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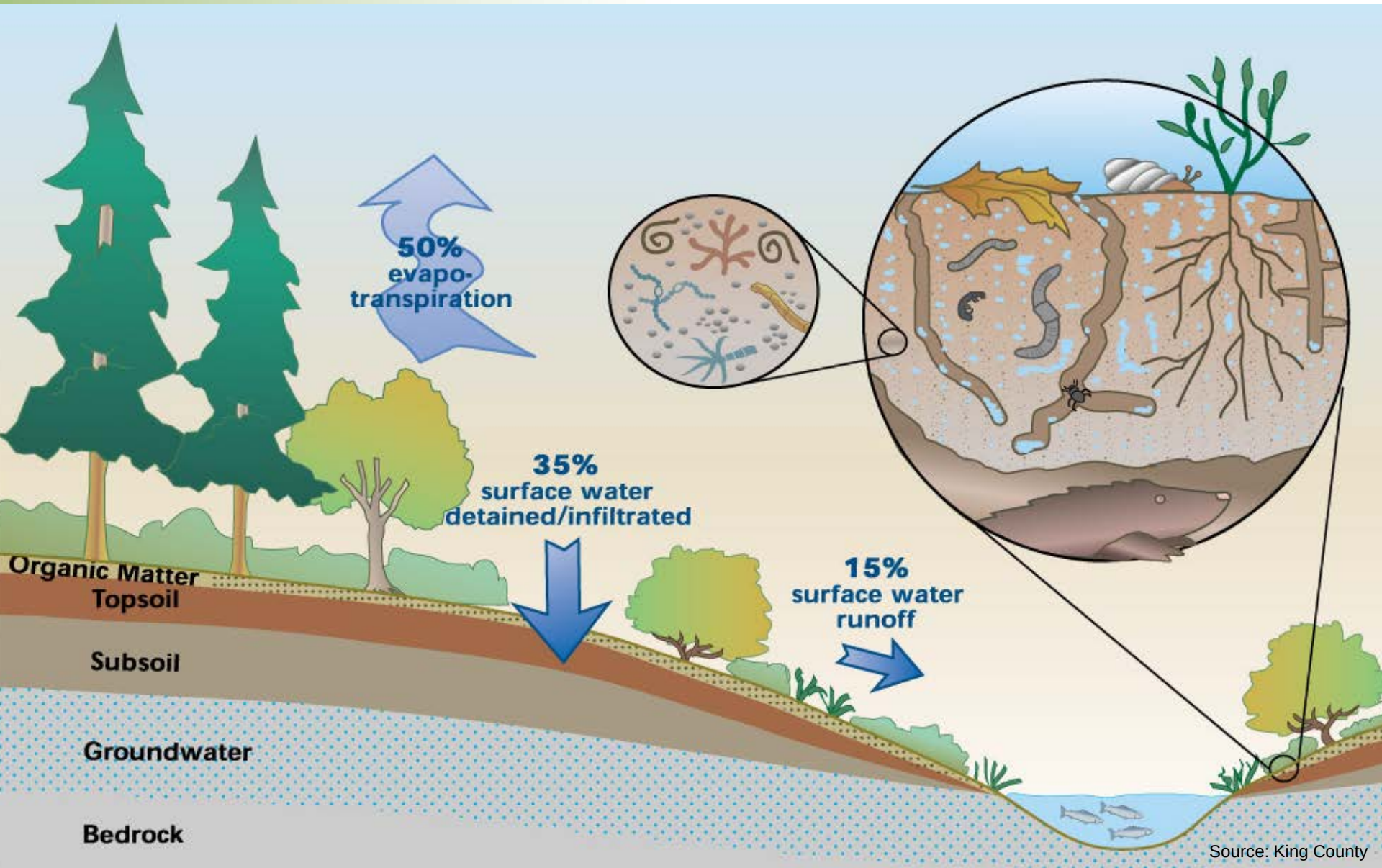
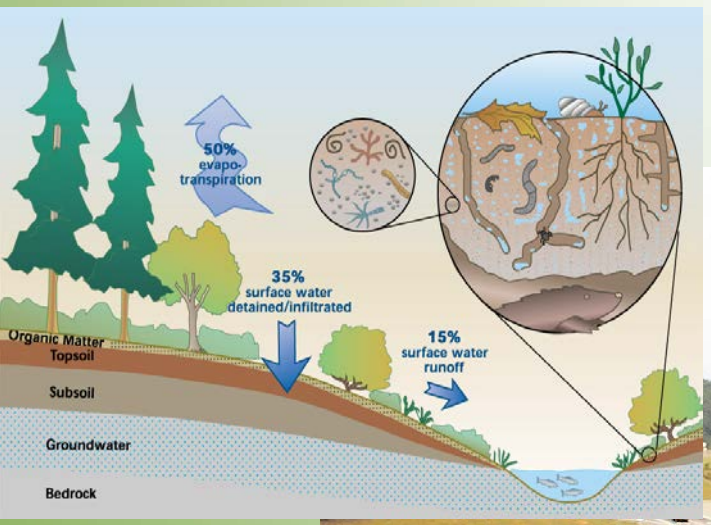
Compost & Rainfall Absorption

Natural Stormwater Management



Source: King County

Runoff + Erosion Control



Designed to: 1) dissipate energy of rain impact; 2) hold, infiltrate & evaporate water; 3) slow down/disperse energy of sheet flow; 4) provide for optimum vegetation growth

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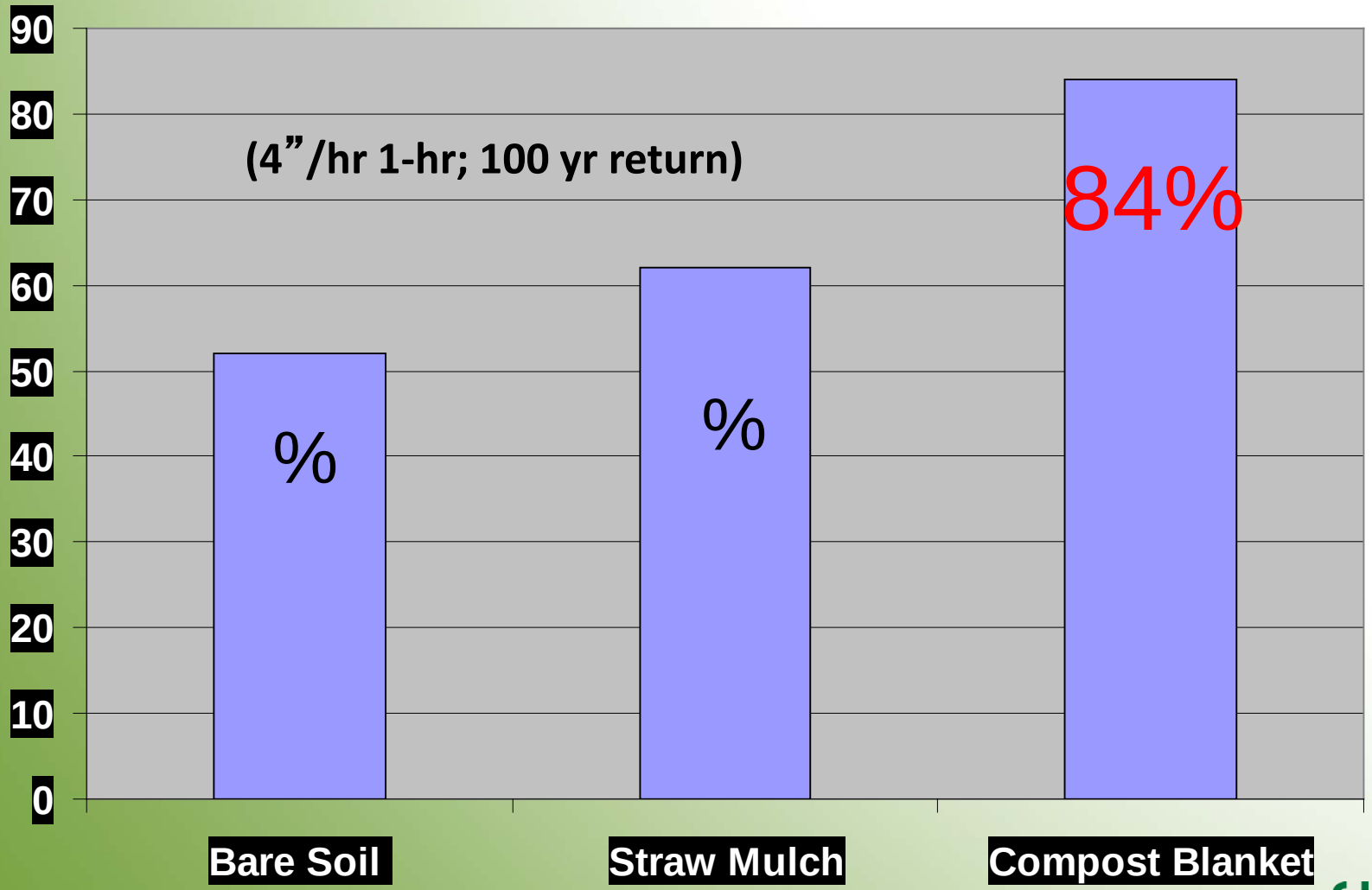
Rainfall Absorption



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Runoff Volume Reduction

Reduction	Influencing Factors	Reference
49%	Sandy clay loam, 10% slope, 1.5" blanket, 3.2 in/hr – 1 hr rain	Faucette et al, 2005
60%	Sandy clay loam, 10% slope, 1.5" blanket, 4.0 in/hr – 1 hr rain	Faucette et al, 2007
76%	Silty sand, 2:1 slope, 3" blanket, 1.8 in/hr - 2.4 hr rain	Demars et al, 2000
90%	Loamy sand, 3:1 slope, 2" blanket, 4.0 in/hr – 2 hr rain	Persyn et al, 2004

Peak Flow Rate Reduction

Reduction	Influencing Factors	Reference
36%	Sandy clay loam, 10% slope, 1.5" blanket, 3.2 in/hr – 1 hr rain	Faucette et al, 2005
42% **(30% relative to straw)**	Sandy clay loam, 10% slope, 1.5" blanket, 4.0 in/hr – 1 hr rain	Faucette et al, 2007
79%	Loamy sand, 3:1 slope, 2" blanket, 4.0 in/hr – 2 hr rain	Persyn et al, 2004

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Pollutant Load Reduction:

Compost Blanket vs Conventional Seeding

	Total N	Nitrate N	Total P	Soluble P	Total Sediment
Mukhtar et al, 2004 (seed+fertilizer)	88%	45%	87%	87%	99%
Faucette et al, 2007 (seed+fertilizer)	92%	ND	ND	97%	94%
Faucette et al, 2005 (hydromulch)	58%	98%	83%	83%	80%
Persyn et al 2004 (seed+topsoil)	99%	ND	99%	99%	96%

Runoff Curve Numbers

Watershed Surface	Curve Number*
Parking lot, driveway, roof	98
Commercial district	92
Dirt road	82
Residential lot: ¼ ac, ½ ac, 1 ac	75, 70, 68
Cropland	71-81
Pasture	61-79
Public green space	61-69
Woodland and forests	55-66
Brush >75% cover	48
Vegetated Compost Blanket	55

*Based Hydrologic Soil Group B

Reference: USDA SCS, 1986

Soil Erosion at 2:1

Erosion Control Practice	Soil loss @ 2 in/hr 20 min (0.67 in)		Soil loss @ 4 in/hr 40 min (2.0 in)		Soil loss @ 6 in/hr 60 min (4.0 in)	
	t/ac	% reduction	t/ac	% reduction	t/ac	% reduction
Bare soil	61	NA	137	NA	171	NA
CECB 2.0 in	0.02	99.8	46	66.8	48	71.9
CECB 1.0 in	0.09	99.1	53	61.1	53	68.9
CECB 0.5 in	29	52.1	96	30.1	72	57.7
Single-net straw	31	48.8	84	38.3	101	40.8
Single-net excelsior fiber	18	70.2	55	60.1	66	61.1
Double-net straw	23	62.7	62	54.7	76	56.0
Double-net coconut fiber	0.05	99.5	36	73.5	71	58.8
Tackifier	12	79.9	60	56.2	101	41.2
PAM	43	29.9	146	-6.8	158	7.7

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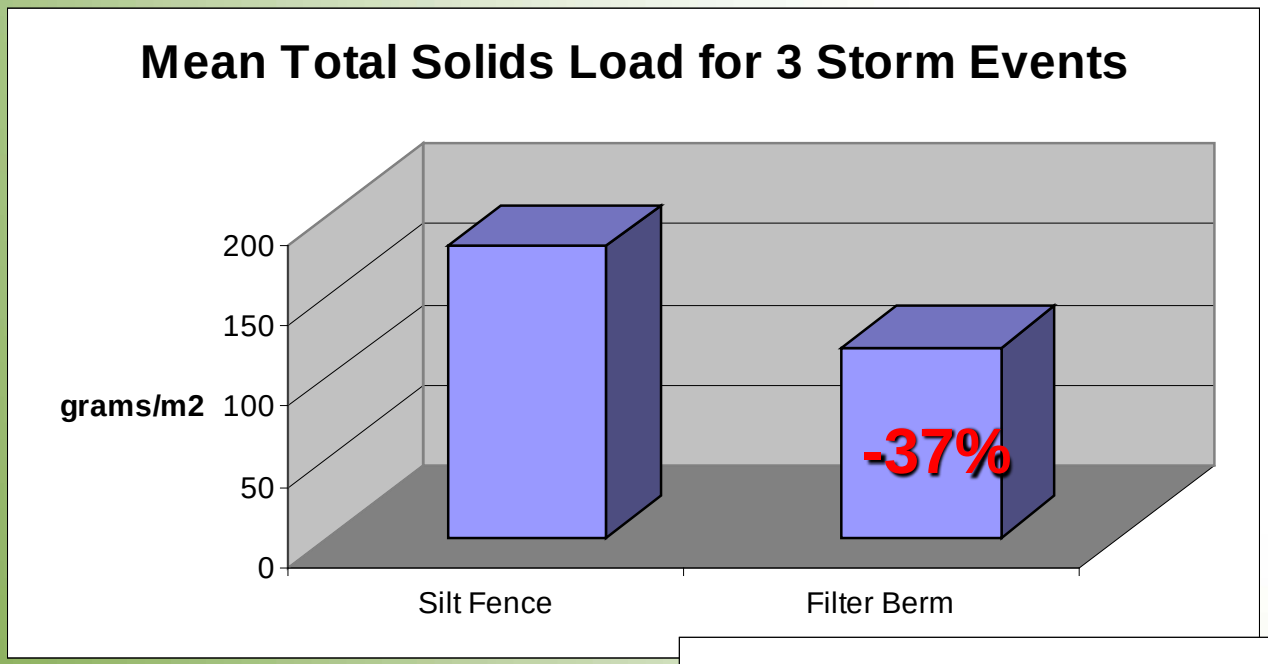
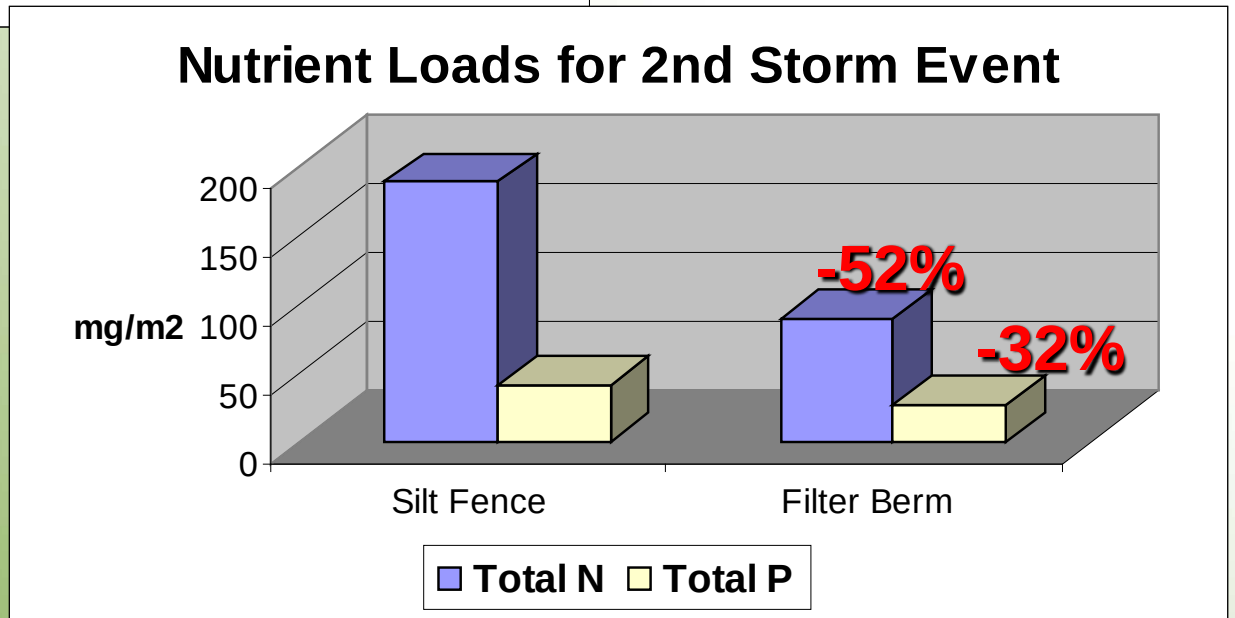
Silt Fence vs Compost Berm

The University of Georgia



✓All Plots used Hydromulching




Compost Blanket
Hydroseeding
Demo project in Atlanta
after 3” Storm Event

Design: CECB Thickness based on Slope & 24 Rainfall Total

Slope Angle (≤)	Rainfall = 1.0 in	Rainfall = 2.0 in	Rainfall = 4.0 in
4:1	½ in	2 in	2 in
3:1	½ in	1 in	2 in
2:1	1 in	1 in	1 in

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Total Soil Loss

The University of Georgia

Hydromulch vs Compost Blanket:
Two 3”/hr storm events

- ✓Day 1 = **2,750 & 1,230 lb/ac**
- ✓3 mo = **1,960 & 115 lb/ac**

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RECP + Hydromulch

Compost Blanket

Compost Fills in the Low Spaces

The *Sustainable* BMP

- 100% Recycled (compost)
- Bio-based, organic materials
- Locally manufactured
- Reduces Carbon Footprint
- Uses Natural Principles
- (Natural Capital & Ecosystem Services)
- High Performance

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