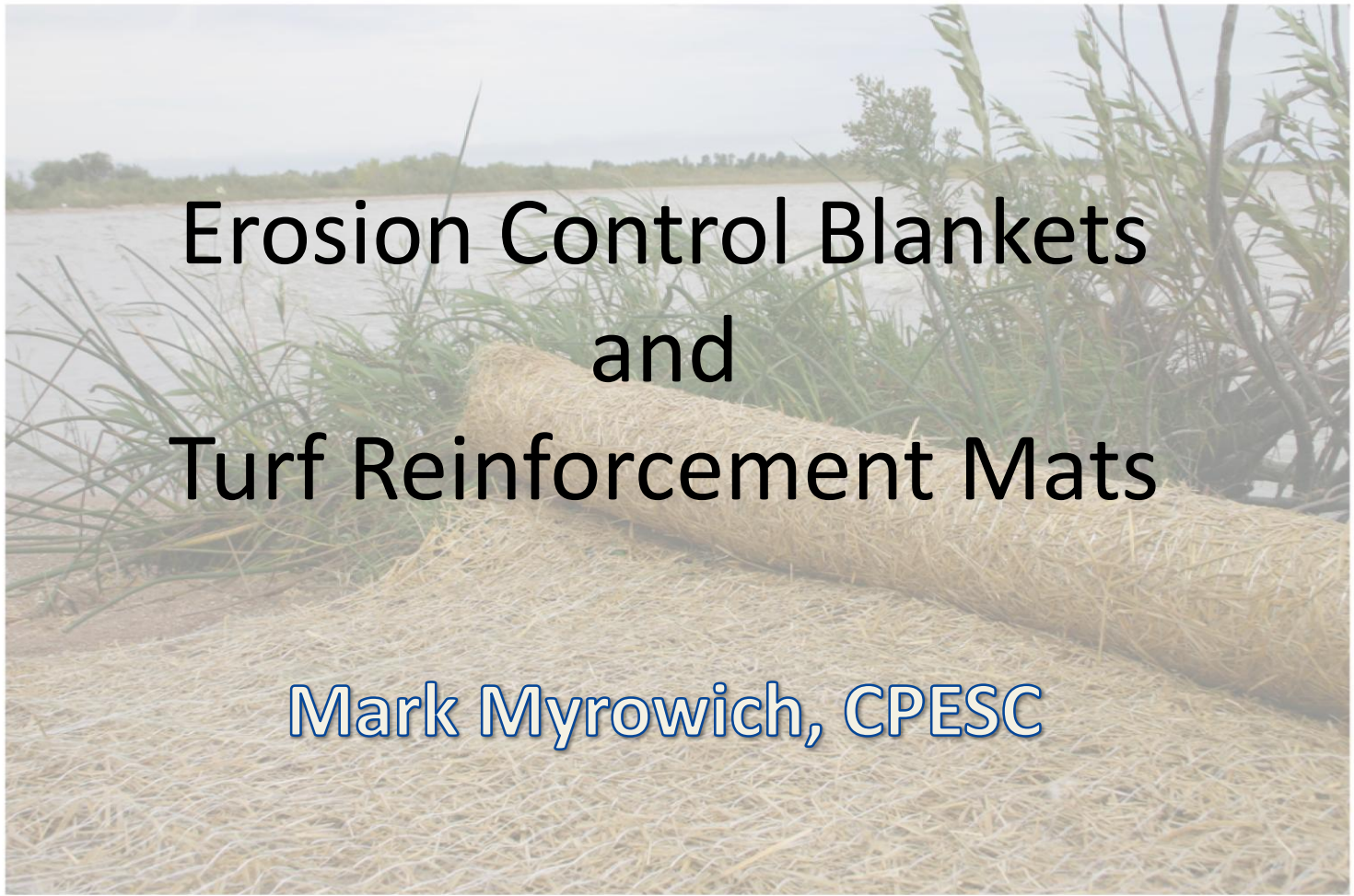
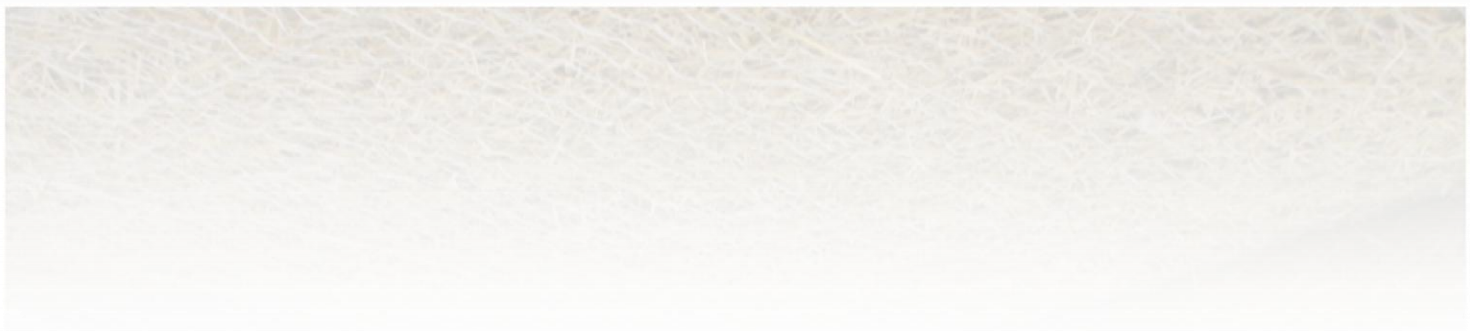
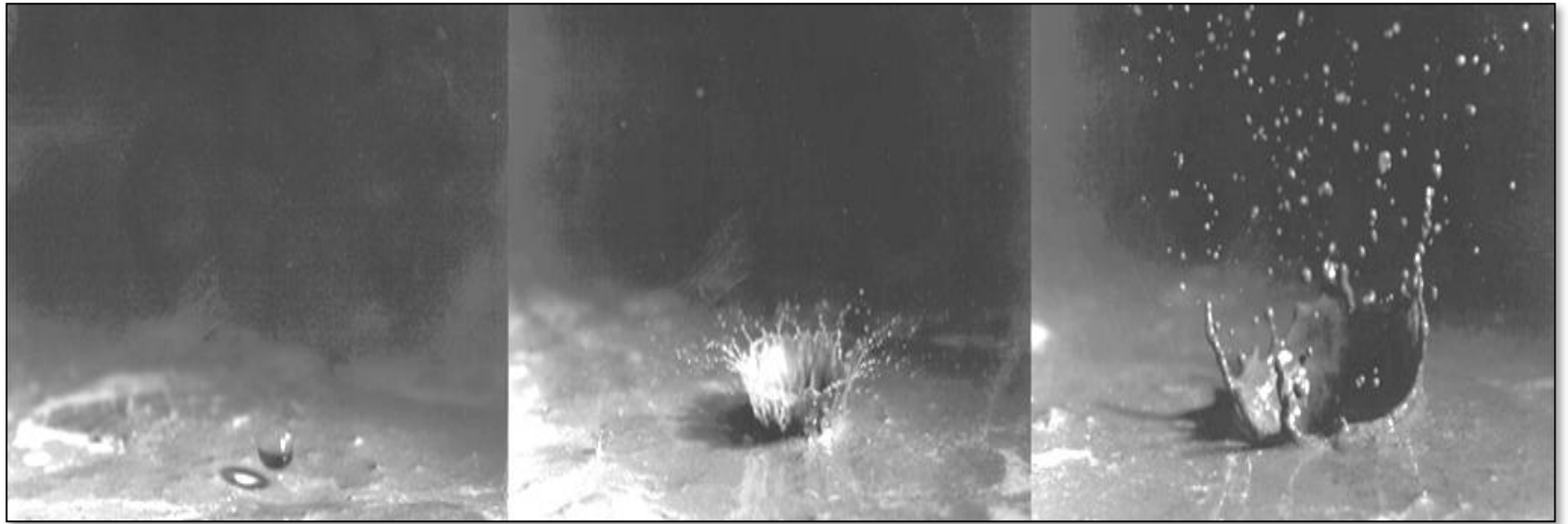


A photograph of a body of water, likely a lake or river, with reeds and other aquatic plants in the foreground. A roll of straw erosion control blanket is lying on the ground in the foreground. The text "Erosion Control Blankets and Turf Reinforcement Mats" is overlaid on the image.

Erosion Control Blankets and Turf Reinforcement Mats

Mark Myrowich, CPESC









Erosion Control Blanket (ECB)

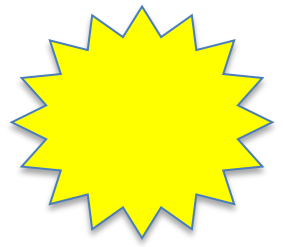
- temporary degradable RECP
- composed of processed natural or polymer fibers mechanically, structurally or chemically bound together to form a continuous matrix
- netting types can be matched to the job site requirements



ECB Degradation

Because ECBs are temporary degradable materials, they are often manufactured from netting(s) that are either photodegradable or biodegradable. While the matrix is usually biodegradable.

Photodegradable



The process where a material is chemically degradable by the action of light.

Biodegradable

Capable of being broken down into innocuous products by the action of living, things such as microorganisms.

Butt of a Bug

-

That's Bio
Dude





Product Nomenclature

S = Straw

C = Coconut

P = Polypropylene fiber

3 = 300 G/m² (1/2 lb/yd²)

4 = 400 G/m² (3/4 lb/yd²)

1 = Net on One Side **2** = Net on Two Sides

UVD = Ultra Violet Rapid Degradable <3 Months

BD = Biodegradable jute netting

Temporary Degradable ECBs

*Single Net Short-Term
& Ultra-Short Term*

*Double Net Short-Term
& Ultra-Short Term*

S - STRAW SERIES

Functional Longevity

< 3 Months	<1 Year
S31 UVD S32 UVD	S31 S32







Erosion Control
BLANKET

S - STRAW SERIES

C- factor

S31	S32
0.03	0.005

Shear Strength in lbs/ft²

S31	S32
1.5	1.75





ECBs Provide Immediate Cover

The image shows a residential area with a large, sloping hillside in the foreground. The hillside is covered with a thick layer of straw mulch, which is a common method for erosion control. The mulch is a light brown color and is applied in a way that covers the entire slope. In the background, there are several houses, including a large white house with a balcony and a smaller brown house. A person is visible on the left side of the hill, working on the mulch. The sky is clear and blue.







Temporary Degradable ECBs *Double*
Net Extended - Term



SC - STRAW COIR SERIES

Functional Longevity

1-2 Years

SC32

70% STRAW

30% COIR





Erosion Control
BLANKET

SC - STRAW COIR SERIES

C- factor

SC32

0.002

lbs/ft²

SC32

2.00



Dry Climates = Longer Vegetation Establishment

1 – 2 year
Longevity

Temporary Degradable ECBs *Double*
Net Long - Term



Erosion Control
BLANKET

C - COIR SERIES

Functional Longevity

1-3 Years
C32 100% COIR





Erosion Control
BLANKET

C - COIR SERIES

C- factor

C32

0.001

lbs/ft²

C32

2.25









ECBs Provide Immediate Cover



ECBs Enhance Vegetation Establishment



Erosion Control
BLANKET

100% Biodegradable ECBs

Why Biodegradable

- Environmentally friendly
- Wildlife friendly
- More consistent degradation for all environments
- Better contouring to soil surface

Cross-lay/Basket Weave



Leno Woven Net



Why Leno Weave!

- Improved mechanical stability of nets
- Improved fiber retention
- Improved tensile strength







Big Daddy Rolls



**16 Foot Wide
Bio Degradable Blanket**

Today's...

**Environmental
Choice**



**Contractor
Grade**

Available in

- **Straw**
- **Straw/Coconut**
- **Coconut**



**LESS
Overlap**

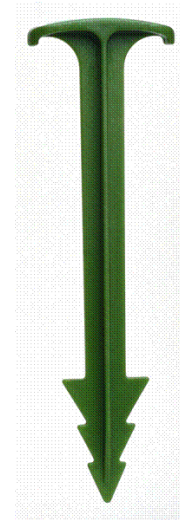


Erosion Control
BLANKET

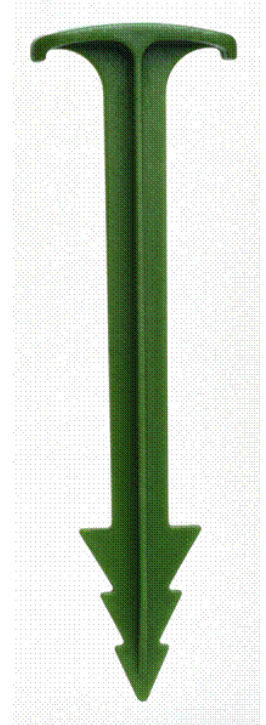
GreenStakes™

ASTM D6400 – biodegradability tested

Longevity = 24 months.



4 inch



6 inch





- Photo degradable vs Bio degradable
- Cover factor reduces rainfall impact
- Shear Stress increases in channels
- Longevity of Blanket should be greater than vegetation establishment.



Erosion Control
B L A N K E T

Permanent

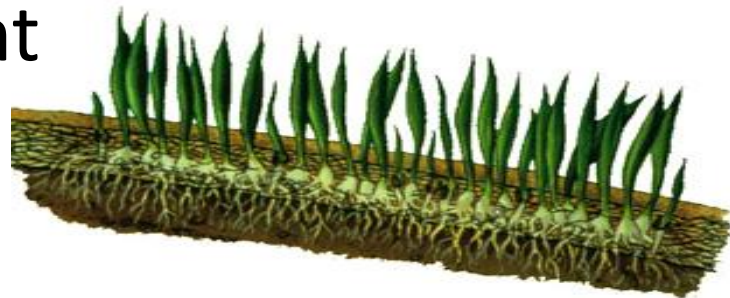
Turf Reinforcement Mats (TRMs)



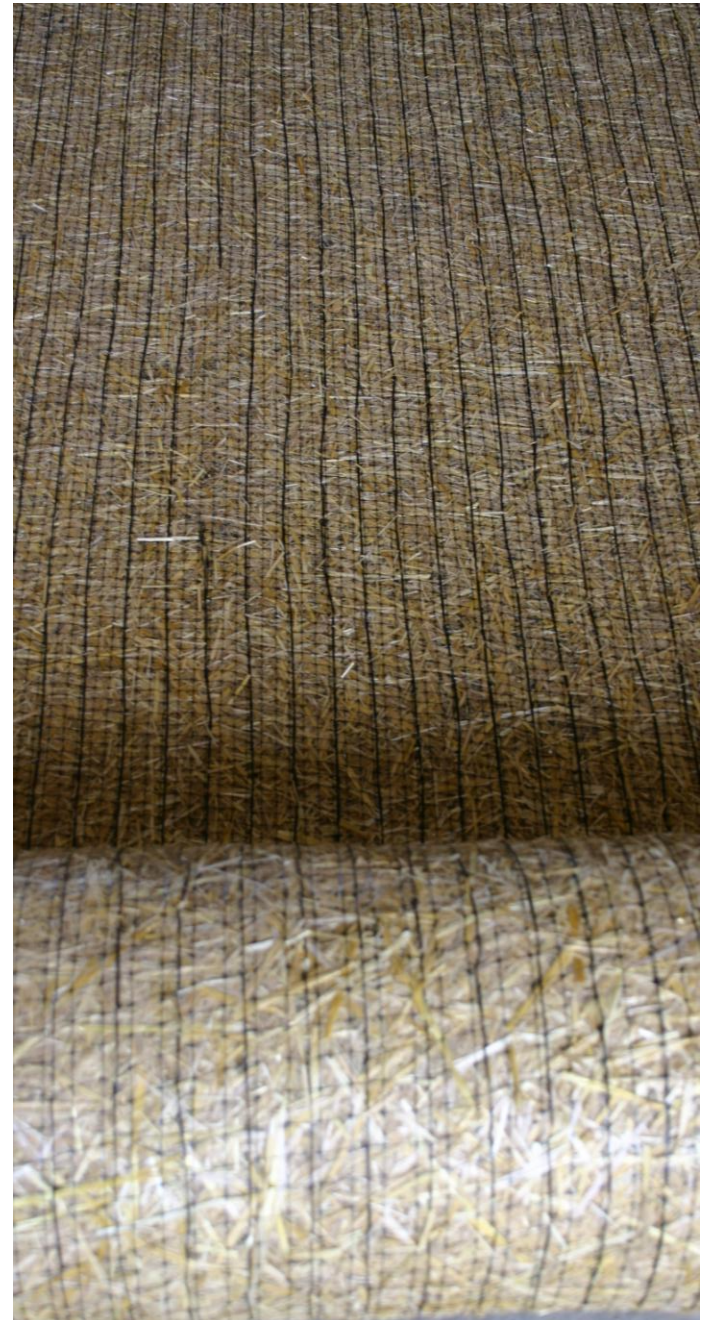


Turf Reinforcement Mat (TRM)

A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh and/or other elements, processed into a **permanent, three-dimensional matrix** of sufficient thickness.



- TRMs, which may be supplemented with degradable components, are designed to impart immediate erosion protection, enhance vegetation establishment and provide long-term functionality by permanently reinforcing vegetation during and after maturation.



- Note: TRMs are typically used in hydraulic applications, such as high flow ditches and channels, steep slopes, stream banks, and shorelines, where erosive forces may exceed the limits of natural, unreinforced vegetation or in areas where limited vegetation establishment is anticipated.



Functions Of TRMs

- Immediate unvegetated erosion control
- Enhance vegetation establishment
- Supplement erosion control once vegetation is established
- Reinforce the vegetation to enhance its resistance to erosive forces

Many Variety of Turf Reinforcement Mats

- Know the application
 - Hydraulics
 - Agronomics
- Know the products
- Gather data on the products
- Select and specify the appropriate cost-effective product

The Products

- Know the products
 - Benefits
 - Weaknesses
- ErosionControlBlanket TRMs



PS42

TRM

Composition of
67% Polypropylene
& 33% Agricultural Straw

3/4 lbs per sq. yard (400g/sq. m.)

Top & Bottom UV Stabilized
Polypropylene Netting

Permanent TRM

Extremely Durable

Can be applied up to 0.5:1 Slope

*Find Out
More!*



www.ErosionControlBlanket.com

Back

PC42

TRM

Composition of
67% Polypropylene
& 33% Coconut Fiber

3/4 lbs per sq. yard (400g/sq. m.)

Top & Bottom UV Stabilized
Polypropylene Netting

Permanent TRM

Extremely Durable

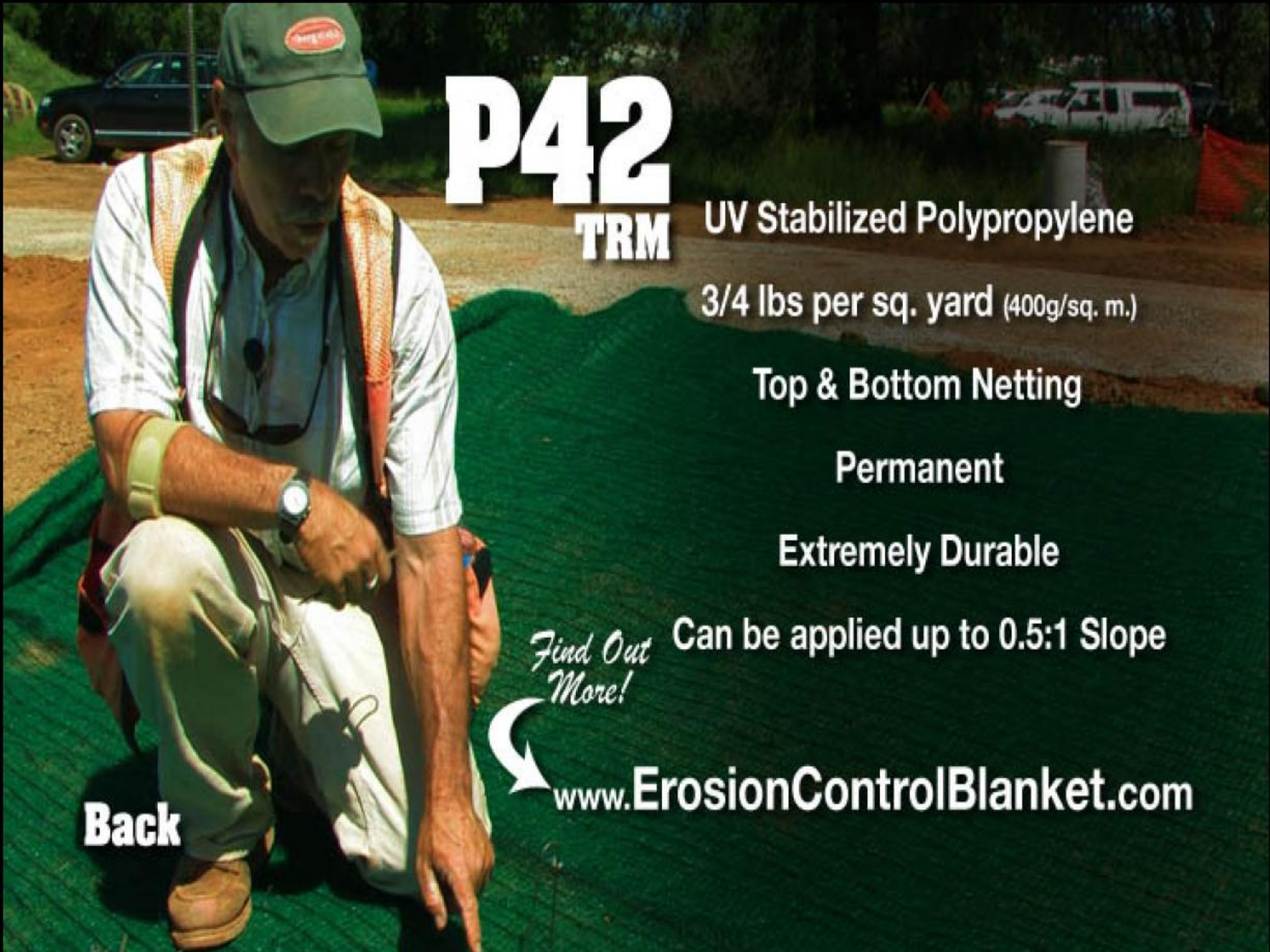
Can be applied up to 0.5:1 Slope

*Find Out
More!*



www.ErosionControlBlanket.com

Back



P42 TRM

UV Stabilized Polypropylene

3/4 lbs per sq. yard (400g/sq. m.)

Top & Bottom Netting

Permanent

Extremely Durable

Can be applied up to 0.5:1 Slope

*Find Out
More!*

 www.ErosionControlBlanket.com

Back

The Benefits

Features of the PS42 & PC42 TRMs	Why it's important!
$\frac{1}{4}$ lb/yd ² of natural fiber matrix	Cost-effective immediate erosion control. Excellent water absorption – reduced runoff and enhanced seed germination. Choice of functional life depending on time required for vegetation establishment - Straw – up to 12 months - Coconut – up to 36 months - Poly – greater than 36 months
$\frac{1}{2}$ lb/yd ² of synthetic fibers	Provide permanent structure for turf reinforcement. Permanent fibers for greater than 36 months of immediate erosion control and mulching. Fibers remain after organics degrade to enhance permanent cover for erosion control.
UV stabilized synthetic netting	High tensile strength nettings allow for extremely durable products for use on applications exposed to highly erosive conditions like high flow channels, shorelines, and steep slopes.
UV stabilized polyp stitching on 1.5 inch centers	Mechanical retention of fibers improves product durability and performance. Permanent mechanical bonding of turf reinforcement structure.

Look At Application Requirements

- What are the hydraulics
 - Application type
 - Erosion potential
- Agronomic
 - Vegetation type
 - Expected density
 - Hydraulic parameters afforded by the vegetation

Unvegetated Agronomic Benefits

- Random fibers provide exceptional
 - Seed and soil protection/cover
 - Mulching capabilities – enhanced vegetation establishment
- The addition of organic fibers in the PS42 and PC42 provide even greater mulching capabilities
 - Water absorption
 - Regulation of heat at the soil surface
 - Rapid vegetation establishment
 - Denser stand of vegetation
 - Quicker achievement of vegetated performance levels

Vegetated Hydraulic Benefits

- Shear stress of $\sim 6\text{-}10 \text{ lbs/ft}^2$
(288 - 480 Pa)
- Permissible velocities up to 16
ft/s (4.9 m/s)
- Permanent synthetic fibers
 - Permanent structure (> 0.25
inches thick)
 - Vegetation reinforcement
 - Ground cover to assist
vegetation with cover between
plants
 - Consistent mechanically
stabilized fibers. Hence no need
for thatch layer to form for final
erosion control

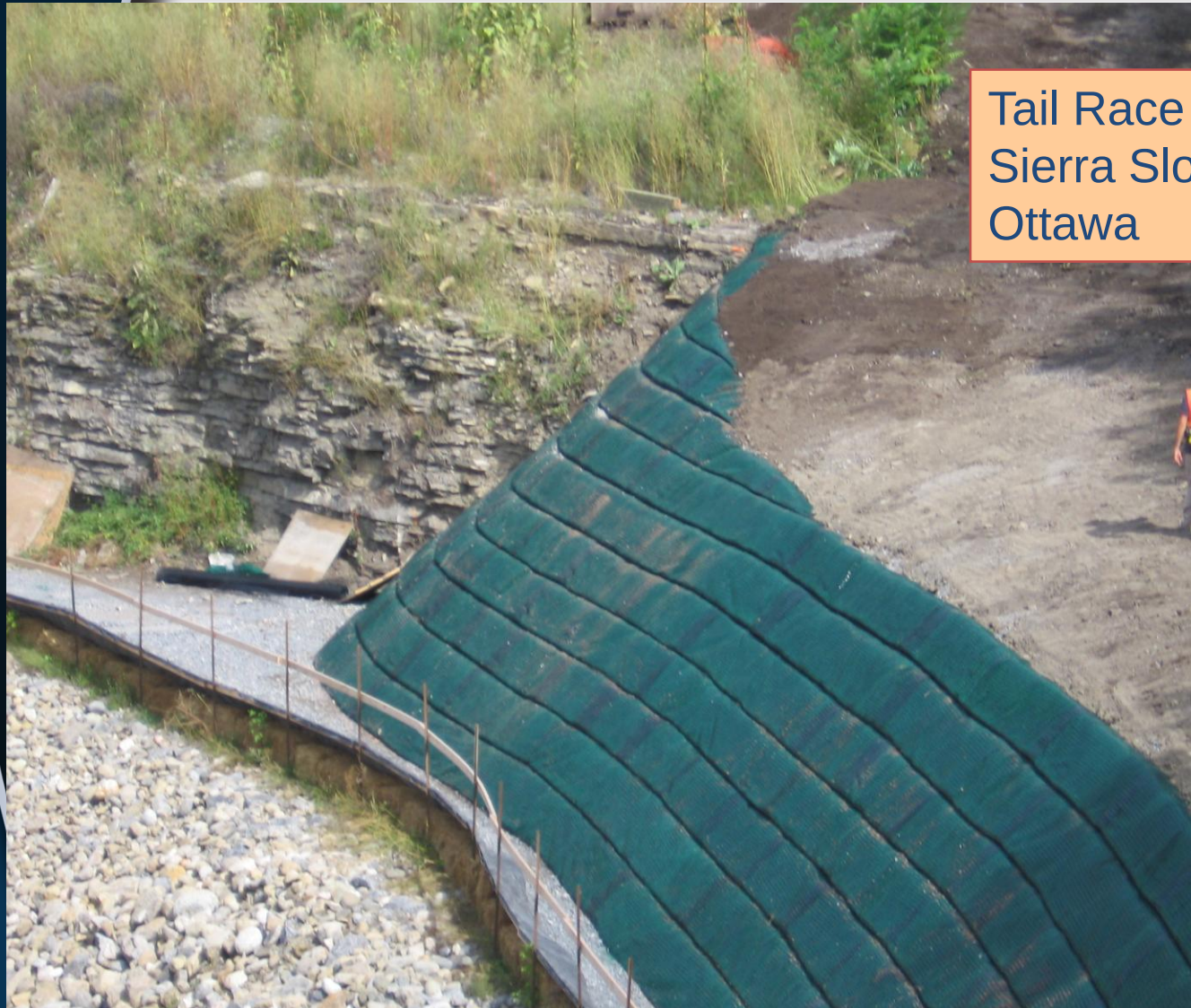
Barrie Ontario





Higher Velocity Areas

Canada's leader of complete geosynthetic solutions since 1973



Tail Race Project
Sierra Slope 45 deg
Ottawa

Tail Race Slope Completed 2007



Sierra Slope, Wrapped Face
45 Degrees



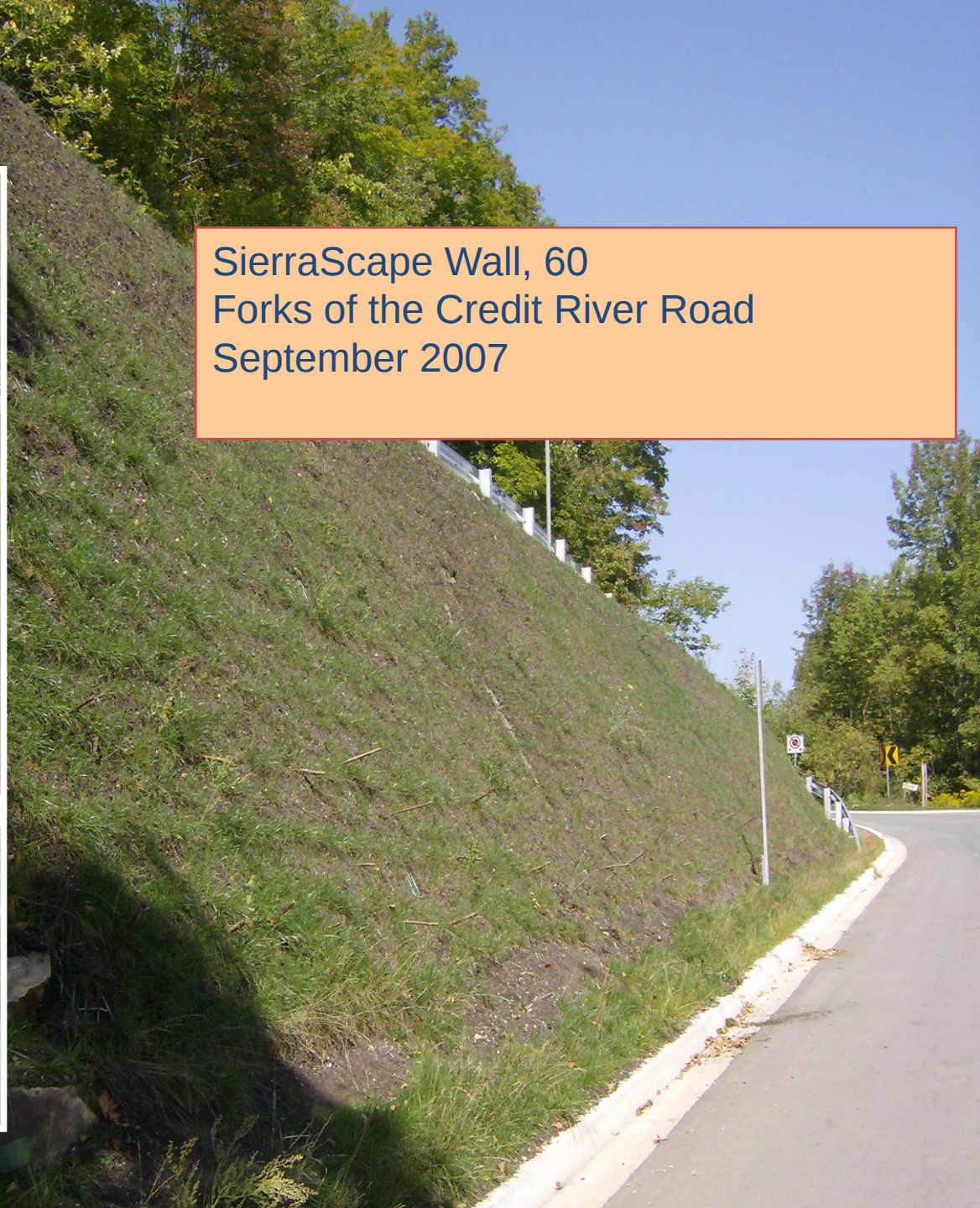
SierraScape Slope, 60
Forks of the Credit River Road
October 2006



Canada



SierraScape Wall, 60
Forks of the Credit River Road
September 2007



Questions?