
Identifying Goals and Objectives for Watershed Restoration Projects

Justin Kauffman
-Project Manager
-Turnkey Environmental Solutions
-Design and Construction Services

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Services

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-Construction Oversight and Management
-Invasive Species Control
-Site Assessment/Planning
-Stormwater Management

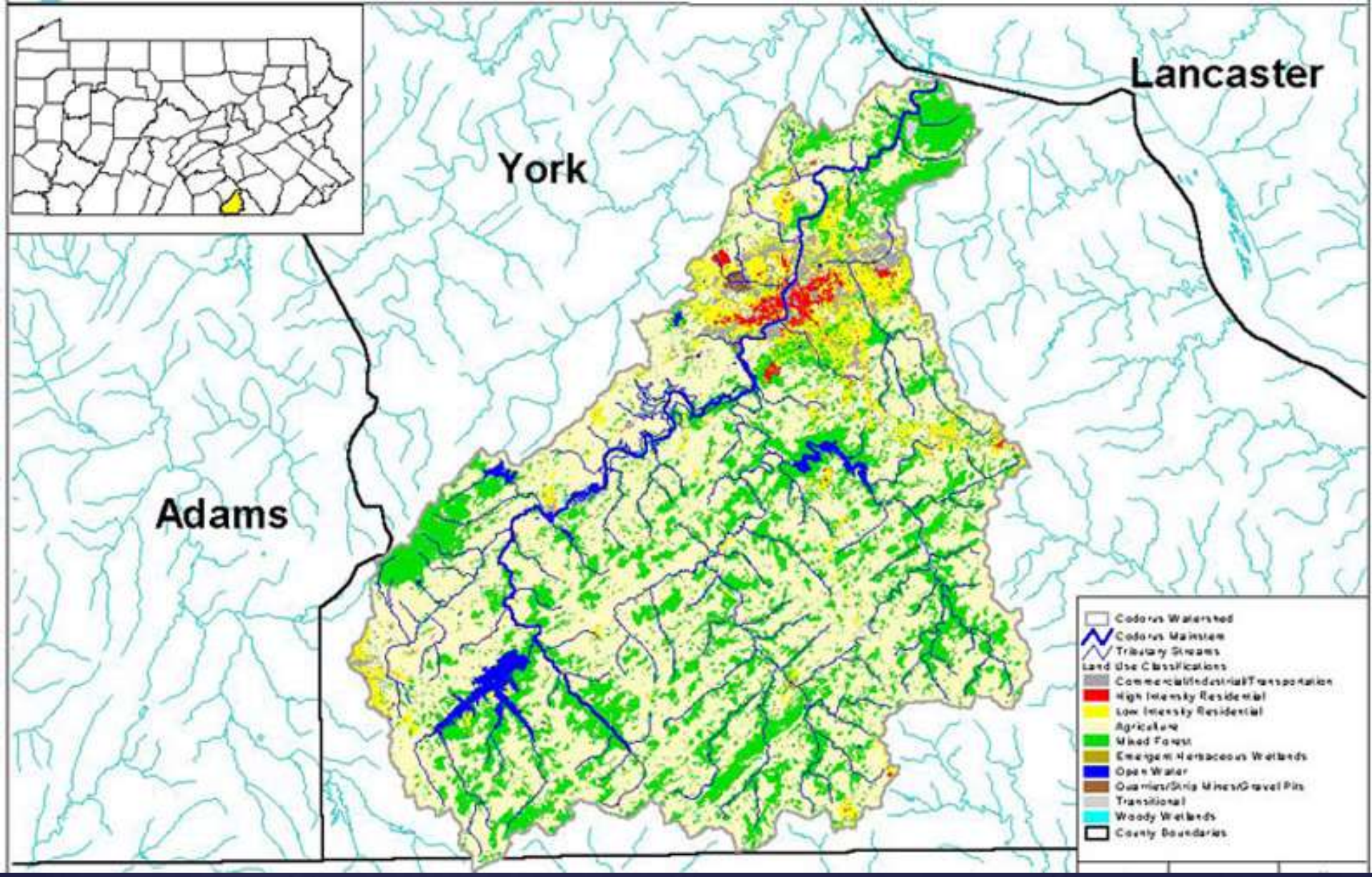
Native Nursery

Riparian Buffer Planting

Wetland Enhancement


DEERE


DEERE
333D



Codorus Creek Watershed

Parallel Drainage Basin

- 4 Major Branchs
  - Main
  - South
  - East
  - West

  Most restoration has been completed in South and East Branch

  Each Branch maintains unique parameters and must be addresses individually

Contributing Organizations

Codorus Creek Watershed Association

Izaak Walton League of America

Other Organizations

-WATERSHED ALLIANCE OF YORK
-YORK COUNTY CONSERVATION DISTRICT
-TROUT UNLIMITED, CODORUS CHAPTER
-YORK COUNTY PLANNING COMMISSION

MANY OTHER LOCAL PARTIES HAVE CONTRIBUTED OVER THE YEARS

History of Codorus Restoration

- The Turning Point

Issues in the Watershed

- Legacy Sediments
- Poor Sediment Transport
- Accelerated Erosion Rates
- Reduced Riparian Zone Density
- Increased Runoff due to Urbanization and Agriculture
- Poor Habitat and Biodiversity

Flood Damage from 2003 to 2004

-Circa 1990s

-Two Main Approaches to stream restoration

- Replant Ripariain Zones
- Use fish habitat structures to provide habitat and armor against erosion

Resulted in significant failure of one project site

Original Approach

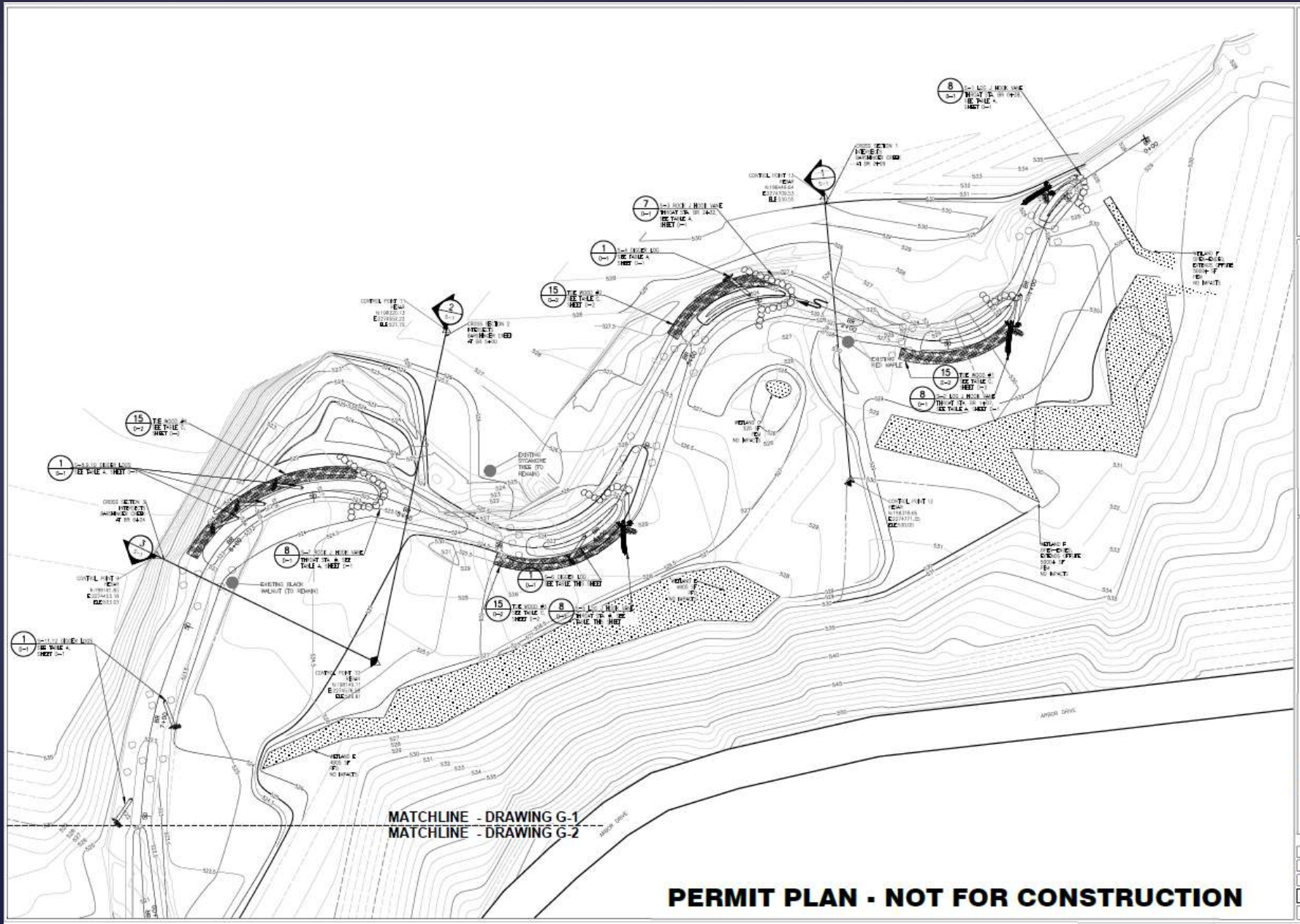
Corrective Actions

- Watershed Assessment
  - Completed through 319 Grant
  - Managed by ARRC President Lee Irwin
  - Collected empirical data on all branches of watershed
- WIP
  - Watershed Implemenation Plan
  - Developed based on assessment
  - Completed by York Co. Conservation District

Results

- Utilization of Fluvial Geopmorphology, Floodplain Restoration, Hydraulic Engineering and Storm-water Management Techniques

- Over 15+ Miles of Succesful Restoration of East Branch and South Branch
- Utilization of Conservation Practices in High Quality Areas of Watershed (i.e. West Branch)
- Improved Fish Habitat and Recreation
- Strong Community Involvement in Watershed
- Increased Funding for Restoration Activities



SCALE
1" = 20'

AQUATIC RESOURCE RESTORATION CO.
2433 SEVEN VALLEYS ROAD, SUITE 202
SEVEN VALLEYS, PENNSYLVANIA 17360
(717)428-9368 FAX: (717) 428-9411
www.arrci.com
A Complete Solution to Environmental Restoration

SCALE:	1"=20'
DESIGNED BY:	RLL/JJM
DRAWN BY:	MDM/JJM
DATE:	13 FEB 2015
PAGE:	2 of #


© 2015 Google
Google earth
1993
Imagery Date: 9/6/2013 39°52'19.33" N 76°39'35.02" W elev 528 ft eye alt 2214 ft

{ Before

{ After

{ Before

{ After

{ Before

{ After

Reasons for Success

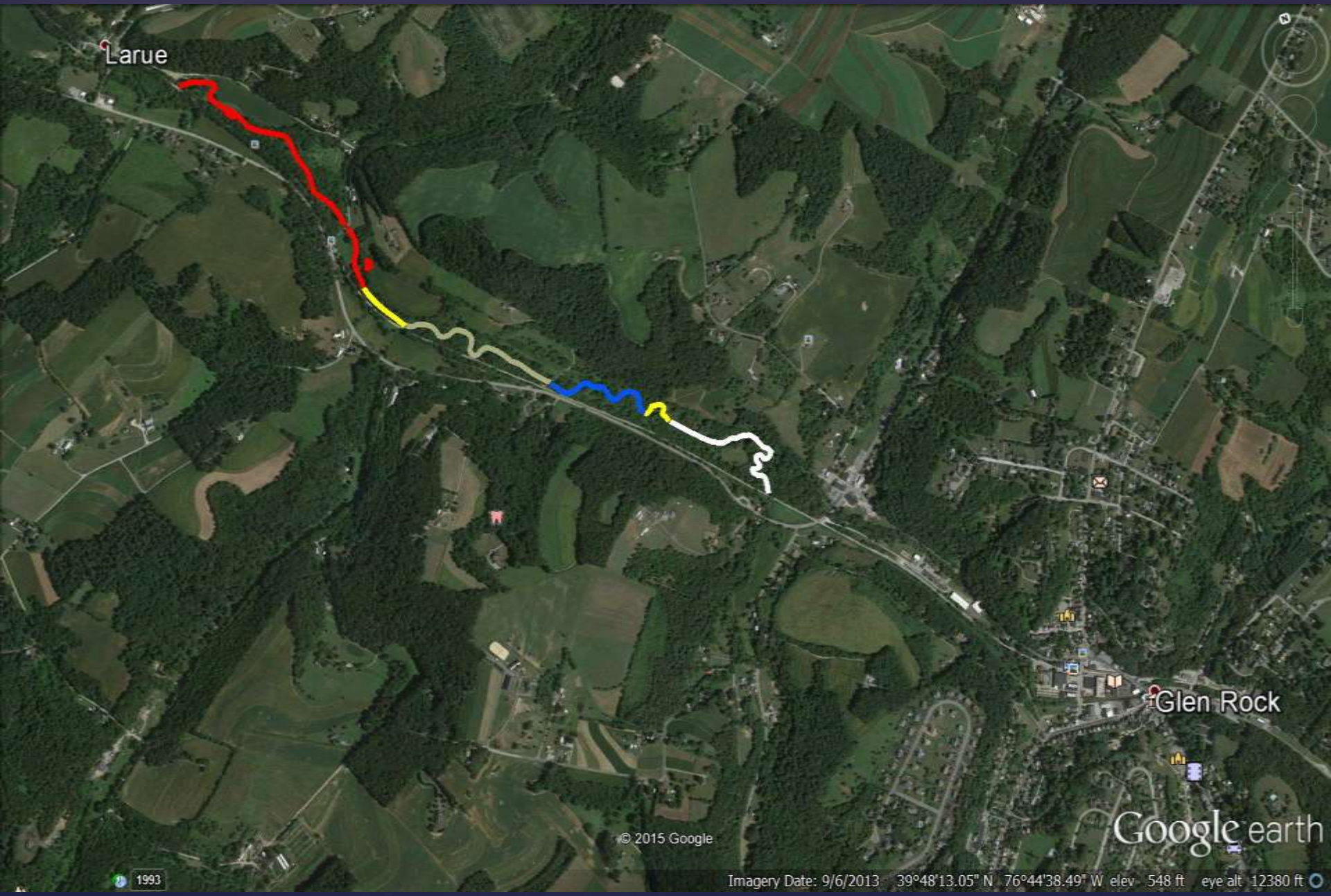
- Better Understanding of Watershed
- Identify Issues for Degradation and Constraints Governing Watershed
- WIP Outlines Goals and Objectives of Restoration
- Combats Typical Issues Faced by Sponsor Groups
- Allows for Clear Communication Between Sponsors, Grant Coordinators and Consultants to Ensure Desired Results
- Outlines Future Work

Most Importantly: Refined Views on Restoration

EFFORTS BECAME LESS ABOUT FIGHTING DEGRADATION AND MORE ABOUT RESTORING THE WATER WAYS AND FLOODPLAIN TO A CONDITION THAT COULD HANDLE FLOW REGIMES WITHOUT SHIFTING "EQUILIBRIUM"

Benefits

Sponsors	Consultant
-Able to maintain goals -Focus on Conservation And Water Quality -Improve Fishery and Habitat -Sustain Involvement and Participation -Increased productivity	-Maintain consistent and uniform project approaches -Gain and maintain data to evaluate success -Learn and expand techniques new and old -Increased productivity


Larue
Glen Rock
© 2015 Google
Google earth
1993
Imagery Date: 9/6/2013 39°48'13.05" N 76°44'38.49" W elev 548 ft eye alt 12380 ft

Incorporation of New Techniques

- New structures have been utilized
- Increased connection and efforts placed into floodplain areas
- Focus on wetlands for water management
- Development of diverse stream types and restoration approaches for unique situations
- More attention to project specific goals and incorporating them into design


Old Techniques

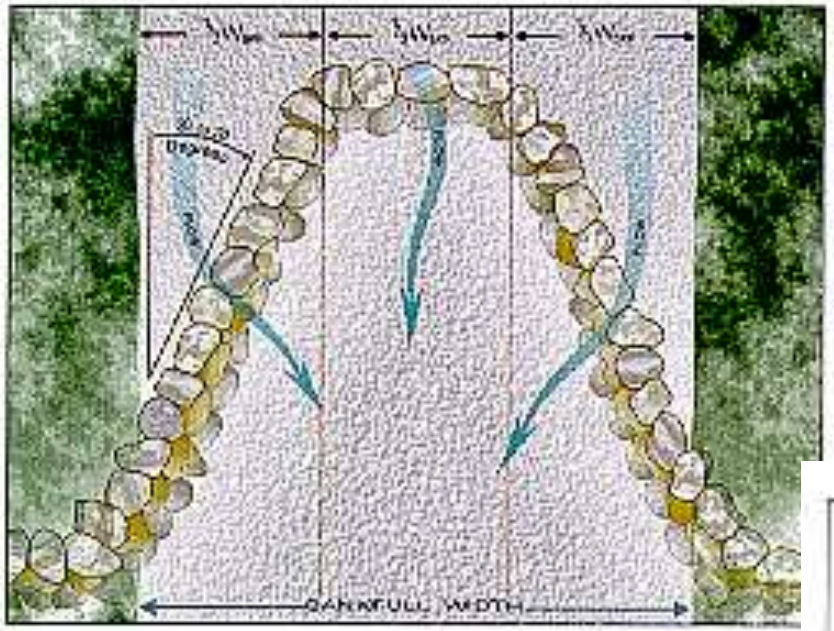


FIGURE 8-22. Cross-Vane Structure.

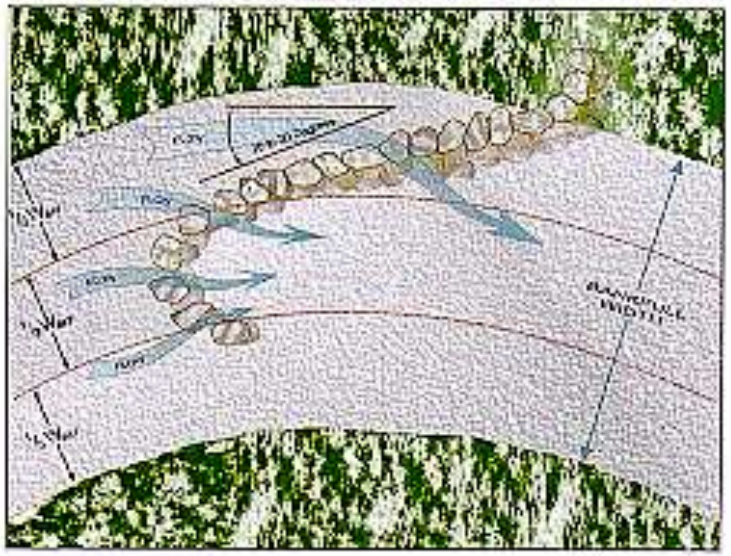


FIGURE 8-23. J-Hook Vane.

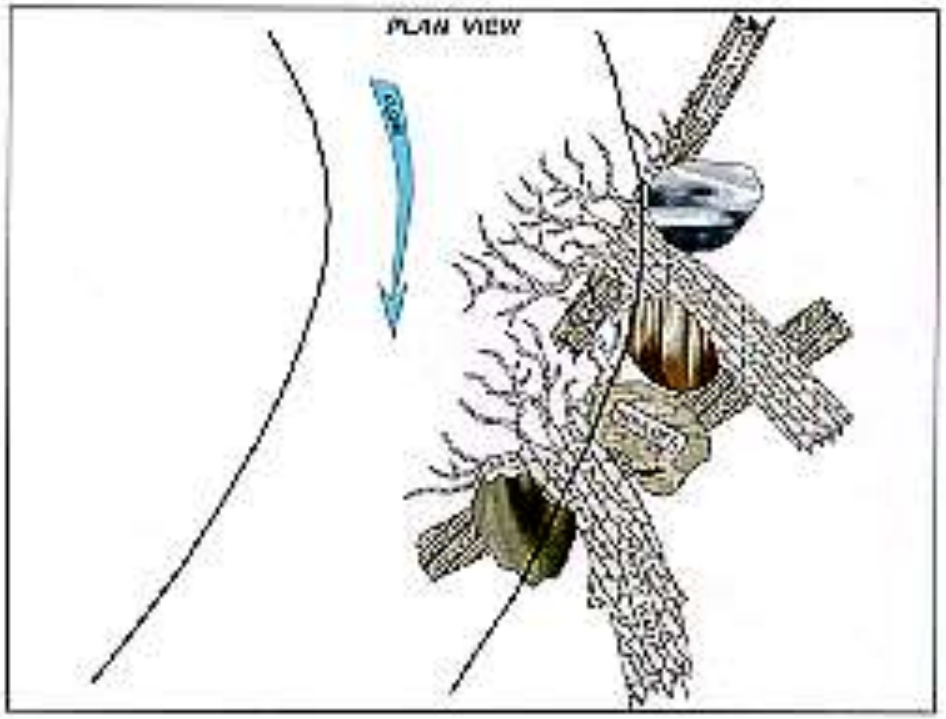


FIGURE 8-25. Native material bank revetment. (Keegan, 1993a)

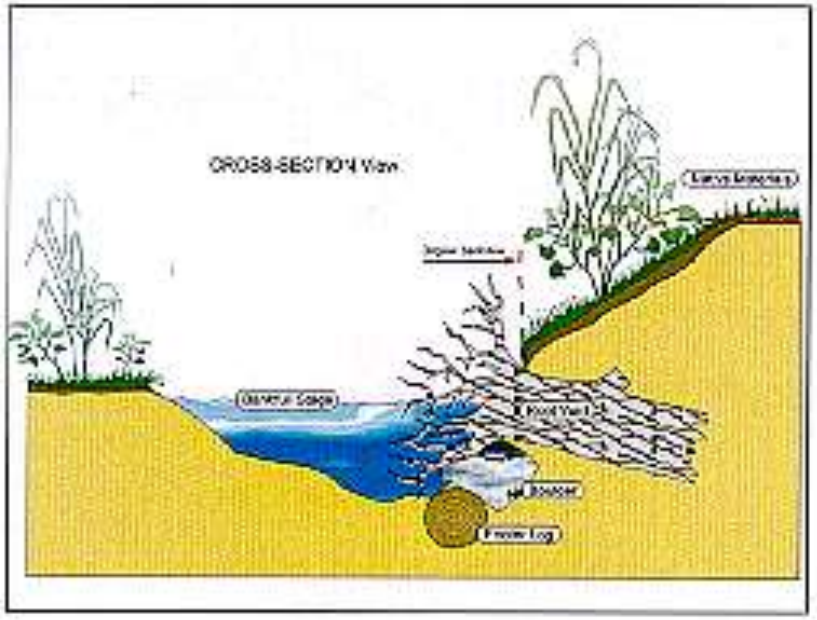


FIGURE 8-24. Native material bank revetment. [Rosgen, 1993a]

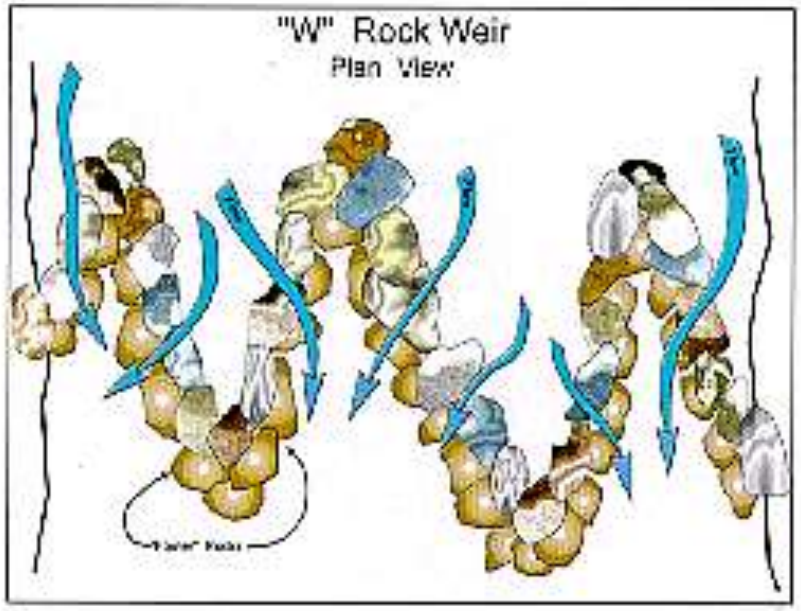


FIGURE 8-26. "W" rock weir. [Rosgen, 1993a]

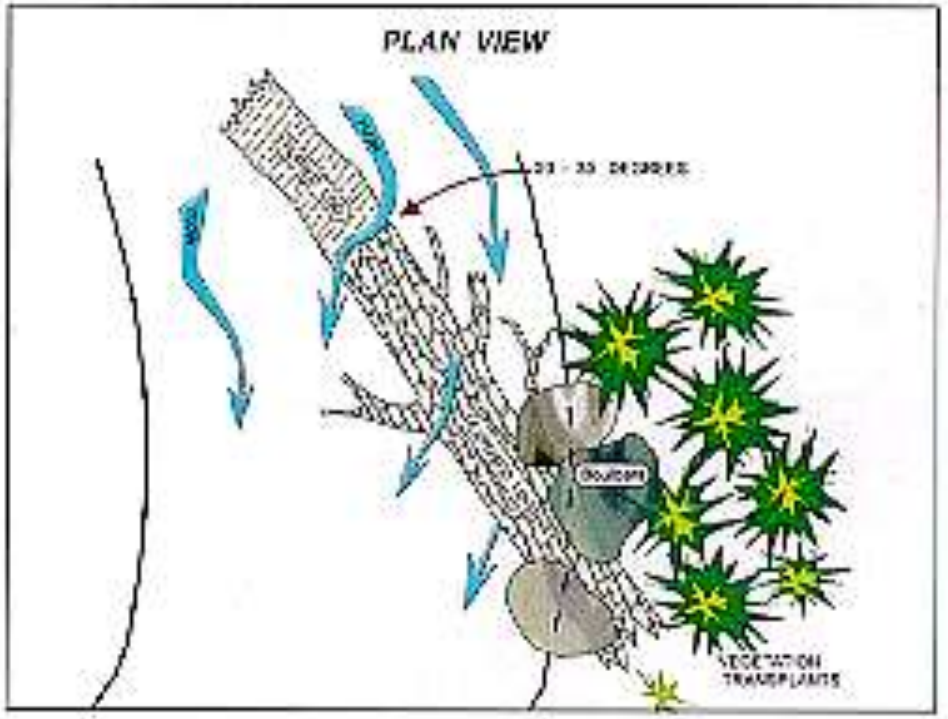


FIGURE 8-27. Log-vane bank feature. [Rosgen, 1993a]

Questions?