

# Best Management Practices for Stream and Corridor Restoration

Kings River Watershed  
Project 06-500 FY 2006  
CWA Section 319 (h)

Kings River Watershed Partnership \* Madison County Conservation District  
Carroll County Conservation District \* Arkansas Game and Fish Commission  
Arkansas Natural Resources Commission



# Goals and Objectives

Demonstrate and document stream restoration practices to be shared with landowners in order to reduce the total amount of sediment and associated nutrients entering the Kings River Watershed.

- A. Geomorphic, chemical and benthic macroinvertebrate monitoring
- B. Education and Outreach
- C. Streambank restoration demonstration



## Year 1

- Geomorphological Survey
- Aquatic Macroinvertebrate Monitoring, Event 1 & 2
- Monthly Chemical Monitoring
- KRWP Website
- Secondary Education Modules
- Demonstration Workshops

## Year 2

- Streambank Restoration
- Aquatic Macroinvertebrate Monitoring, Event 3 & 4
- Monthly Chemical Monitoring
- Landowner's Handbook
- Educational Workshops

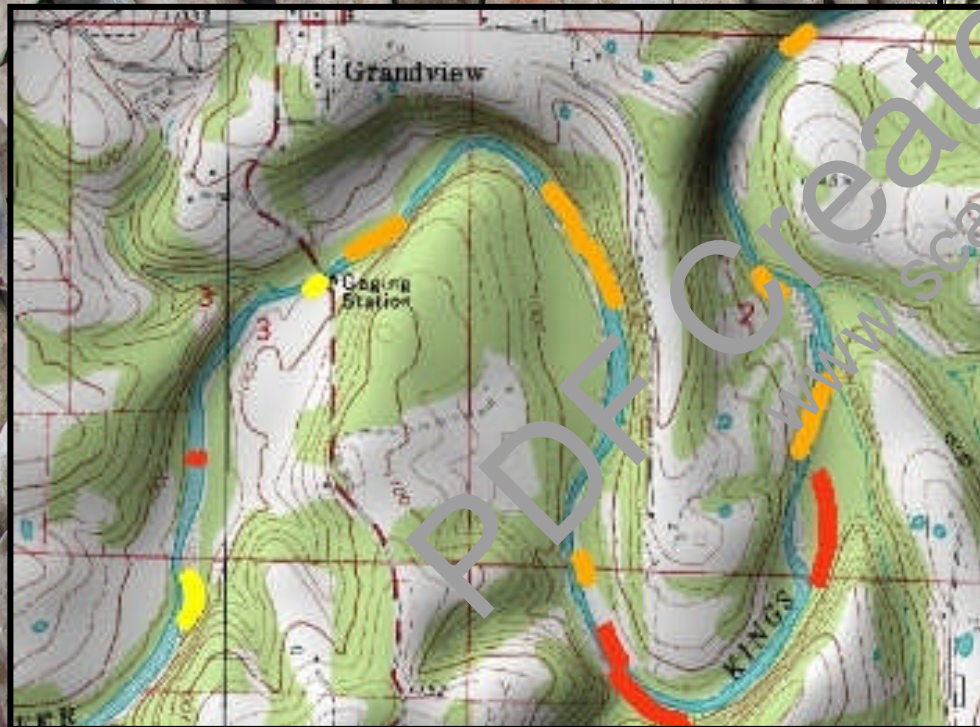


# Survey of Streambank Erosion

- 85 miles of Kings and Osage
- 203 sites surveyed using BEHI
- 17.60 miles of eroded streambank

## BEHI Ranking

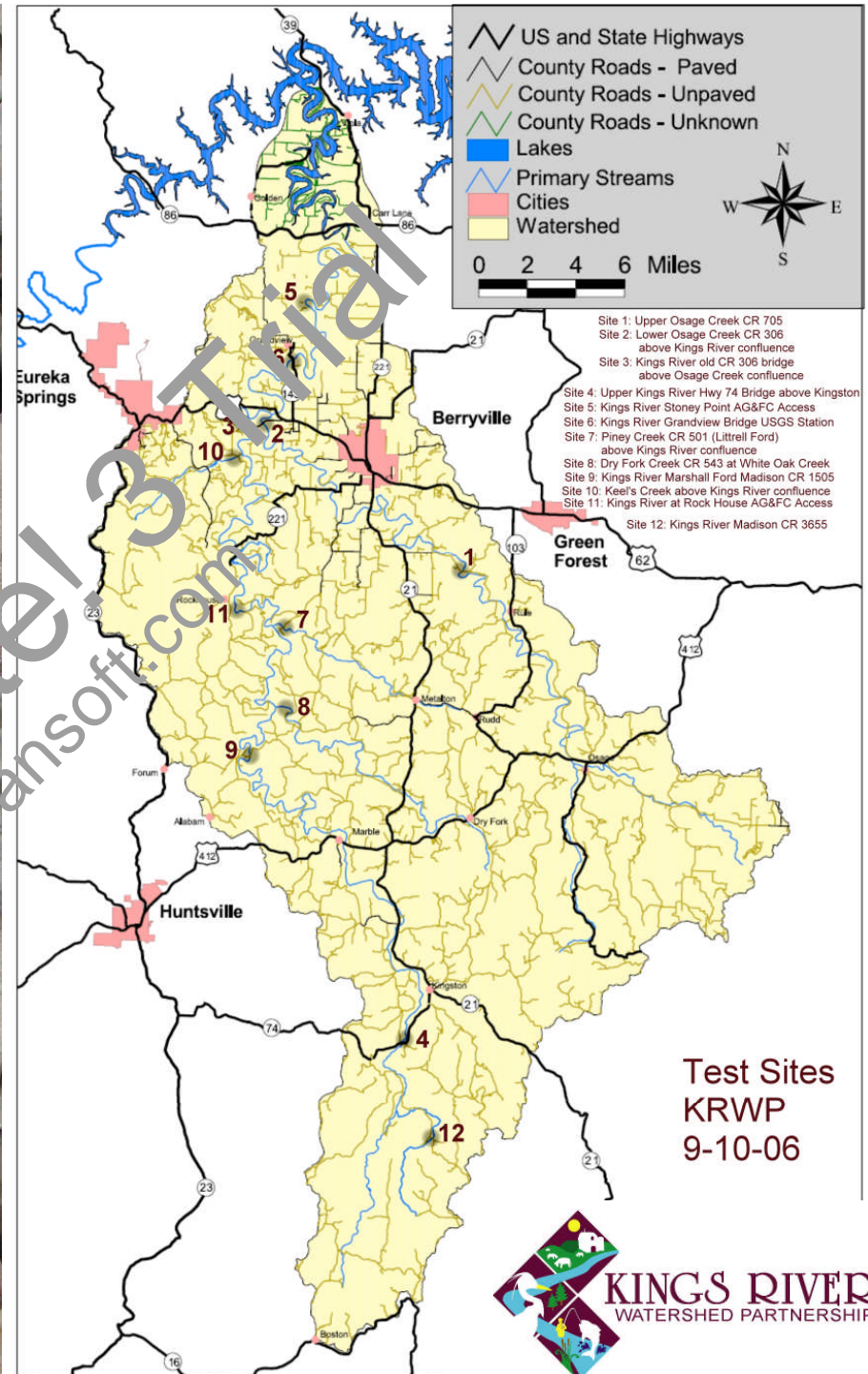
- Extreme
- Very High
- High



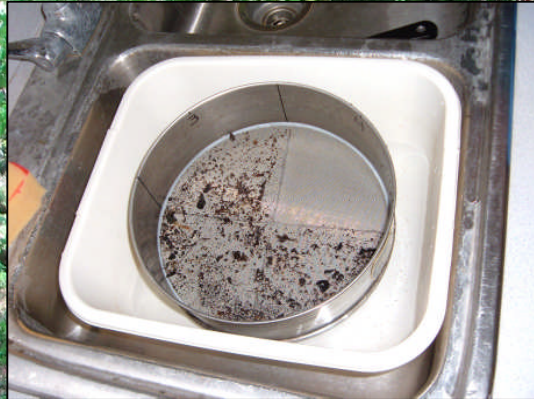
# Chemical Monitoring

Dissolved Oxygen	pH
Total Dissolved Solids	Hardness
Phosphate-phosphorus	Alkalinity
Water/Air Temperature	Turbidity
Nitrate-nitrogen	

- Monthly testing at 10 sites
- Duplicate sampling twice per year with AWRC



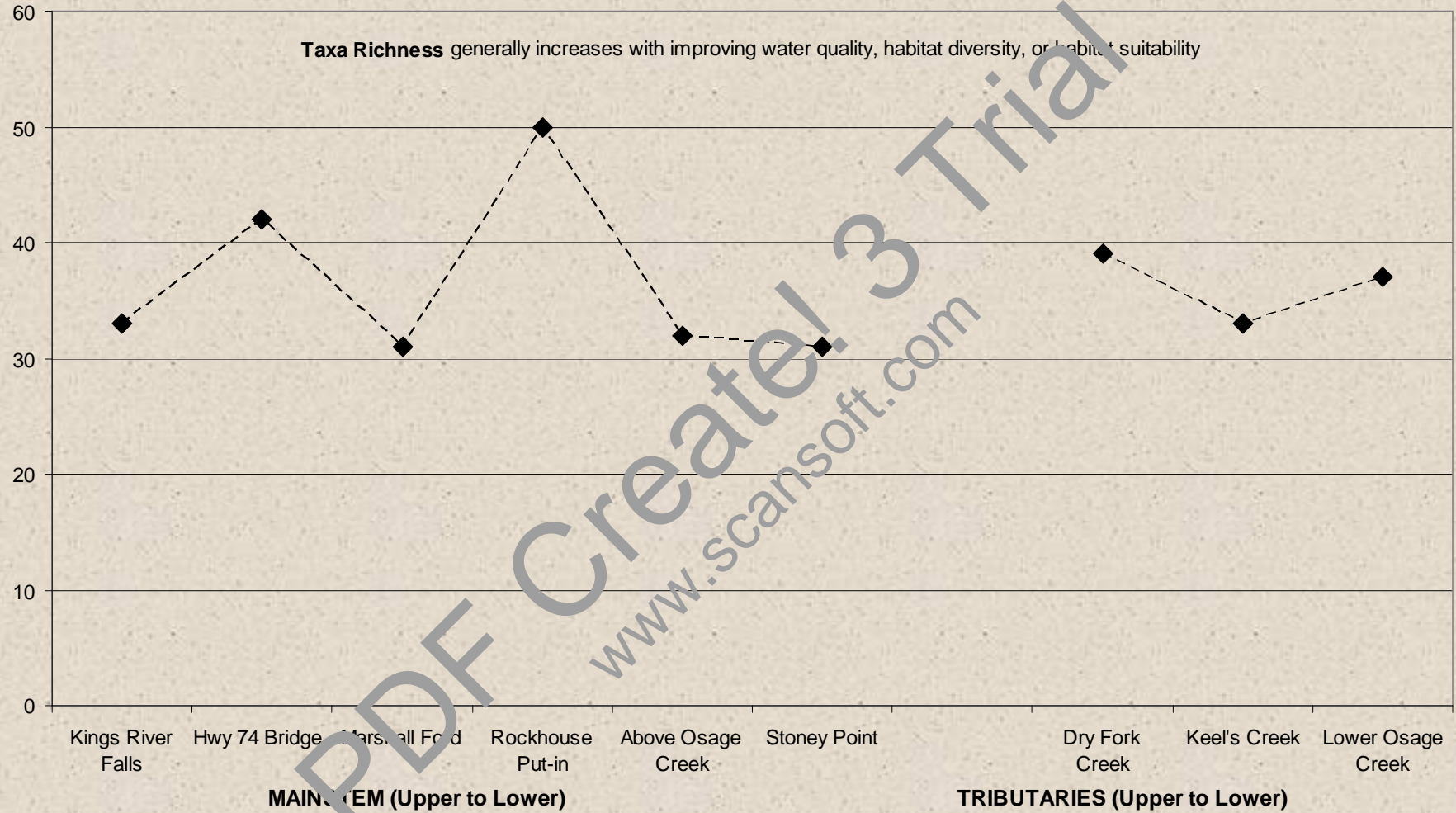
# Benthic Macroinvertebrate Survey



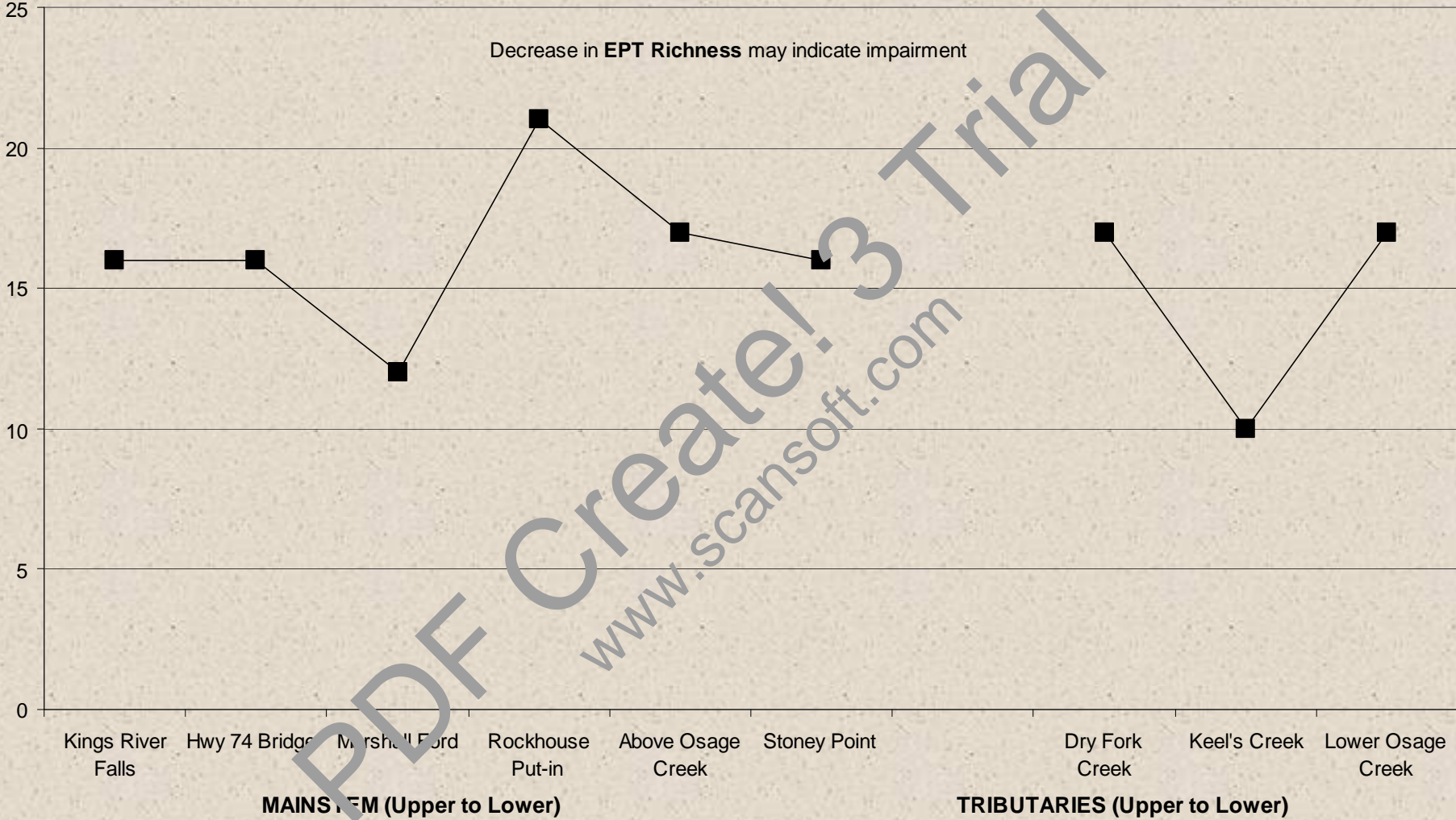
- Spring & Fall of 2007 and 2008
- 10 sites correlating with chemical monitoring program
- NAWQA protocol
- Processed and Identified in laboratory
- Development of ICI specific to Kings River



### KINGS RIVER BIOLOGICAL ASSESSMENT - SPRING 2007 Taxa Richness

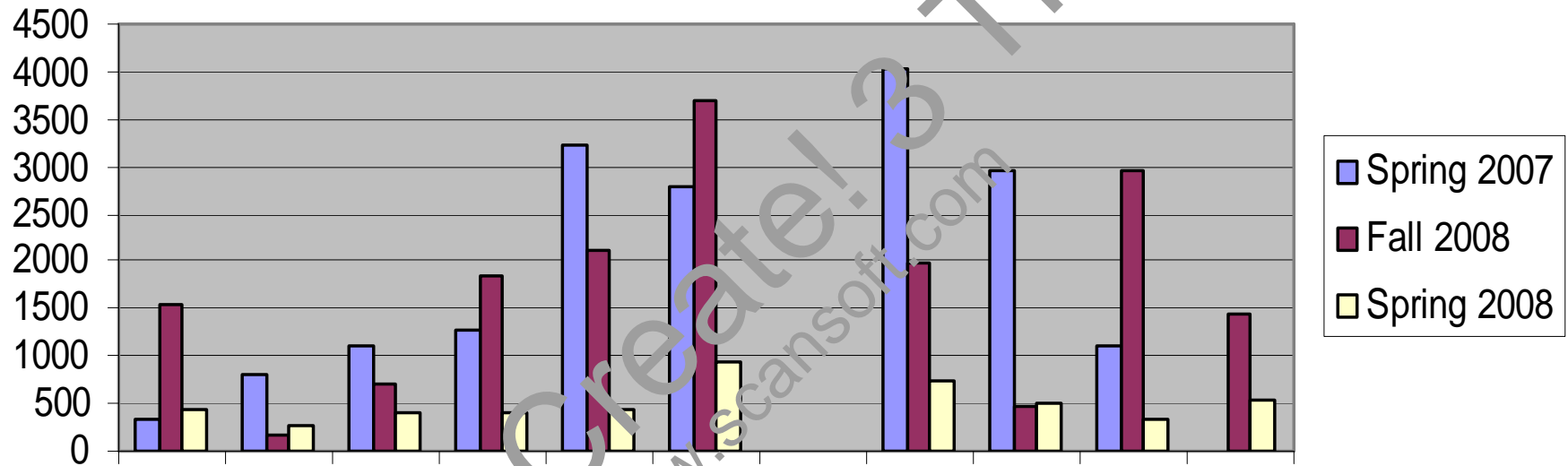


**KINGS RIVER BIOLOGICAL ASSESSMENT - SPRING 2007 EPT Richness**





# Density of Macroinvertebrate Populations



Kings River Falls

Hwy 74 Bridge

Marshall Ford

Rockhouse

306 Bridge

Stoney Point

Dry Fork

Keel's Creek

Lower Osage

Upper Osage





January 2008



March 2007



May 2008



April 07

# Educational Workshops



# Education for Kids



# Landowner's Guide to Streamside Living

A Handbook for  
the Kings River  
Watershed



## Section 1

- Ownership & Public Use
- Property & Stream Modifications
- Onsite Waste Treatment Systems
- Floodplain Development
- Wildlife Regulations

## Section 2

- Understanding the Stream Corridor
- Historical Changes
- Creatures of the Kings

## Section 3

- The Dirt on Dirt
- I Thought Nutrients Were Good For You?
- Water Quality on the Kings

## Section 4

- Riparian Buffers
- Restoring Riparian Buffer to Reduce Erosion
- Engineered Streambank Restoration
- Financial & Technical Resources

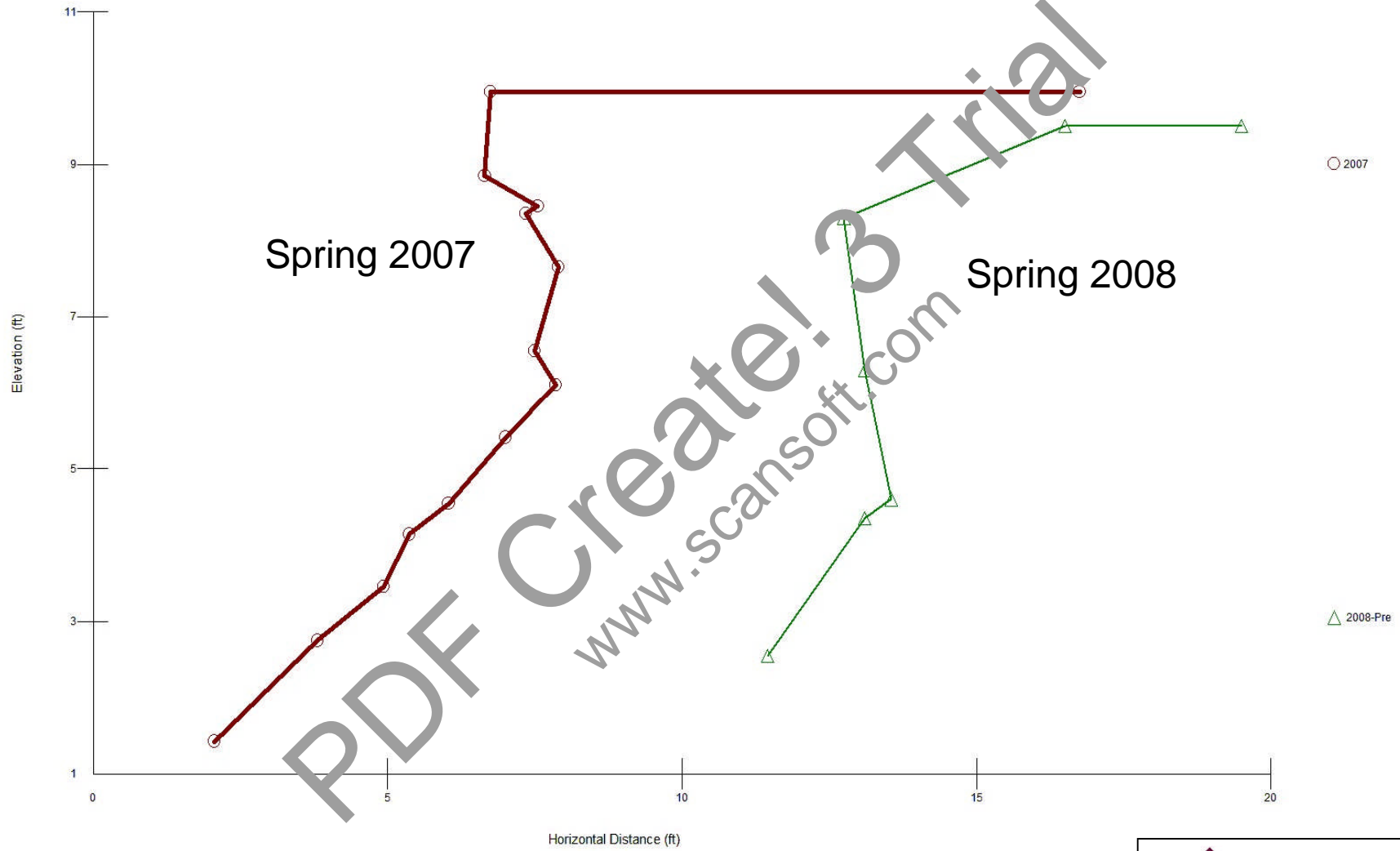


Streambank Restoration Demonstration

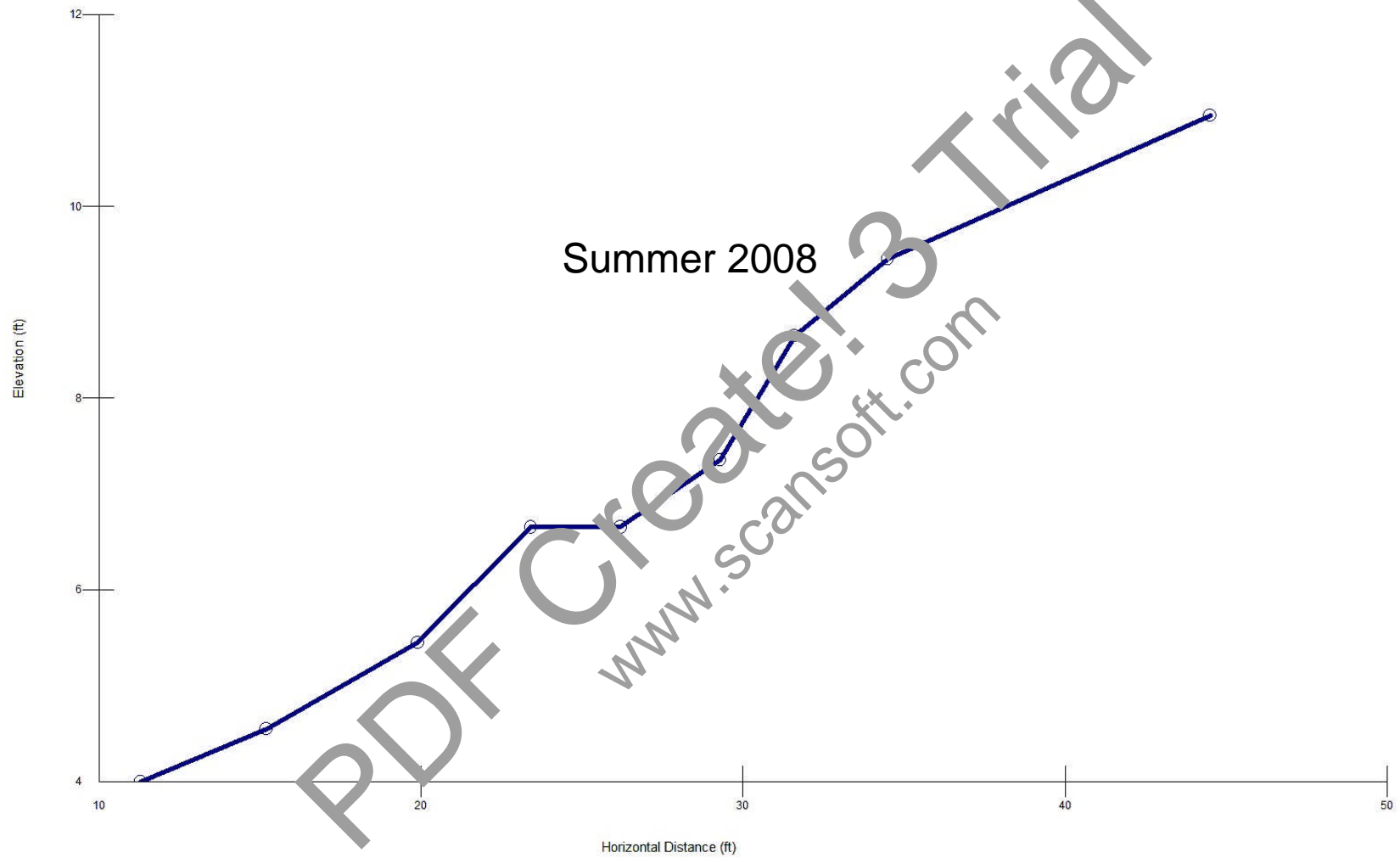




### Keels Creek Bank Profile



Keels Creek Bank Profile Post Restoration





# First High Water Event



# The Sky is the Limit

PDF Create! 3 Trial  
www.scansoft.com

