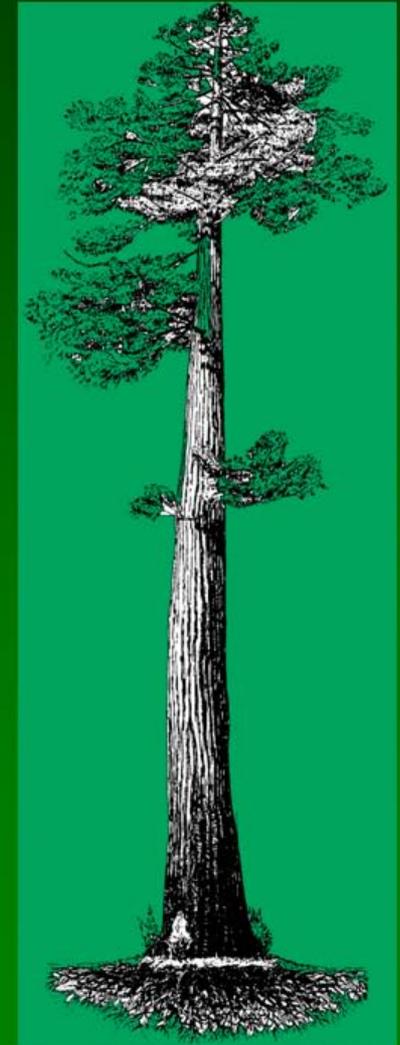


# ***North Coast Redwoods District***

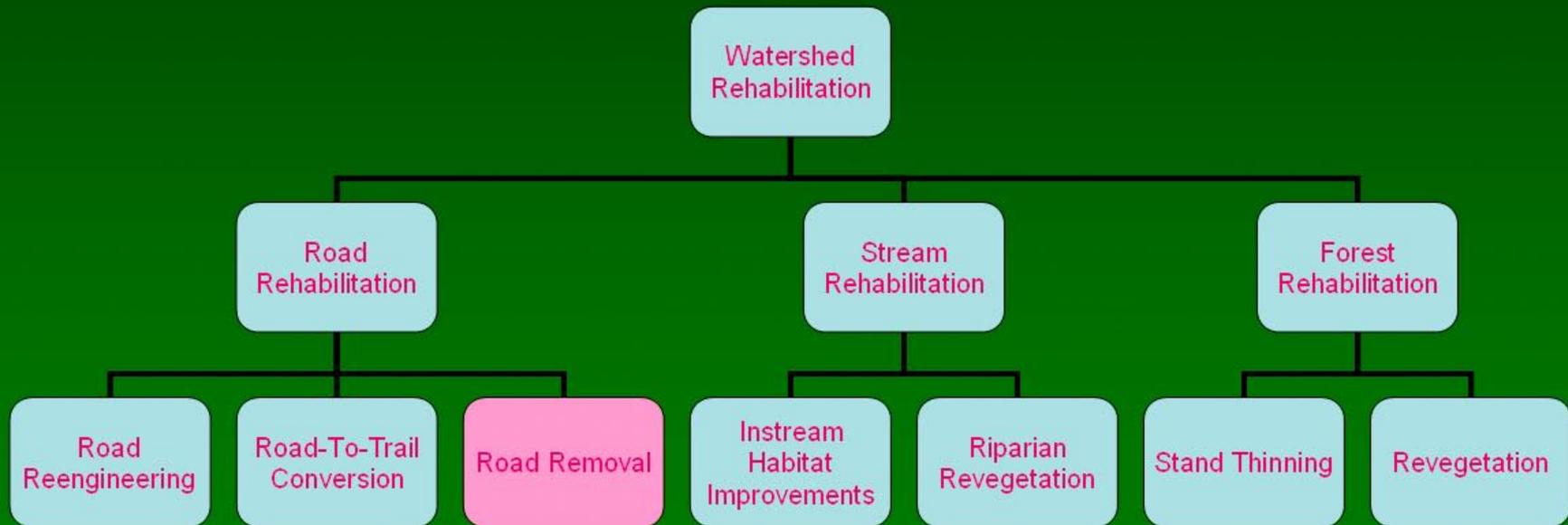
## ***Road Rehabilitation and Sediment Prevention***



***Prepared by: Brian R. Merrill***  
***Engineering Geologist***  
***North Coast Redwoods District***  
***06/21/07***



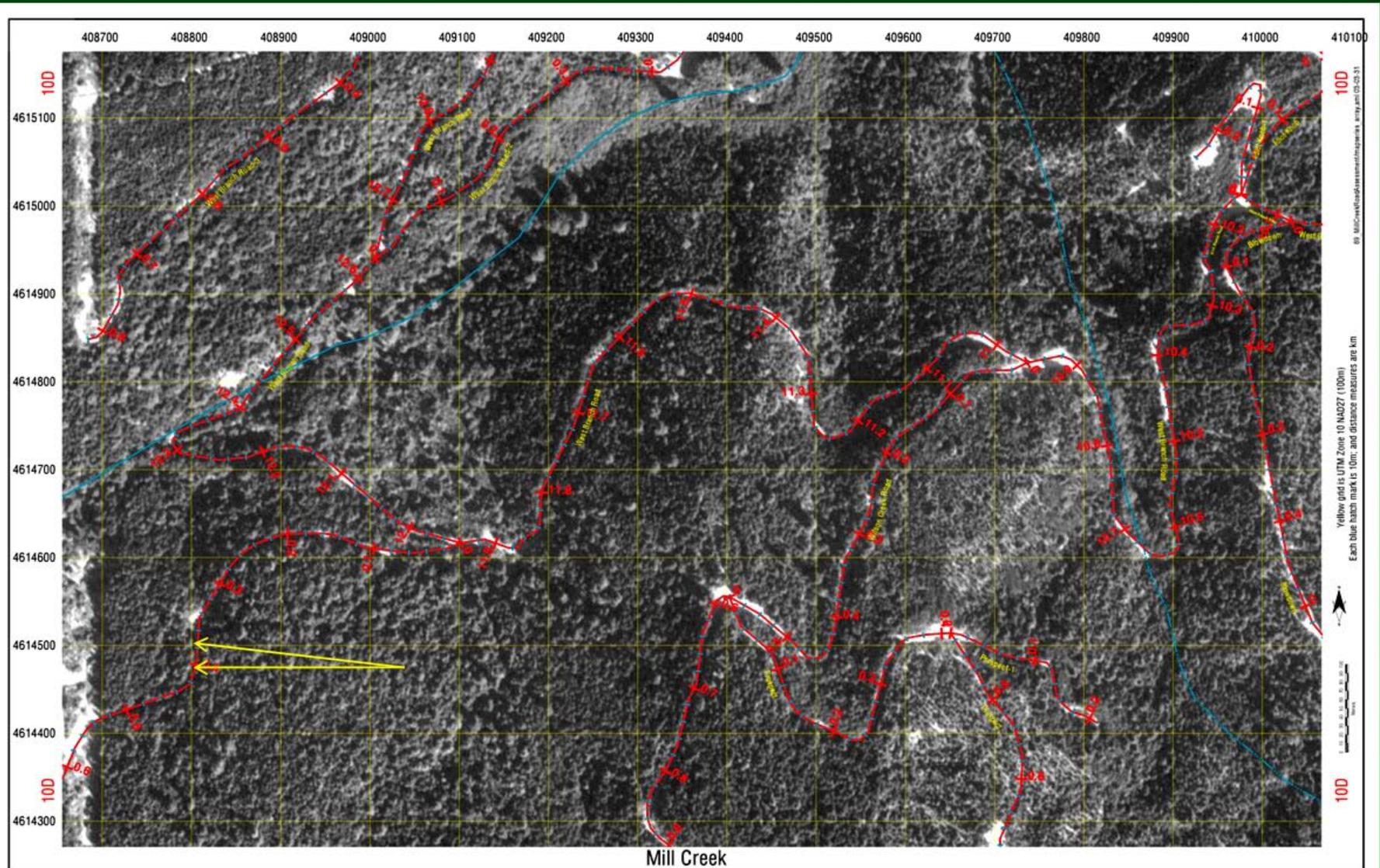
# *Road Rehabilitation as a Component of Watershed Rehabilitation*

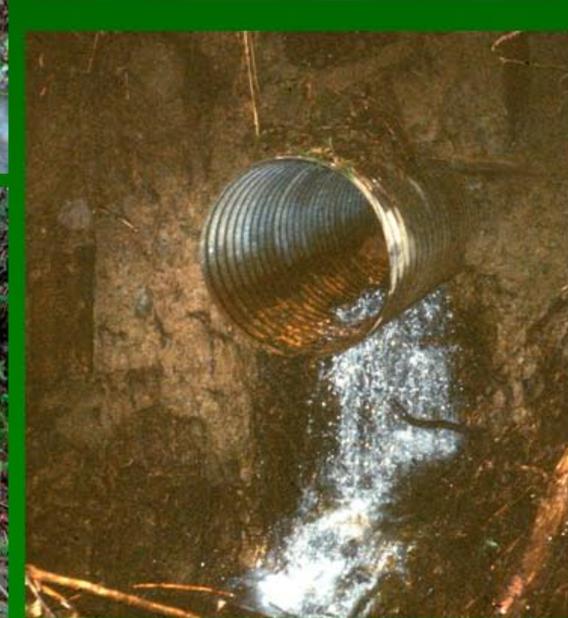


# Road Assessment and Risk Analysis



# Road Assessment Routing System





# *Downstream End Partially Washed Away*



# Culvert and Fill Washed Out



# Winter Erosion Hazards Road Drainage System Failure



# *Storm-Season Erosion Patrol*



# Road Re-engineering





# Road-To-Trail Conversion



# Road Removal



*Stream Crossing  
Excavation*

# Mill Creek Fisheries Monitoring Program

Rod McLeod

Mill Creek Fisheries Program



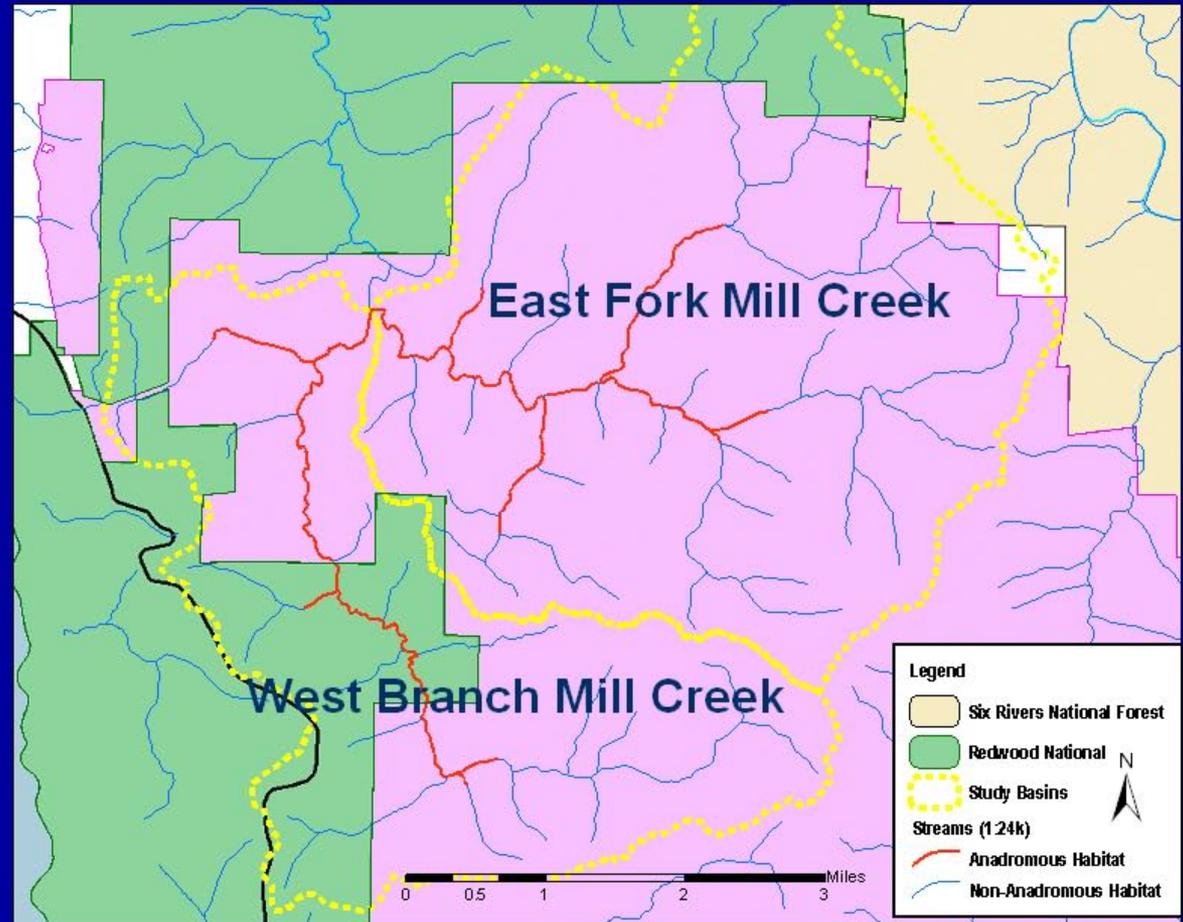
# Watershed Delineation & Available Anadromous Habitat

- **Watershed Size**

- West Branch  
7,121 acres
- East Fork  
10,534 acres

- **Anadromous Habitat**

- West Branch  
6.54 miles
- East Fork  
7.33 miles



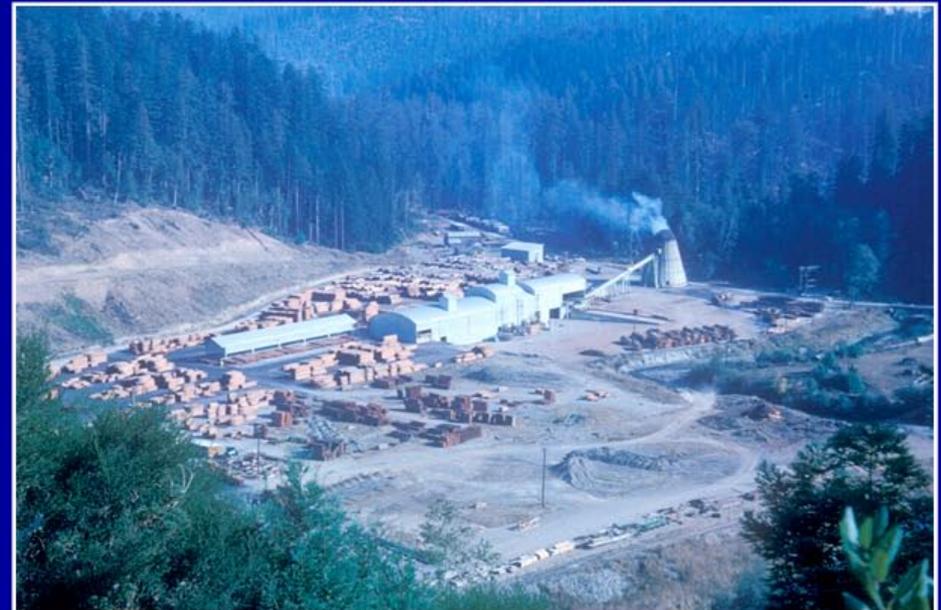
# Land Use History

- **1908-1920's** – Timber harvest in West Branch.
- **1954** – Stimson Lumber Co. resumed timber harvest in West Branch and East Fork.
- **1970 - 1980's** – CDFG mandated a wood removal program.
- **1974** – California Forest Practice Act implemented.
- **1993** – Stimson Lumber Co. closed mill.
- **2001** – Mill Creek property acquired by Save the Redwoods League.



# Land Use History

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# Development of a Program

- 1979 – Mill Creek evaluated for anadromous fish potential (CH2M Hill).
- 1980 – Spawning surveys begin (UC Cooperative Extension).
- 1992 – Surveys indicate extensive coho spawning and rearing in Mill Creek (Jones and Stokes).
- 1993 – Inception of Fish, Farm and Forest Communities Coalition.
- 1994 – Rellim Redwood initiates aquatics monitoring in Mill Creek.
- 2002 – Mill Creek Monitoring Program continues aquatics monitoring.



# Program Description

- **Adult escapement surveys** – Spawning surveys for Chinook and coho salmon (1993 through 2007).
- **Smolt outmigrant trapping** – smolt production estimates (1994 through 2007).
- **Stream Habitat Surveys** (1994 and 2002-2007)
- **Juvenile estimates** – emphasis on coho salmon, periodic estimates for steelhead and cutthroat trout (1994 through 2007).



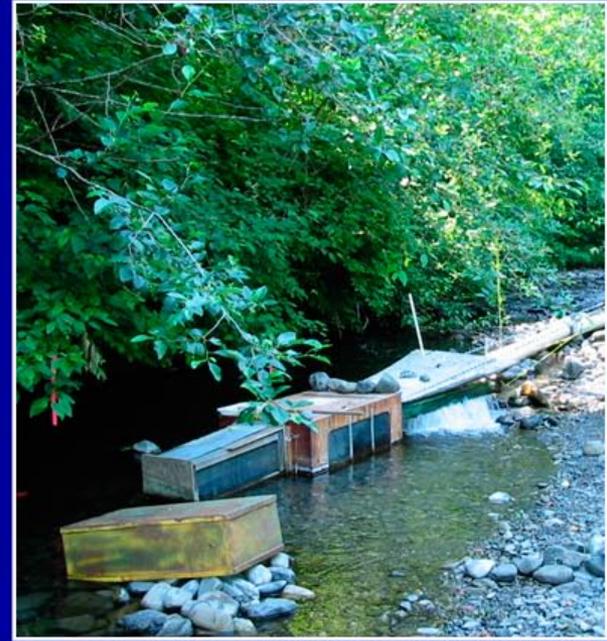
# Spawner Escapement Surveys

- Survey Coverage
  - 10-12 miles of Mill Creek
- Duration of Survey
  - November through February
- Data Collected
  - Minimum escapement estimate
  - Run timing
  - Age class information (scales)
  - Redd number and locations
  - Hatchery influence



# Juvenile Outmigrant Trapping

- **Trap Locations**
  - East Fork Mill Creek
  - West Branch Mill Creek
- **Trap Duration**
  - February through July
- **Data Collected**
  1. Species composition
  2. Outmigration timing
  3. Smolt production estimates
  4. Size distribution



# Species Composition



- Chinook Salmon
- Coho Salmon
- Steelhead
- Coastal Cutthroat Trout
- Chum Salmon
- Pacific Lamprey
- Brook Lamprey
- Klamath Small Scale Sucker
- Coast Range Sculpin
- Prickly Sculpin
- Stickleback

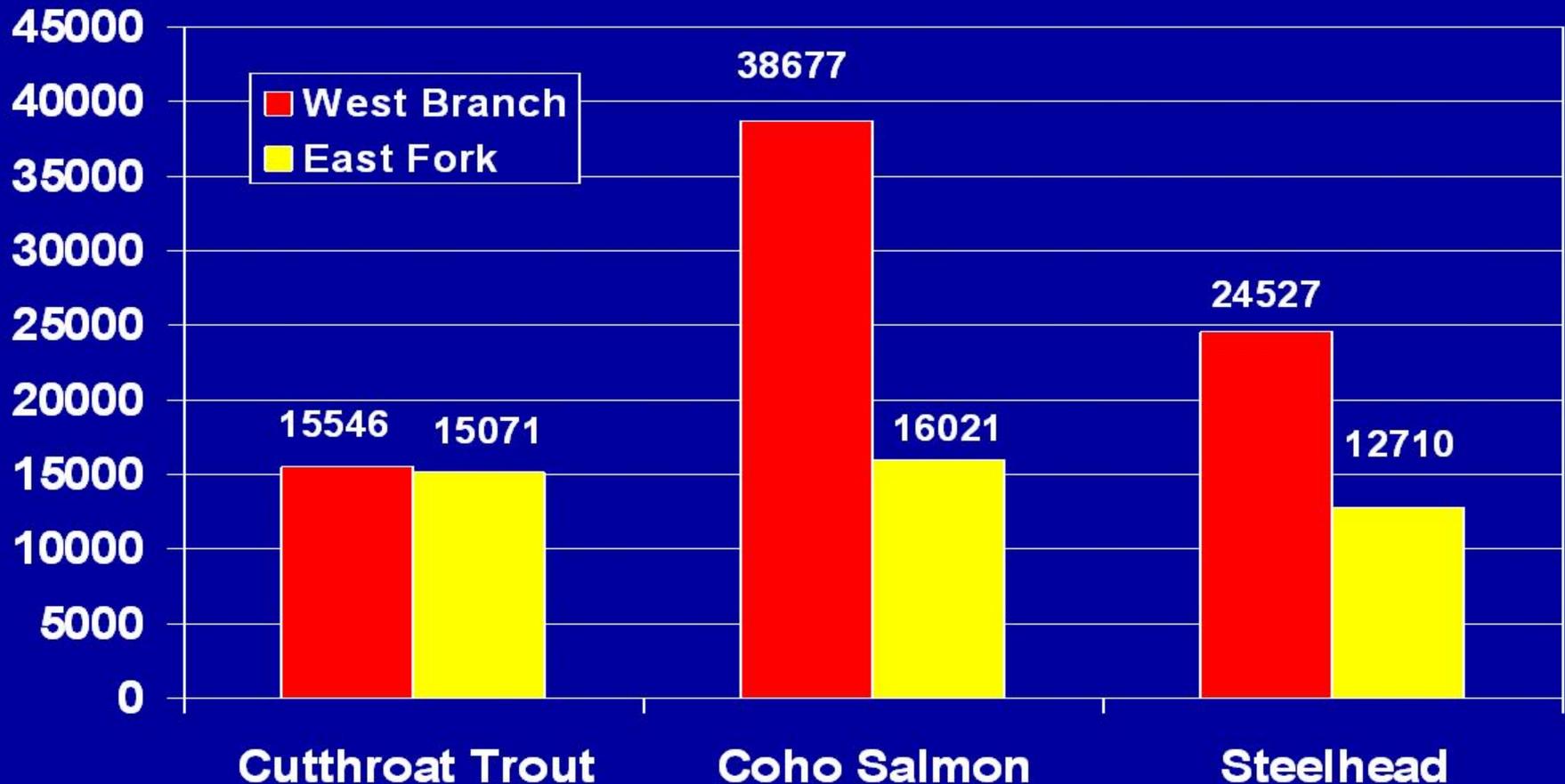


# Species Composition



# Salmonid Smolt Production

Eleven Year Cumulative Salmonid Smolt Production (1994-2005)  
in the West Branch and East Fork of Mill Creek

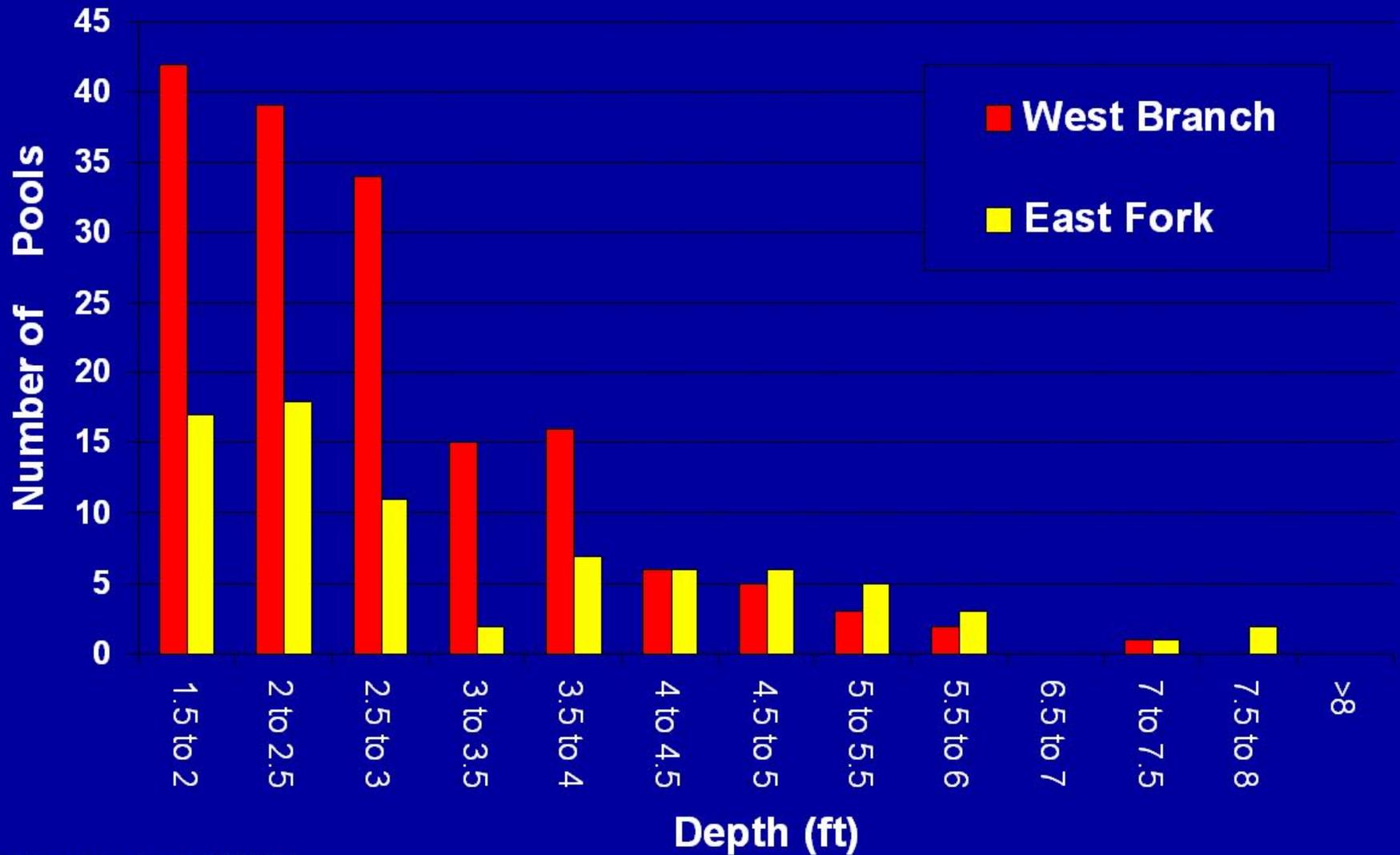


# Fish Habitat Surveys

- **Survey Coverage**
  - Extent of anadromy
- **Survey Duration**
  - September
- **Data collected**
  - Ratio of pool/run/riffle habitat
  - Mean & max depths of habitats
  - % canopy cover
  - Stream gradient

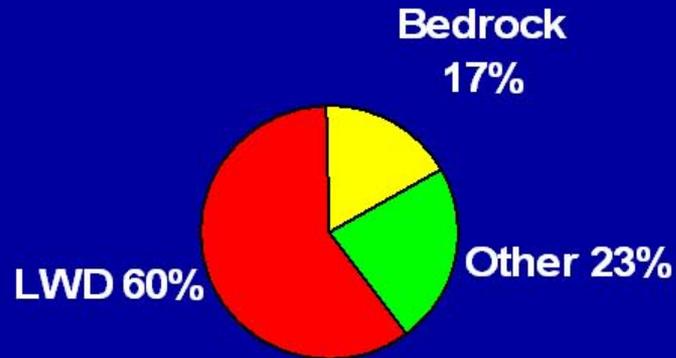


# Pool Frequency and Depth



# Pool Formation

## West Branch Mill Creek

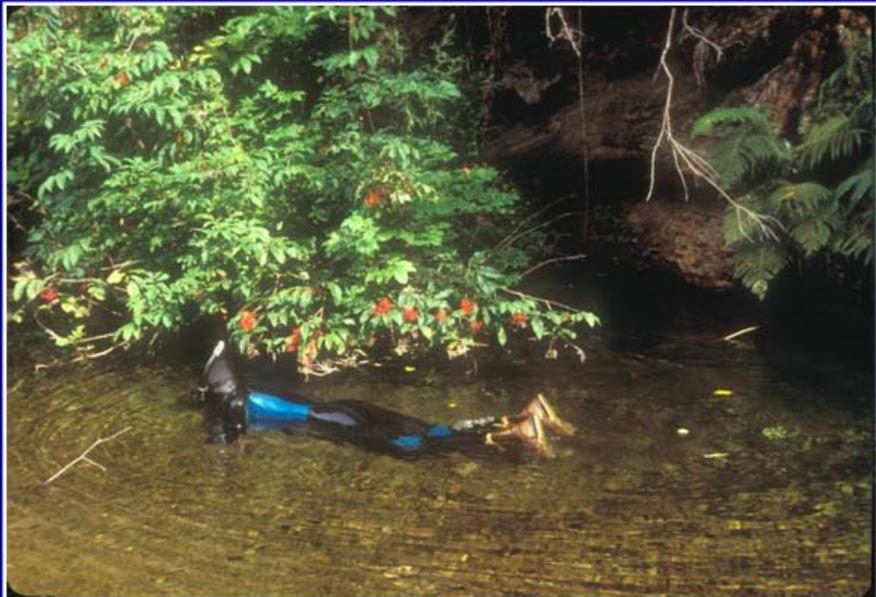


## East Fork Mill Creek



# Summer Dive Surveys

- **Data Collected**
  - Survey for presence of anadromous and resident species
  - Identify the upper extent of anadromous waters
  - Summer population estimates for coho, steelhead and cutthroat trout



# Summer Electrofishing Surveys

- **Data Collected**

- Survey for presence of anadromous and resident species
- Identify the upper extent of anadromous waters
- Summer population estimates for coho, steelhead and cutthroat trout



# Overwinter Survival

- Determine population stability of coho salmon by monitoring over-winter survival.
- Use over-winter survival data to help identify needs for habitat enhancement.
- Compare Mill Creek over-winter survival with over-winter survival of other watersheds



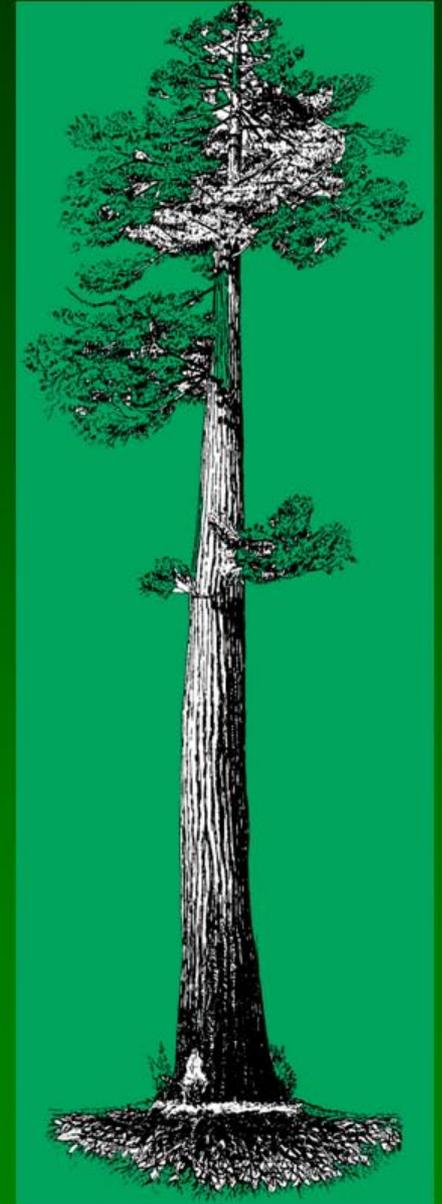
# Future Goals of the Fisheries Program

- Continue monitoring salmonid production and trends within the basin.
- Implement upslope and instream restoration (i.e. road decommissioning and large wood placement.)
- Monitor change in key instream habitat parameters.

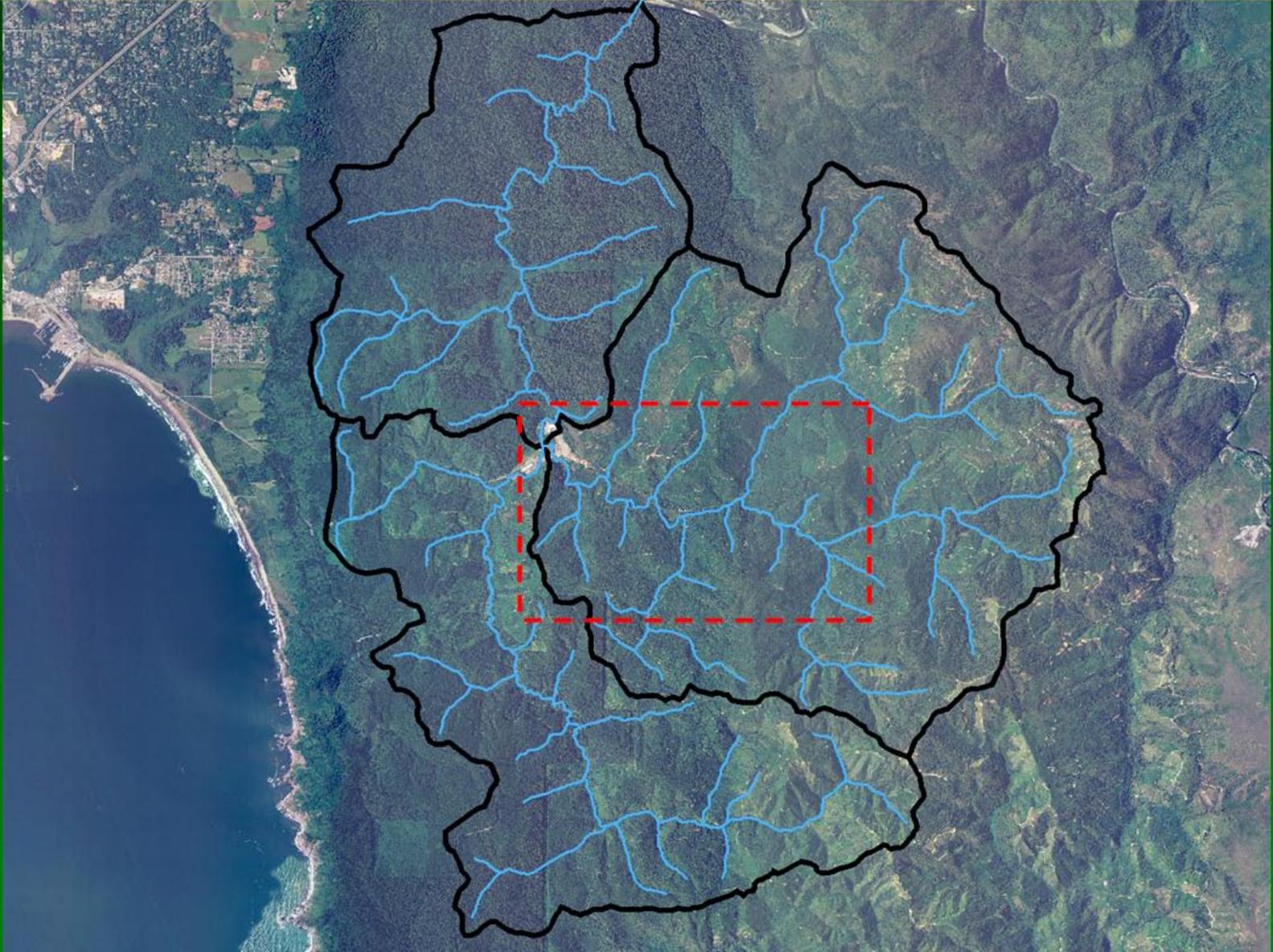


# *Mill Creek Acquisition*

## *Instream Habitat Improvements*



# East Fork Mill Creek In-Stream Habitat Enhancement



# The Problem.....



# Diesel Powered Windstorm

















Thanks to.....



# Forestry Update

*...the primary goal [is] that the Property shall be restored to late seral forest characteristics and associated natural functions that maximize benefits to the salmonid species of its streams and wildlife associated with late seral forest.*

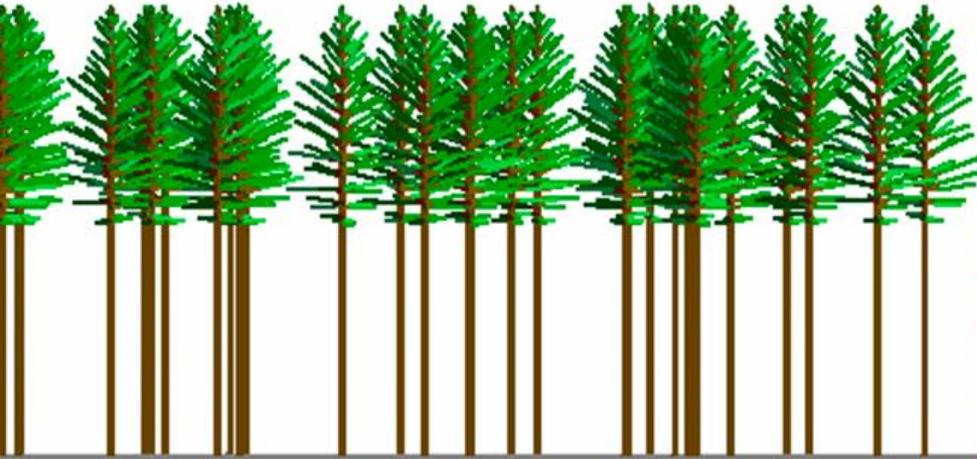
*Agreement of Terms and Conditions, 6-May-2002*

# Old-Growth Stand Structure



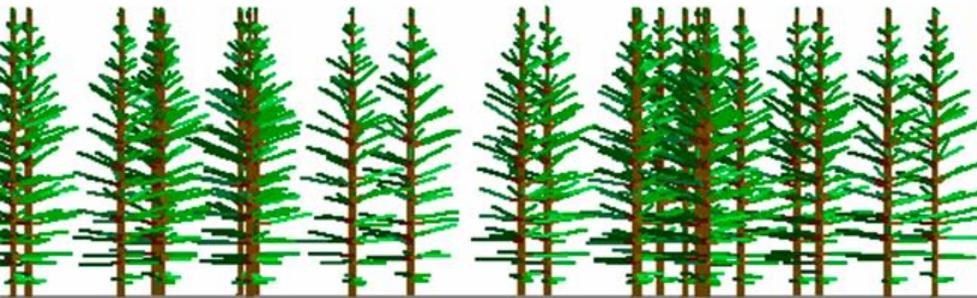
## Characteristics

- Deep, multi-layered canopies
- Range of tree ages and sizes
- Shade tolerant species
- Large snags, downed logs
- Complex & long lived



## 11-24 year stands

- All Surveyed
- Prioritized >500tpa



# Major Objectives

- Tree Growth
- Forest Health
- Historic Species
- Fire
- Habitat



# Results Redwood National Park

Unthinned



- 25 Year Growth Response
- Trees 54 Yrs Old

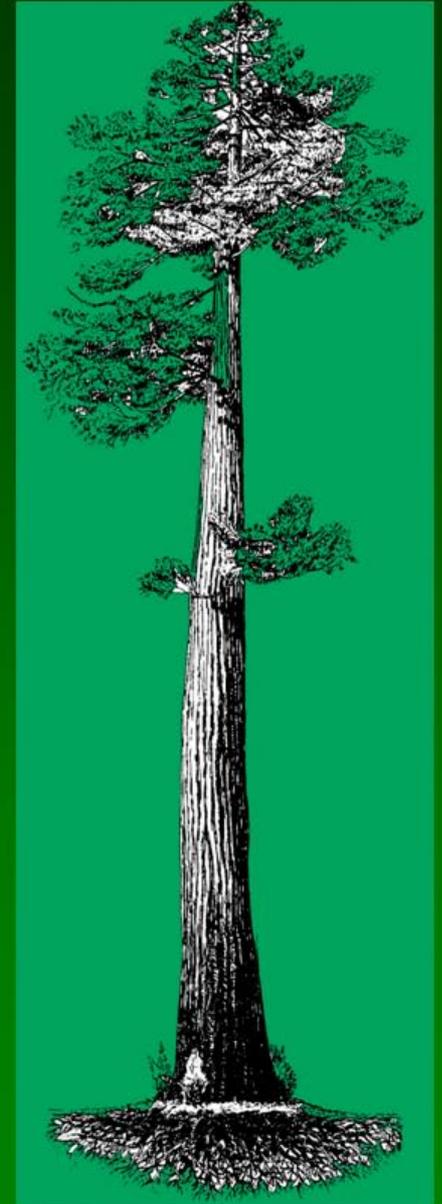
Thinned



- 1080 acres treated
- 600 acres to treat this year
- Long term monitoring underway

# *Mill Creek Acquisition*

## *Native Plant Nursery*



# *Mill Creek Native Plant Nursery*



# *Mill Creek Nursery Grown Tree Planted in Removed Road Crossing*



**Mill Creek Nursery grown trees are planted in recently removed roads at stream crossings. The trees accelerate natural vegetation succession.**

# *Plant Material Collection Techniques*

Local Seed  
Collection



Transplants from Roads  
Scheduled for Removal



Stem Cutting from Mill Creek Tree Stumps



# *Genetic Integrity Policy*

- In order to maintain the genetic integrity and diversity of native California plants, all transplants will be from local populations.

# *Community Partners*

# *Del Norte High Academy of Natural Resources*



**Students are provided hands-on learning experience that targets watershed restoration and is incorporated into classroom curriculum.**

# *AmeriCorps Watershed Stewards*



Plant Collection Strategy Support

Redwood Stump Sprout  
Training to Academy of  
Natural Resources



**Watershed stewards serve one year conducting invaluable support to local natural resource professionals involved with watershed restoration.**

# California Conservation Corps



**Young adults plant trees while accomplishing the Corps mission to protect & restore natural resources. Crews will plant 7,000 Mill Creek Nursery grown trees this year at Mill Creek.**

# *Local Workforce Support*

One Stop Work Force  
Center at Rural Human  
Services

**Temporary Work  
Force workers  
collected over 3,000  
trees from roads  
scheduled for  
removal.**



# *Funding*

- Save the Redwoods League
- Wildlife Conservation Board/Smith River Alliance



# ***General Plan Amendment Process***

***Project Introduction Meeting***

***Presented by:***

***Petra Unger***

***Curtis Alling***

***June 21, 2007***

**EDAW | AECOM**





# Purpose of the General Plan Amendment

- *To integrate the unit into the larger framework of the existing Redwood State and National Park Management Plan*
- *To serve as the primary management document for the park unit*
- *To establish the park unit's purpose, vision, long-term goals and guidelines*
- *To define a comprehensive framework that guides park unit development, ongoing management and public use*



# General Plan Amendment Process:

- *Document existing conditions (ongoing)*
- *Identify and inform stakeholders (ongoing)*
- *Identify issues and concerns (late summer 2007)*
- *Develop alternatives for site use (fall 2007)*
- *Identify preferred alternative (winter 2008)*
- *Circulate Preliminary General Plan Amendment and Draft EIR for public review (summer 2008)*

# Purpose of the EIR



- *To analyze the preferred alternative's significant effects on the environment*
- *Environmental information for public disclosure and decisions about the General Plan*

A vertical strip on the left side of the slide shows a forest scene with several tree trunks and green foliage. The background of the rest of the slide is a solid dark green color.

## EIR Process:

- *Notice of Preparations (NOP)*
- *Scoping (agency and public input on what topics need to be analyzed in the EIR)*
- *Preparation of Preliminary GPA/Draft EIR*
- *Public and Agency Review of Draft EIR (45 days)*
- *Final GPA/Final EIR*
- *State Parks Commission decides whether to adopt the GPA*



# Partners in Planning

- *California State Parks: North Coast Redwoods District*
- *GPA consultant: EDAW is lead consultant, Mad River Biologists & Pacific Watershed Associates are sub-consultants*
- *Mill Creek Advisory Committee*
- *National Park Service*
- *Local community*
- *Stakeholder groups*
- *Park visitors/users*

# General Plan Amendment Timeline

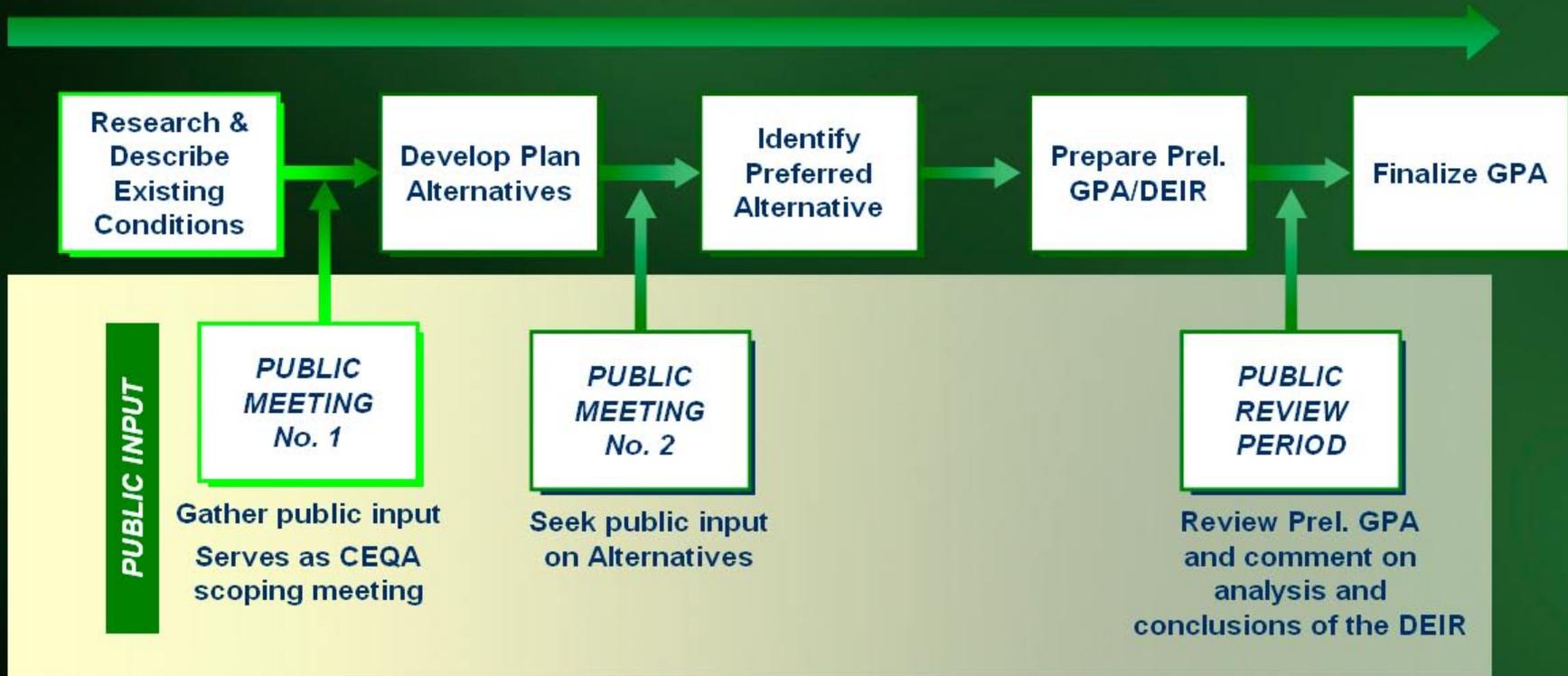
Summer  
2007

Fall  
2007

Winter  
2008

Summer  
2008

Winter  
2009





## Public and Stakeholder Comment

- *What is your vision for the future of the park unit?*
- *What are your key concerns about the park unit's environment?*
- *What improvements would you like to see?*
- *Do you have information about the park unit that would be helpful to the planning process?*



# Opportunities for Public Input

- *Today – Comment sheets*
- *Public Workshop No.1 – GPA and EIR Scoping Meeting*
- *Public Workshop No.2 – Alternatives*
- *Review Public Draft GPA and EIR*
- *Contact DPR by email or phone*
- *Follow the planning process on the Park's website at [www.parks.ca.gov](http://www.parks.ca.gov) (search for Del Norte Coast Redwoods)*