



Implementation of Stream Restorations on Tribal Lands through the Clean Water Act Section 319

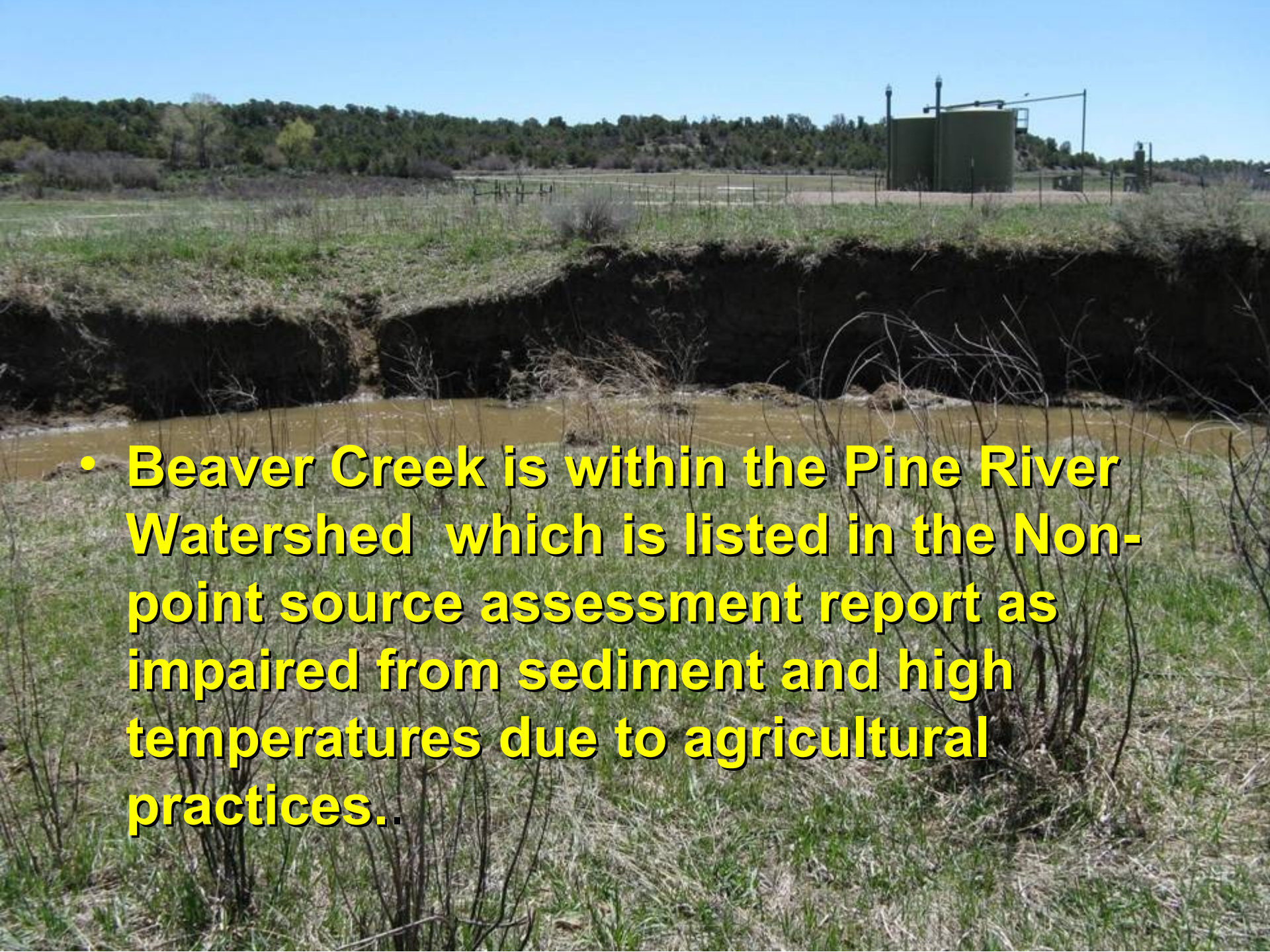
Steps to Implementation

1. Site Selection
2. Site Logistics Planning
3. Funding Procurement
4. Contractor Selection
5. Contract Administration
6. Permitting Administration
7. Project Construction
8. Project Inspection
9. Project Monitoring
10. Project Reporting
11. Project Maintenance

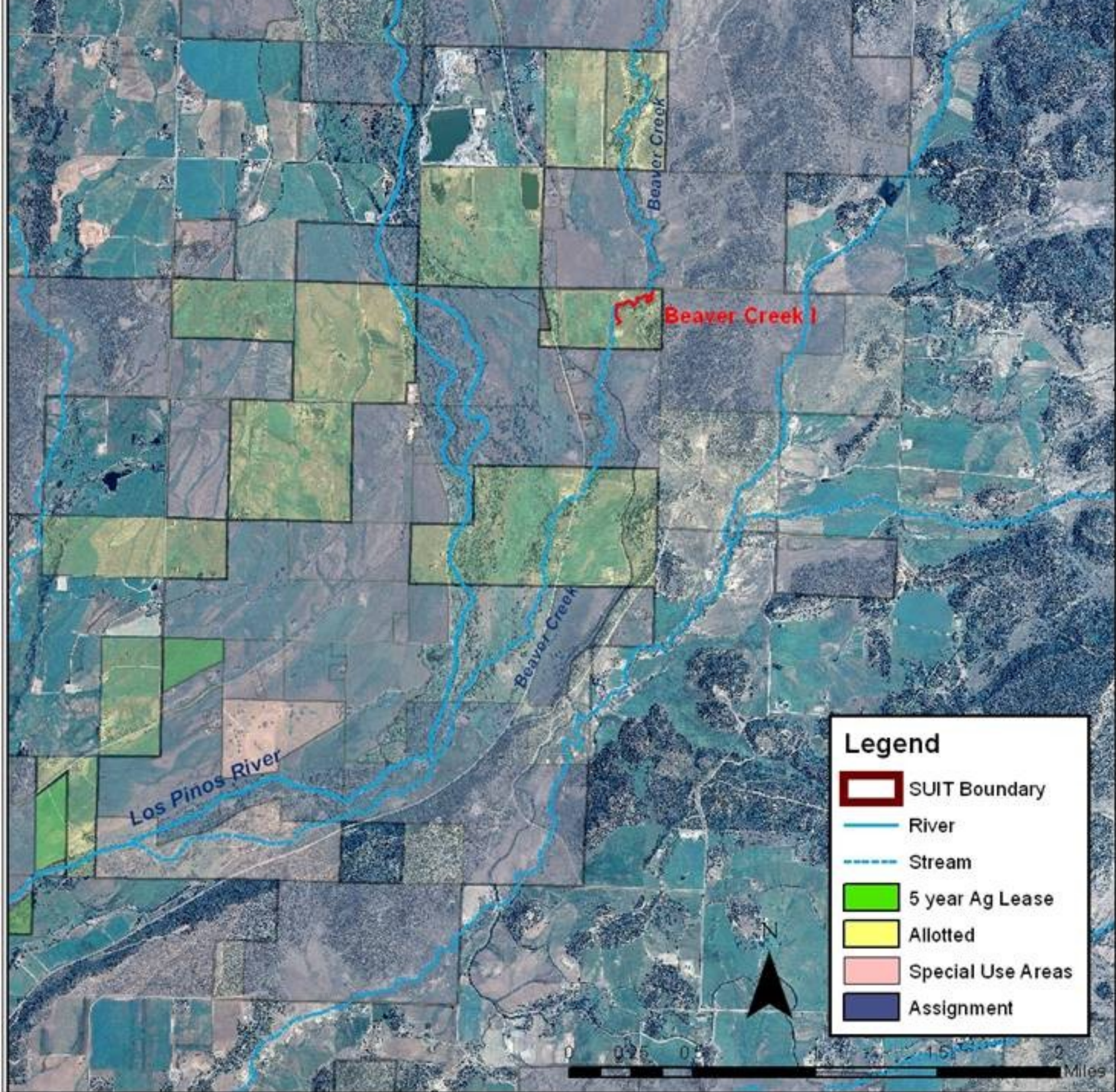
Site Selection

A photograph of a rural landscape. In the foreground, there is a grassy bank with some sparse vegetation. A muddy stream flows through the middle ground. In the background, there is a large, brown building and a fence line. The sky is blue with some clouds.

- **Identify site with impairments that fit under the Clean Water Act §319 and the 319 programs Non-Point Source Assessment and Management Plan.**



- **Beaver Creek is within the Pine River Watershed which is listed in the Non-point source assessment report as impaired from sediment and high temperatures due to agricultural practices..**





CR 524

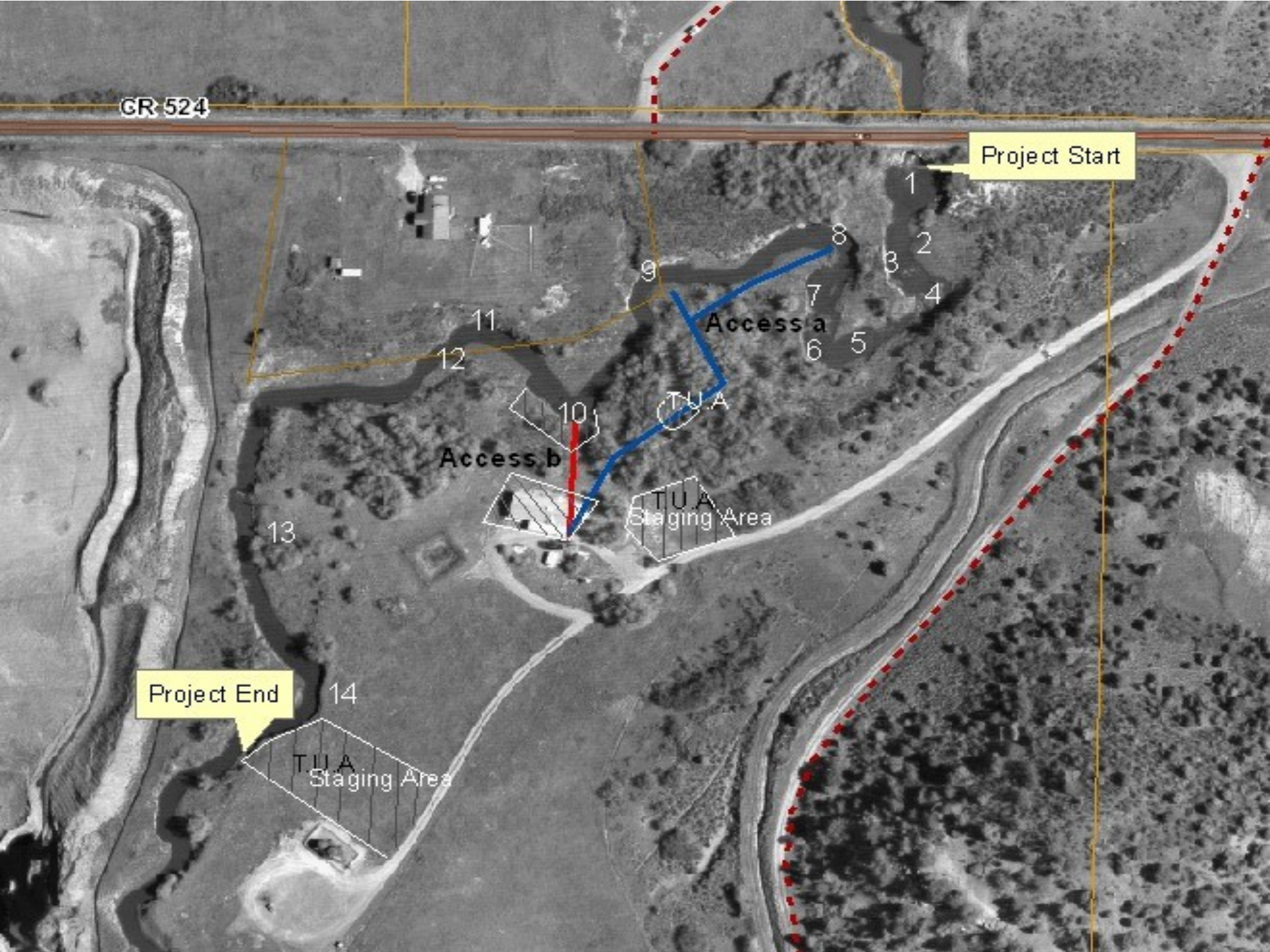
Project Start

Project End



Site Logistics Planning

- Identify Banks that need to be stabilized.
- Identify access routes, staging areas, etc.



GR 524

Project Start

Access a

Access b

TUA

TUA Staging Area

Project End

TUA Staging Area

13

14

12

11

10

9

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7

8

1

2

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4

Funding Procurement

A photograph of a concrete culvert pipe installed in a stream. The pipe is circular and set within a concrete structure. The stream flows through the pipe, creating a small waterfall effect. The surrounding area is rocky and has some green vegetation and trees in the background under a blue sky with white clouds.

- Complete proposal to USEPA for funding under annual Tribal §319 Competitive funding opportunity.
- If awarded, revise proposal per EPA guidance
- Continue early planning when fiscal year for grant begins (EPA grant period for Beaver Creek October 2009-September 2010)

Contractor Selection

- Write and post Request For Proposals**
- Send RFP to identified qualified contractors**
- Host onsite for interested contractors**
- Review submitted proposals**
- Form selection committee and draft selection matrix for submitted proposals**

Contract Administration

- **Draft Contracts in accordance with Tribal Policies and Tribal Law.**
- **Get selected contractor to sign contract then take contract to Tribal Council for contractor approval.**

Permitting Administration



- **Perform Archaeological and Biological Surveys**
- **A line locate Survey must be completed onsite prior to construction.**

Project Construction

A yellow excavator is positioned on a raised earthen bank, working on a construction project. The excavator's arm is extended, and its bucket is partially submerged in a body of muddy water. The background shows a clear blue sky with scattered white clouds, a line of trees, and a large green industrial tank or structure in the distance. The overall scene depicts an active construction site in a natural setting.

- **Oversee contractors during the construction phase**















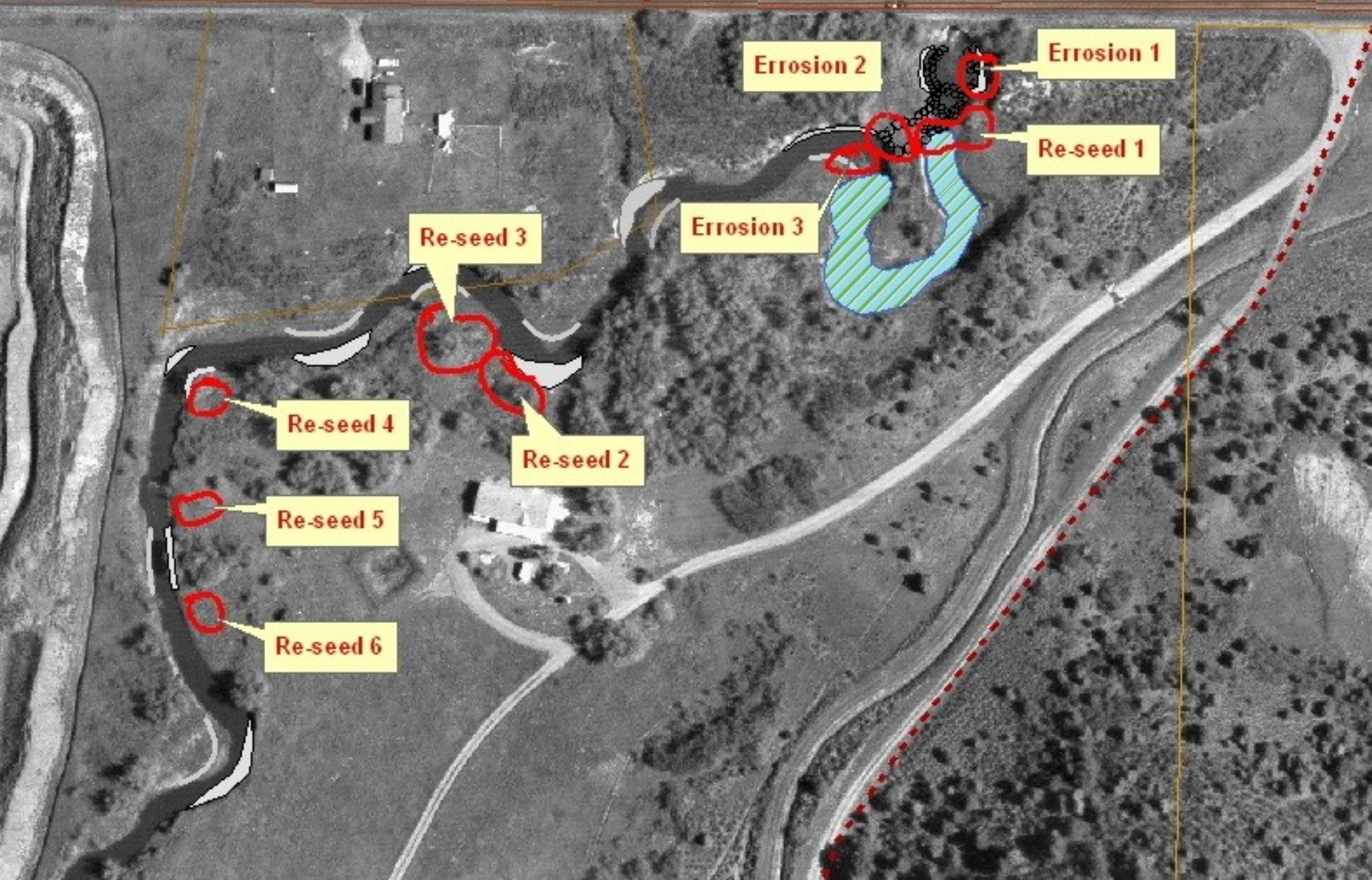
Project Inspection



- **Inspect project site for issues.**
 - **Communicate concerns to the contractor**
 - **Decide how to remediate concerns with the contractor**

Areas of concern

CR 524



Erosion 2

Erosion 1

Re-seed 1

Erosion 3

Re-seed 3

Re-seed 4

Re-seed 2

Re-seed 5

Re-seed 6



Before (taken on 5/2/2010)



After (taken on 5/14/2010)



Before (taken on 5/2/2010)



After (taken on 5/14/2010)



Before (taken on 5/2/2010)



After (taken on 5/14/2010)



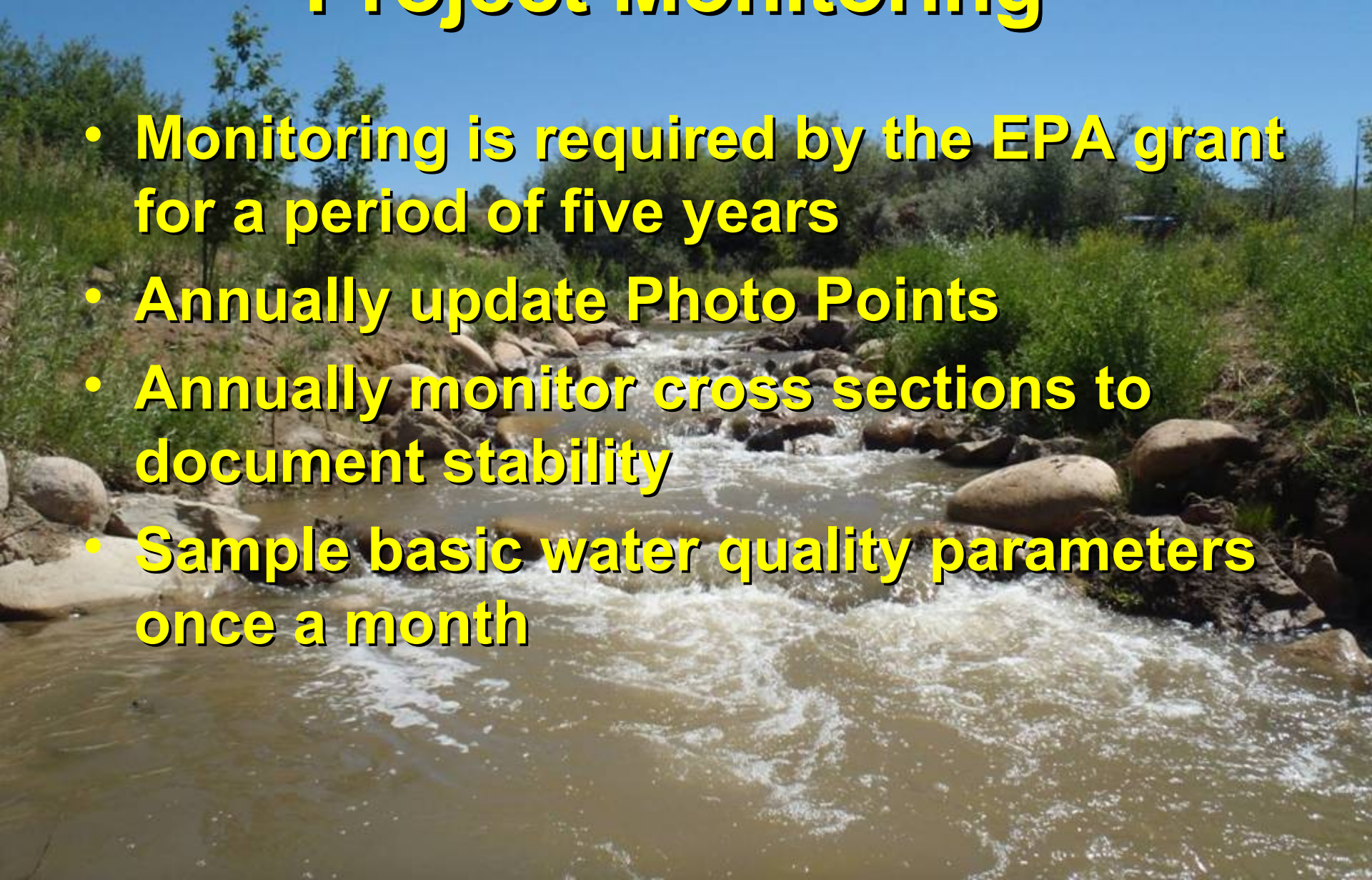
Before (taken on 5/2/2010)

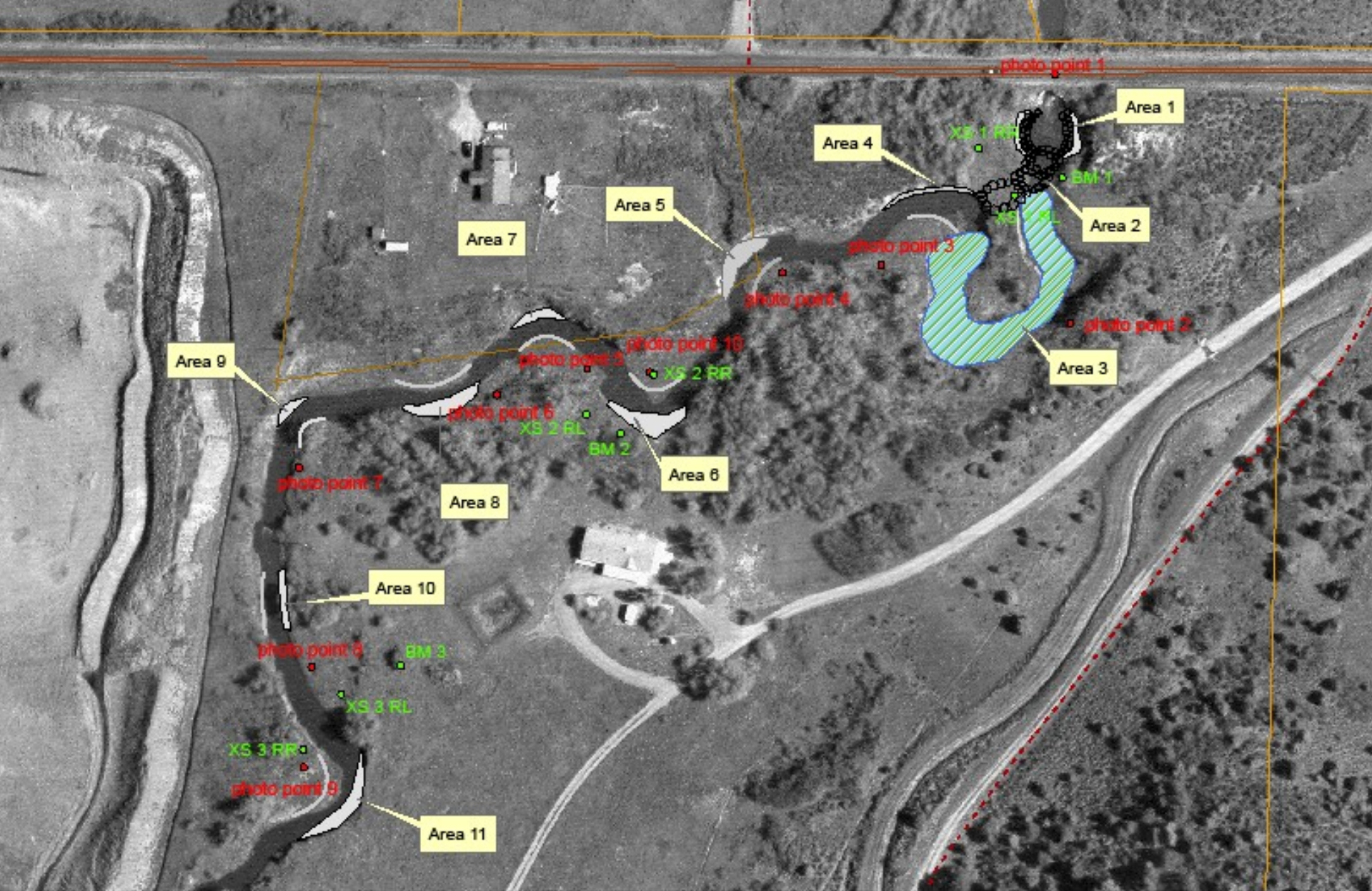


After (taken on 5/14/2010)

Project Monitoring

- **Monitoring is required by the EPA grant for a period of five years**
- **Annually update Photo Points**
- **Annually monitor cross sections to document stability**
- **Sample basic water quality parameters once a month**





Beaver Creek Stream Restoration

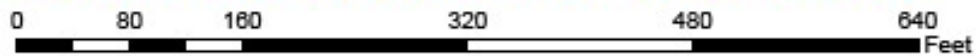


Photo Point 1



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (Taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 2



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 3



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 4



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 5



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 6



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

Photo Point 7



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)



Photo Point 8

Before: (taken on 5/6/2010)



Photo Point 9



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



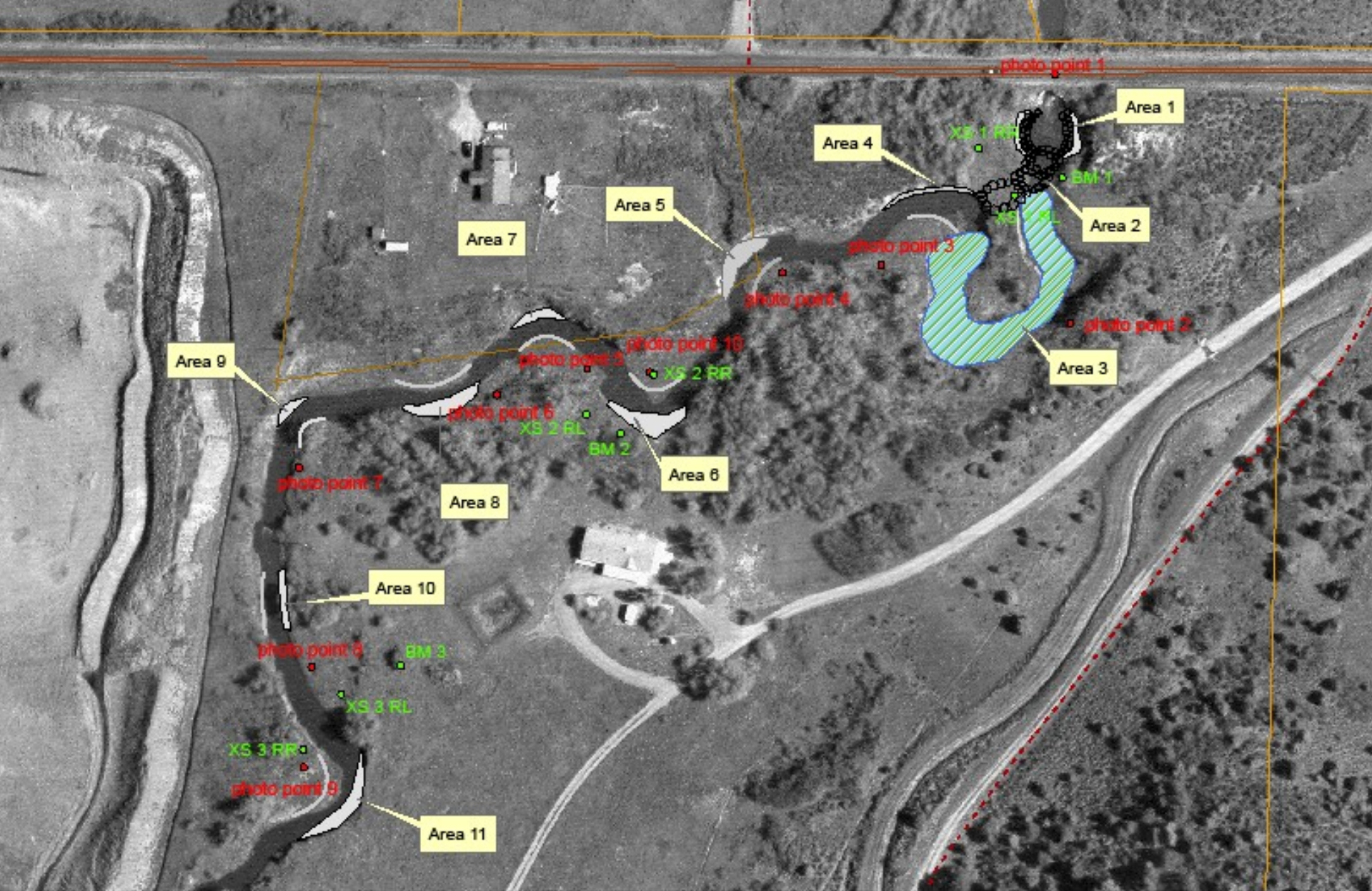
After 1 summer: (taken on 9/15/2010)



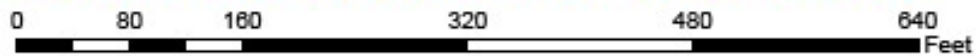
After 2 summers: (Taken on 9/16/2011)

Photo Point 10



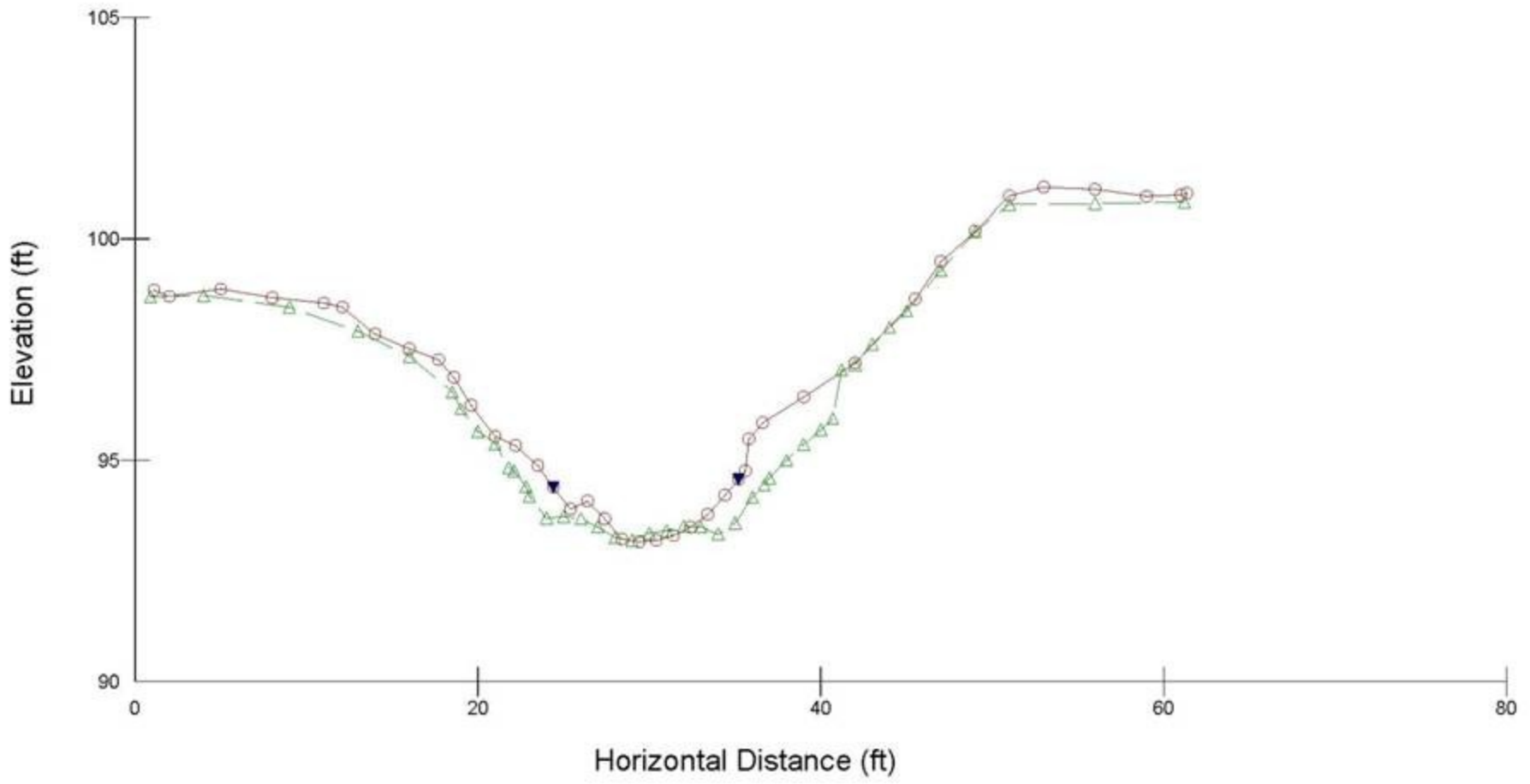


Beaver Creek Stream Restoration



Cross Section 1 7/26/2010

○ Cross Section 1 7/26/2010 ◆ Bankfull Indicators ▼ Water Surface Points △ Cross Section 1 9/19/2011









Project Reporting

- **Semi-annual and annual reports are provided to the EPA in accordance with grant work plan and guidelines**
- **Final photos and letter of completion is sent to the U.S. Army Corps of Engineers as required by the Nation wide 27 Permit**

Project Maintenance

- Periodically inspect site for issues with constructed features, inspect progress of re-vegetation, check for excessive erosion or other issues.
- If issues arise, try and mitigate the problem (such as placement of rock, planting of vegetation, etc.)
- Perform weed control on the project site











Photo Point 9



Before: (taken on 5/6/2010)



After: (taken on 5/25/2010)



After 1 summer: (taken on 9/15/2010)



After 2 summers: (Taken on 9/16/2011)

September 2011





October 2009



September 2011





Eroding Flows

Cutting through the narrow meander





Stabilize Plunge Pool



September 2011

Oxbow Wetland

October 2009



September 2011





Stream channel to oxbow wetland

Oxbow September 2011



Step pools



Creation of bankfull benches



June 2010



Riparian planting





September 2011

September 2011



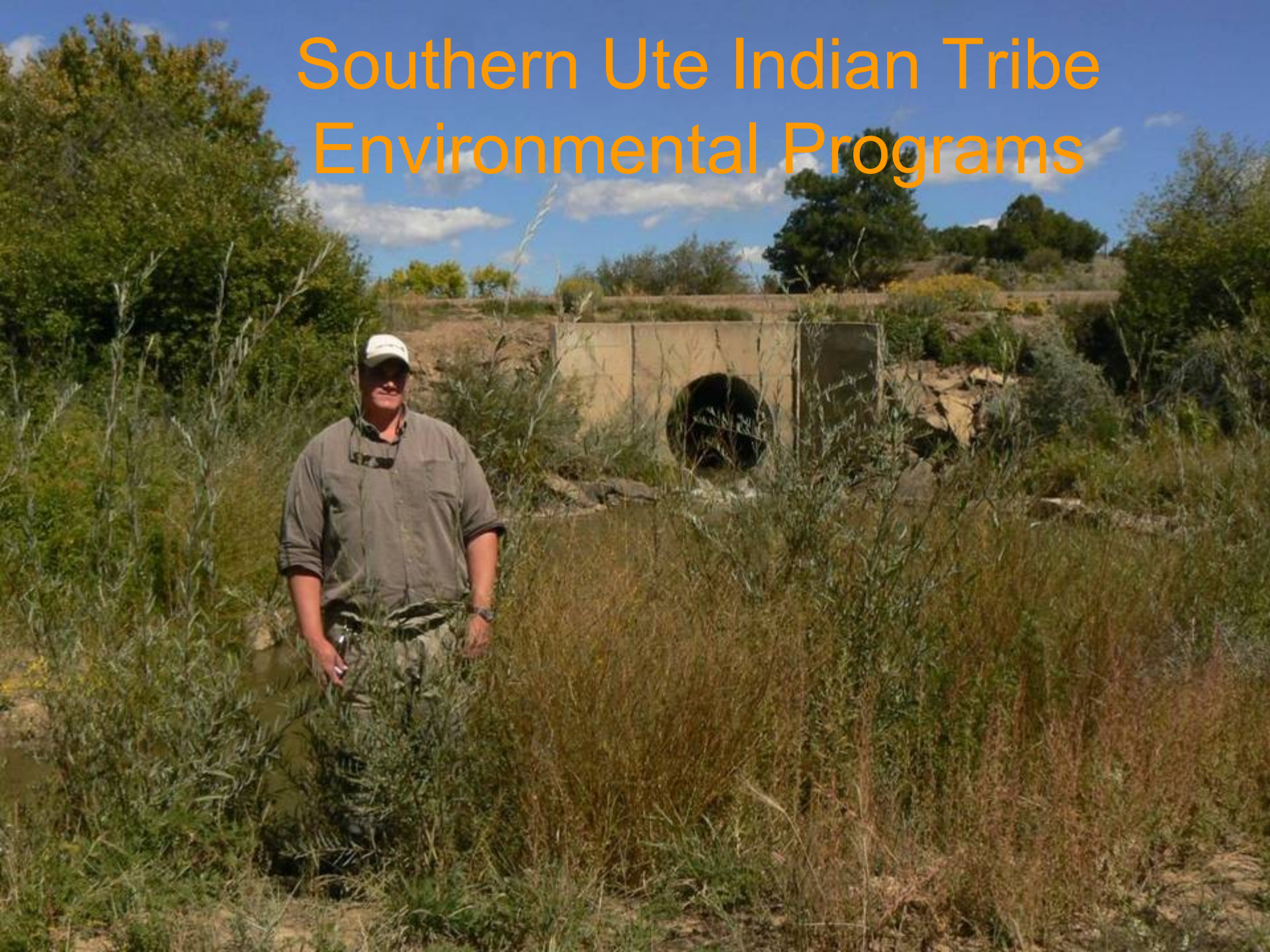


On-site planning April 2010



Biohabitats
SOUTHERN ROCKY MOUNTAIN BIOREGION
Incorporated

Southern Ute Indian Tribe Environmental Programs



TERO crews





Stan Neil Construction

Ft. Lewis College Volunteers



Los Lunas Plant Material Center





Watering



Watering tubes



Questions?



Biohabitats
SOUTHERN ROCKY MOUNTAIN BIOMIMICRY
Incorporated

SOUTHERN UTE INDIAN TRIBE



Pete Nylander
Senior Water Quality Specialist-319

Environmental Programs Division
116 Mouache Drive, P.O. Box 737
Ignacio, Colorado 81137
(970) 563-0135 ext. 2214
(970) 563-0384 (fax)
prylan@southern-ute.nsn.us