawn creates enough O_2 to meet the needs of a family of 4/day

Dr. Thomas L. Watschke, Penn State University

Carbon sequestration

- **Carbon dioxide** (CO_2) from the atmosphere is absorbed by trees, plants, grass and crops through photosynthesis, and stored as carbon in **biomass** (tree trunks, branches, foliage and roots) and **soils**.

- **"Sinks"** refer to forests, croplands, turf and grazing lands, and their ability to sequester carbon.

Carbon Storage

Lawns are a carbon sink. If clippings are left to decompose on their lawn, the U.S. lawn areas could store up to

37 billion lbs. C

Cristina Milesi, NASA Ames Research Center - 2006

Cooling Effect

The front lawns on a block of 8 average homes have the cooling effect of 70 tons of air conditioning

Maryland Turfgrass Survey 1996 – An Economic Value Study

Heat Dissipation

Grassed surfaces reduce temperature extremes by absorbing the sun's heat during the day and releasing it slowly in the evening, thus moderating temperatures.

Maryland Turfgrass Survey 1996 – An Economic Value Study

Temperature of Surfaces at BYU Practice Fields in June 2002 Average air temp 81.42°F

	Average Surface Temp between 7:00 am – 7:00 pm	
	Average	**High**
Soccer (synthetic	117.38°F	157°F
Football (synthetic)	117.04°F	156°F
Natural Turf	**78.19°F**	88.5°F
Concrete	94.08°F	
Asphalt	109.62°F	
Bare soil	98.23°F	

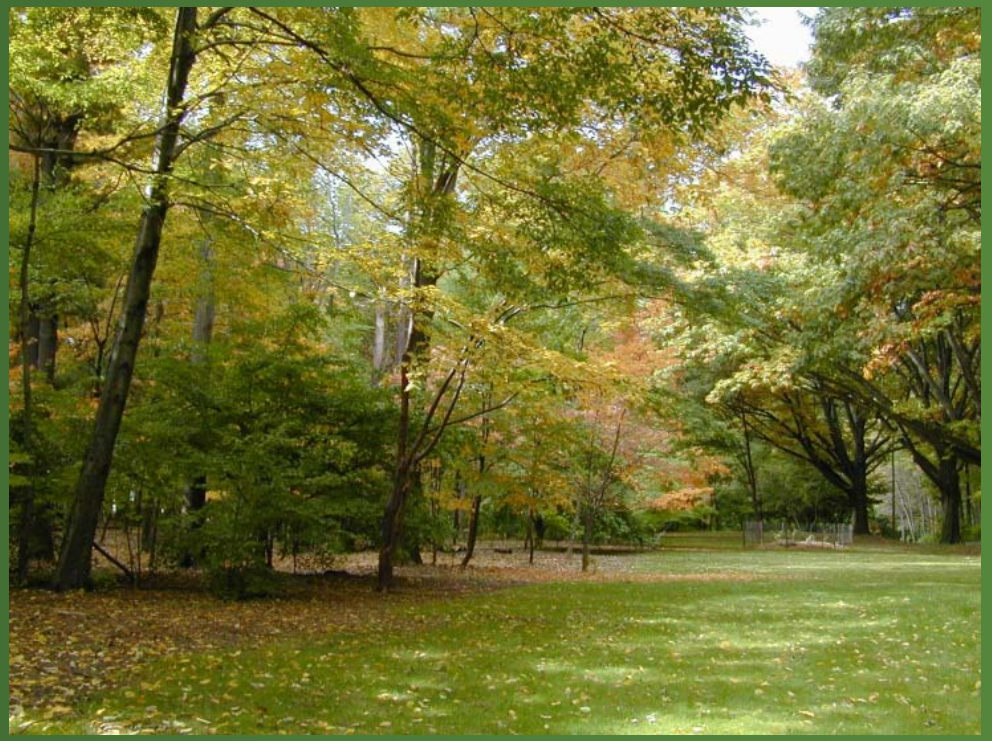
Synthetic Surface Heat Studies: C. Frank Williams and Gilbert E. Pulley
STMA Conference 2004

Abatement

- Noise level reduced
- Glare and light reflected

Health Benefits

- A natural place to recreate



Health Benefits

- Aids in stress reduction

Health Benefits

- Closely mown areas ↓ number of nuisance pests

Safety First

Impact Absorption Values for High School Athletic Fields vs Other Surfaces

Type of Surface	Impact Hammer Weight	
	0.5 kg	2.25 kg
	G max rating*	
High School athletic field	50-286**	33-167
Artificial turf	109-172	60-91
Frozen practice field	404	303
Tiled, concrete basement floor	1440	1280
Carpet & pad on tiled concrete floor	260	190
Carpet & pad on hardwood floor	86	134

* G max = maximum deceleration (harder surfaces have greater Gmax values

Rogers et al 1988

Economic Benefits

Improves property value

Increase property value

Source: The Lawn Institute

Increase property value

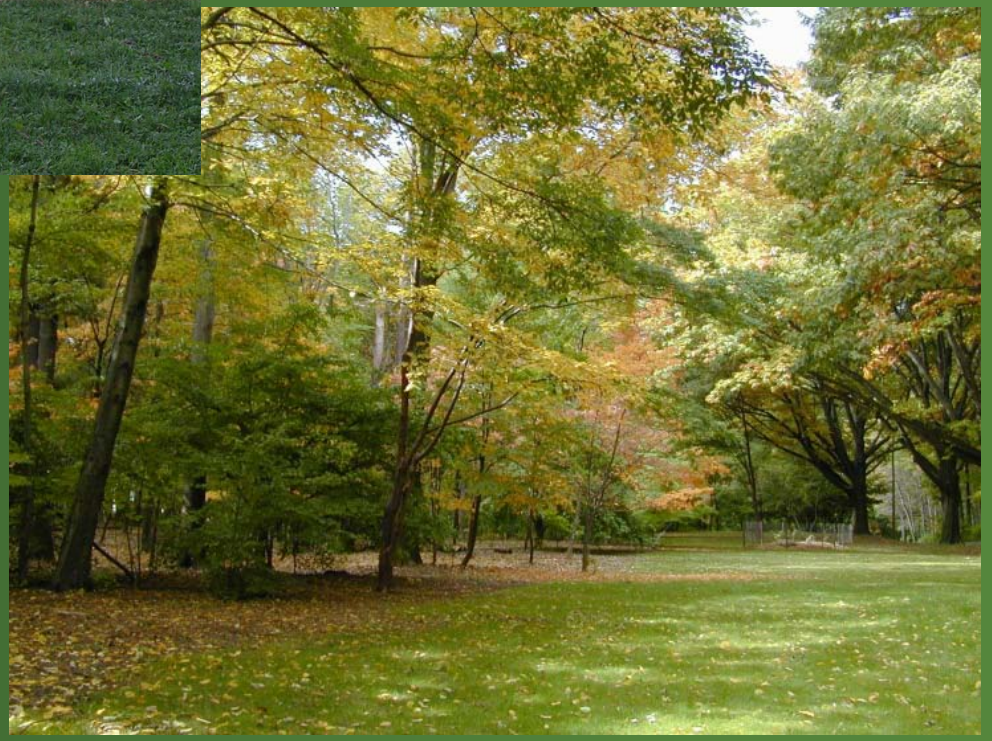
Source: The Lawn Institute

Community Benefits

- Beautifies properties…sense of pride
- A natural place to recreate


MONROE - WOODBURY
CENTRAL VALLEY
ELEMENTARY SCHOOL

Community Playing Fields



Community Parks

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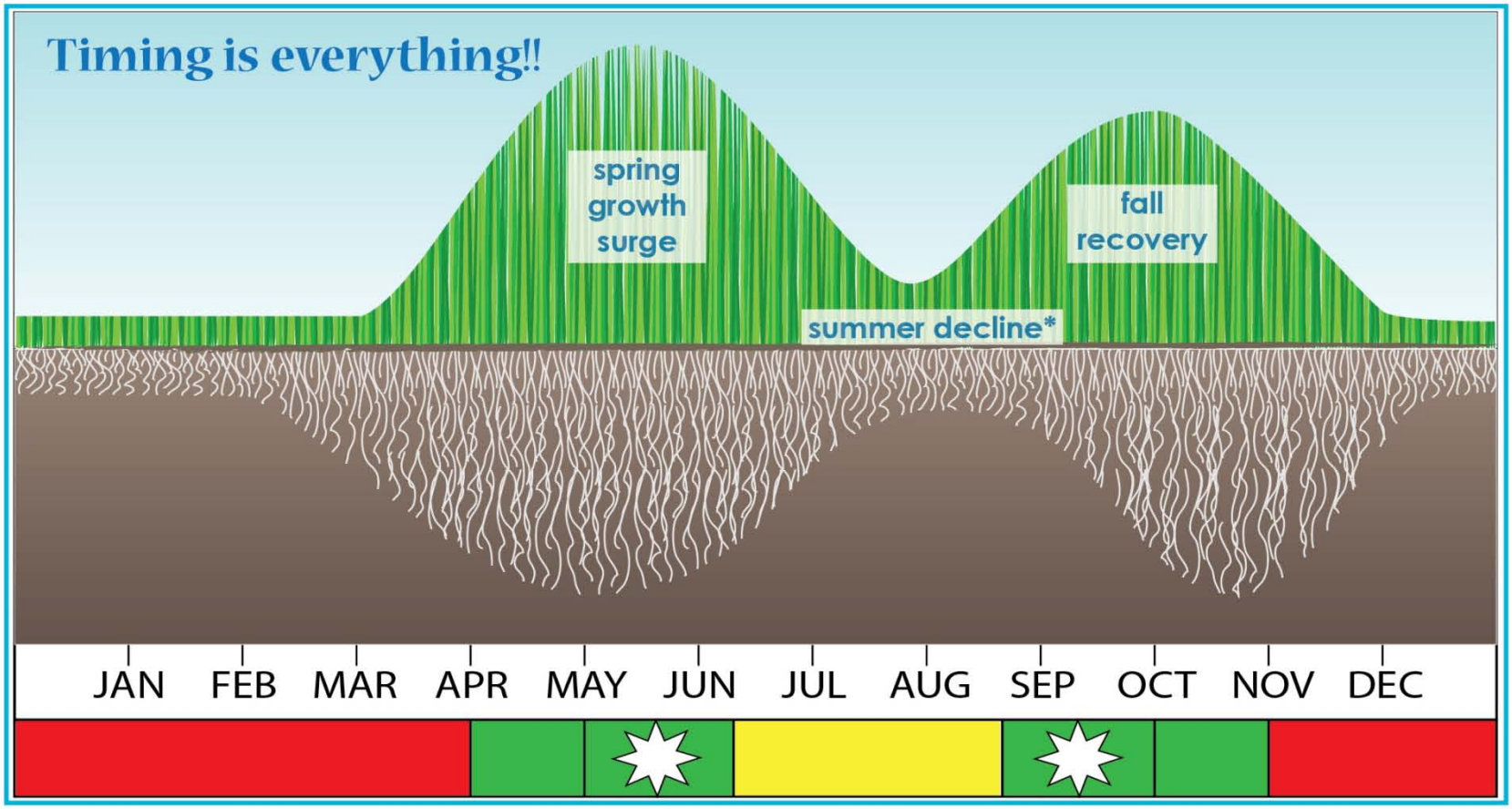
Grass uses lots of water

Grass requires lots of fertilizer



Fertilizer applications are prohibited at this time. Turf is not actively growing so fertilizer applications are not beneficial. The potential for fertilizer leaching into groundwater or running off into surface water is the greatest during these periods.	Fertilizing during this time of year is acceptable under the law. Lawns are under stress in the summer especially if not receiving any irrigation. Fertilizing during this period is less beneficial.
Fertilizing during this time of year is acceptable under the law.	Fertilizing at these times helps minimize water pollution and are the best times to get a green lawn.

* Adequate rainfall or irrigation can maintain growth and turf quality throughout the summer.

Grass requires pesticides to maintain quality

Grass requires lots of $$$ to maintain

Grass requires too much labor to maintain

How will you communicate the value/ importance of turf to your…

Different objectives call for different approaches


REFRESHMENTS
PEPSI

Maintain turf with the environment in mind

- Do it correctly
- Show how limited resources are being used wisely
- Identify areas where turf is not the best ground cover
- Focus on high profile areas to show your expertise

RESOURCES FOR YOU

- STMA: **Natural Grass Athletic Fields**
- The Lawn Institute: **Turfgrass Lawn Guide – Benefits of Turfgrass** (www.thelawninstitute.org)
- USDA-CSREES, et al: **Green Lawns – Promoting Environmental Stewardship** (www.growinggreenlawns.org)

SOURCES USED

- Drs. James B. Beard and Robert L. Green, **The Role of Turfgrasses in Environmental Protection and Their Benefits to Humans**, Journal of Environmental Quality, vol.23, no.3, May-June 1994