



GRIZZLY CREEK & THE VAN DUZEN REDWOOD GROVES

This area is defined by the ancient redwood groves along the Van Duzen River located between the confluence with the Eel River and Grizzly Creek State Park. The Van Duzen River flows freely for 63 miles from the headwaters to the confluence with the Eel River at the Eel River delta. The watershed drains 429 square miles of Humboldt and Trinity County and ranges in elevation from 60 feet to over 5,000. Most of the area is redwood and mixed redwood/Douglas-fir forest. Towards the drier eastern edge the forest gives way to open grassland with oak woodland and Douglas-fir forest. State Highway 36, a major transportation corridor, bisects the area.



I. Resource Values

Natural

- **Ancient redwood groves** in State and County Park ownership include Grizzly Creek Redwoods State Park, Cheatham Grove, Swimmers Delight, Pamplin Grove and Humboldt Grove. Outside these protected groves are other areas of ancient redwood in private ownership.
- The **Van Duzen River** is a major tributary to the Eel River system. The stretch from the confluence with the Eel River to Dinsmore Bridge is designated under the Wild and Scenic Rivers program.

Plants and Animals

- **Marbled murrelets** occupy ancient redwood groves'. Grizzly Creek State Park is believed to be their most easterly nesting location.
- **Northern Spotted Owl** are found in several of the redwood groves and on surrounding mature forest.
- The following species of **salmon and trout** are found in the area's streams.
 - *Coho salmon* are limited to the lower reaches of the Van Duzen watershed, including Grizzly Creek.
 - *Chinook salmon* are found in the lower and middle reaches of the Van Duzen watershed. They leave the rivers in June and hence are less vulnerable to low summer flows.
 - *Steelhead trout* are found in much of the Van Duzen watershed. Winter-run steelhead is more widely distributed and more viable than summer-run steelhead that are threatened by low summer flows. The Van Duzen is the most southerly of the southern steelhead trout ESU.
 - *Coastal cutthroat trout*.

- **Amphibians** are found throughout the rivers, creeks and swales. They are relatively poorly studied, although it is know there is habitat for the endangered southern torrent salamander

Cultural

- The area was once home to the **Nongatl tribe**. Like the neighboring Mattole and Sinkyone tribes they were decimated in the 1800s. Remaining tribal members were spread between Round Valley and Hoopa reservations. Most of the known sites are located upstream from the redwood parks. It is likely that downstream sites were buried with sediment when the river flooded.
- **Timber harvest** began in late 1800's and accelerated in the 1940s as mechanical development and lumber demand expanded following World War Two.

Recreation

- **Swimming** has long been a favorite swimming pastime on the Van Duzen River. Warm summer days and deep swimming holes draw people to the river. Favorite spots are at Grizzly Creek and Swimmers Delight.

Until the 1960s the State Park had a lifeguard on duty all summer, but since the floods of the 1960's the pools have filled up and the swimmers largely moved on. The same is happening at Swimmers Delight and other popular areas as deep pools are filling with gravel and sediment.

- **Fishing** for salmon and trout is another popular way to spend time on the river. There has been a steady and dramatic decline, especially within Grizzly Creek, in recent years.

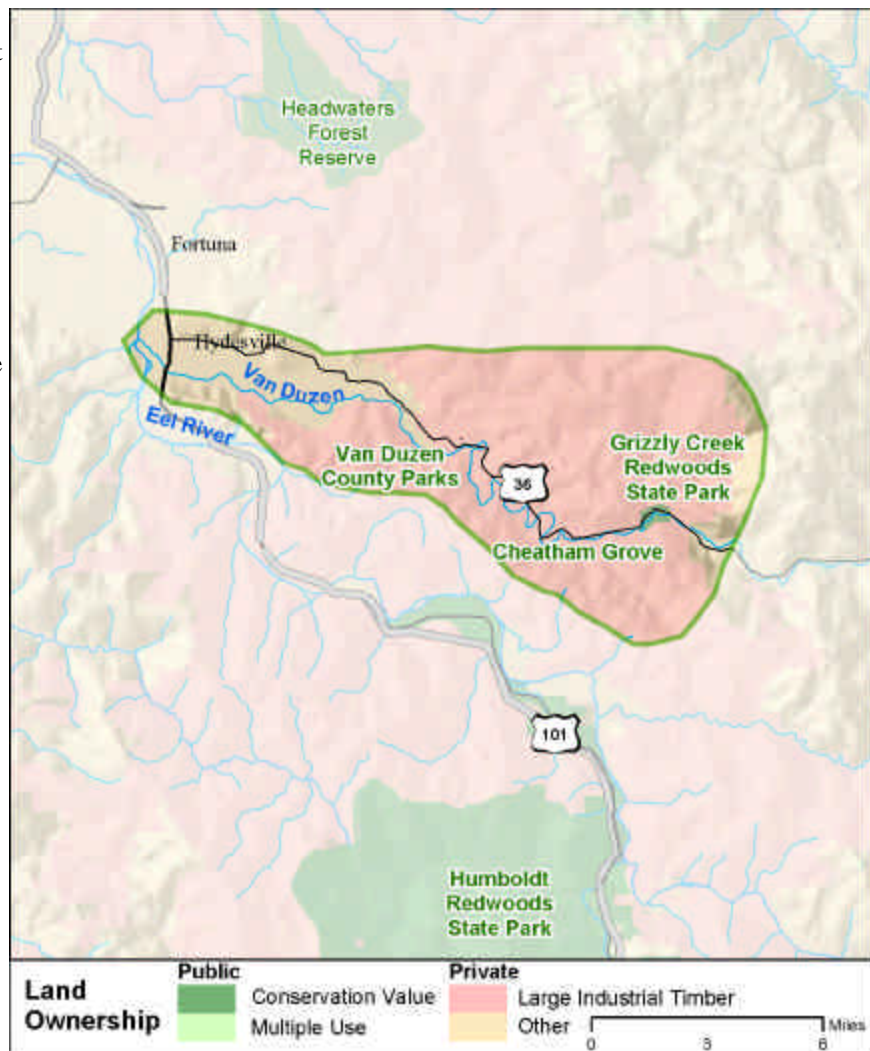
- **Hiking**, although limited by the small size of the parks, is a popular pastime in the redwood groves.

- **Camping** is available in both State and County parks.

Visual

- **Scenic corridor** of Highway 36, especially around the State and County parks.

- Van Duzen River



II. Community Values

Land ownership

- **Industrial timber land** covers much of the area. The Pacific Lumber Company owns the majority of the land in the area, with large tracts owned by Simpson and Sierra Pacific Industries to the north and east.

- **Large ranches** towards eastern edge of study area.

- Grizzly Creek Redwood **State Park**, including Cheatham Grove.

- Van Duzen **County Parks**, including Pamplin Grove, Swimmer's Delight, and Humboldt Grove.

- **Residential subdivisions** in the City of Carlotta

Economics

- Traditionally the region's economy has been based on **primary industries**, mainly timber, with some ranching, and fishing.

- Increasingly **recreation and tourism** are becoming important. During the summer as many as 70,000 people come to recreate in the area's Parks.



III. Opportunities and Threats

Erosion

- A highly **active tectonic setting**, combined with sensitive terrain and high rainfall, makes the Van Duzen River watershed one of the most erodible watersheds in the United States. In turn there is a high natural rates of sediment delivery from hill slopes to the stream channels.
- Due to the local geology and intensive land management techniques the watershed has been listed as **Sediment Impaired** under section 303(d) of the Clean Water Act. The beneficial uses for the Van Duzen River identified under the listing are (a) cold freshwater habitat (COLD), (b) migration of aquatic organisms, (c) habitat necessary for survival and maintenance of plants or animals established under state or federal law as rare, threatened or endangered, and (d) spawning, reproduction and/or early development habitat.
 - Erosion on *Grizzly Creek and Stevens Creek* has created a huge slide with a tremendous logjam caused by poorly located roads that regularly fail and are reconstructed.
 - Erosion moving down *Van Duzen* mainstem from upstream.
 - Erosion has undercut banks and led to loss of ancient trees and park facilities.
- Aggressive **timber harvest** on unstable slopes impacts the ancient redwood groves and aquatic habitat.
- **Roads** crisscross the region. The primary roads are highway 36 and the associated county roads. Beyond these there are many private ranching and logging roads. Where poorly located, constructed or maintained these can have a serious impact on streams through erosion.
- **Intensive land management** on steep and unstable terrain creates serious erosion problems with extensive sediment delivery to the already impaired streams.

Aquatic

- **Floods** (1955, 1964, 1965, and others) deposited many feet of silt over the old riverbed from the heavily harvested hillsides. Old-timers remember when the Van Duzen looked like the Smith River - with deep pools, cold water, and rocky bed. Since the 1960's the river has been converted to a wide gravel-lined channel with slugs of sediment and debris that move slowly downstream, plugging up pools as they go.
- There has been a widespread and catastrophic **decline in salmon and trout habitat** caused by many of the factors listed below:
 - *Aggradation* of lower mainstem channel, persistent from 1964 flood event, restricts salmon passage to upstream spawning and rearing grounds, especially during low-flow years.
 - *Invasive species* such as the squawfish, western roach & Sacramento pike minnow causing heavy mortality among juveniles. Squawfish thrive in warm, shallow conditions created when the river aggrades.
 - *Sedimentation* in pools is limiting spawning and rearing habitat.

- *Paucity of large woody debris* further impairs habitat.
- *Riparian vegetation* is slowly recovering from harvest and flood damage. Many stream reaches lack canopy cover that creates shade and moderates summer temperatures. Spawning salmon and trout cannot survive in warm water.
- Highway *culverts* block fish passage to suitable upstream fish habitat.
- *Gravel mining* at the confluence of the Van Duzen and the Eel River affects channel alignment and can block fish passage.

Terrestrial

- **Forest fragmentation** caused by continuous timber harvest has disrupted the forest's natural connections. The ancient redwood groves are now isolated islands surrounded by young forest on commercial timberland. Many of the animals that rely on intact ancient forest are endangered.
- The presence of **large landowners** has limited rural subdivision and development in the area.
- The State Park campground, located in the ancient redwood grove, has a detrimental effect on the **viability of marbled murrelet nesting**. Known and potential nest predators, including ravens, crows, Stellar's jay, raccoons and squirrels, are attracted to the campground by the presence of food and trash.
- The State Park **campground** is extremely close to the highway that seriously impairs the experience of the Park.

IV. Conservation Action

Current

- Under the Pacific Lumber **Habitat Conservation Plan** (PALCO HCP) the company is required to complete watershed assessments every five-years. These are used to adjust future timber harvest regulation to the local environment to safeguard habitat for threatened and endangered species and prevent further impairment of the streams.
- Under the Headwaters Agreement 12 **Marbled Murrelet Conservation Areas** (MMCA), including one at Grizzly Creek, were set aside from timber harvest for 50-years. The appropriation for purchase of Headwaters (AB 1986) included funds to purchase the Grizzly Creek MMCA grove. The State recently acquired 716 acres of the 1,419-acre Grizzly Creek (MMCA) for **addition to Grizzly Creek State Park**. They retain an option (5-years from the original agreement) to purchase additional lands within the MMCA, pending available funds. Once the option expires a determination will be made whether the remaining portions of the Grizzly Creek MMCA be managed as an MMCA or released for operation consistent with the HCP.
- **Stream monitoring** by the Friends of the Van Duzen is underway at Grizzly Creek, Rainbow Bridge, Hely Creek, and on the Van Duzen near Carlotta. Cuddeback school is planning a monitoring project on Fox Creek.
- **Stream restoration** on Fox Creek by Cuddeback School in collaboration with Eel River Watershed Improvement Group (ERWIG).

Prospective

- **Land acquisition** of (a) old growth redwoods, (b) critical watersheds land supporting the redwood groves, and (c) to provide connectivity between the Van Duzen Groves and the region's other protected ancient redwood forest.
- **Relocate state park campground** from ancient redwood grove to reduce disruption of murrelet nest and improve the visitor experience.
- Road **storm proofing** to reduce sediment yields and improve aquatic quality.
- Avoid **disturbance** in steep headwaters and sensitive hillslopes
- Encourage adoption of **silviculture techniques** that protect sensitive viewsheds along highway 36 and around the State and County Parks.
- Work with County to have Highway 36 designated as a **scenic highway** with associated viewshed and development protection.
- **Stream restoration** to improve aquatic habitat, including alteration of culverts that currently block fish passage.
- **Halt salvage logging** of old-growth trees that fall into the Van Duzen when banks are undermined. If fallen trees are left in the river (anchored if necessary) they can help protect the bank from further erosion in addition to creating fish habitat.
- Expand **monitoring network** to include additional stations and measurement of temperature and sediment on a continuous basis.

V. Potential Partners

California State Parks
California Department of Transportation
California Department of Fish and Game
California Department of Forestry & Fire Protection
State Water Resources Control Board
Humboldt County
Humboldt County Parks
Save-the-Redwoods League
Friends of the Van Duzen
Northcoast Regional Land Trust
Buckeye Land Conservancy
Eel River Watershed Improvement Group
Cuddeback School
Bridgeville School
Private owners - PALCO / Stimson / SPI / others

VI. Linkages

- The **Headwaters Forest Reserve** lies about 12 miles to the northwest.
- **Humboldt Redwoods State Park** is 2 miles southwest from Cheatham Grove over the first ridge as the eagle flies.
- The headwaters of the **Van Duzen abut the Mad River** watershed.
- The Van Duzen enters the Eel River and flows through the Eel River Delta to the **Pacific Ocean**.

VII. References

- US EPA, 1999, Van Duzen and Yager Creek TMDL for Sediment