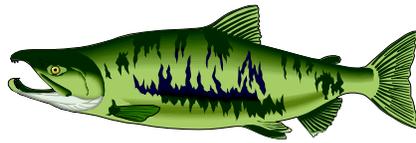


# **EUCHRE CREEK WATERSHED**

## **ACTION PLAN**



### **Prepared for**

The Euchre Creek Watershed Council

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## **ABSTRACT**

The *Euchre Creek Watershed Action Plan* was prepared for the Euchre Creek Watershed Council whose members are dedicated to sustaining the health of their watershed. This document utilizes detailed information about the Euchre Creek watershed gathered in the *Euchre Creek Watershed Assessment* which followed guidelines described in the *Governor's Watershed Enhancement Board's 1999 Draft Oregon Watershed Assessment Manual*. Funding was provided by the Oregon Watershed Enhancement Board, Oregon Department of Environmental Quality, United States Bureau of Land Management, Oregon Department of Agriculture, Curry County Soil and Water Conservation District, and Oregon State University Extension Service.

## **ACKNOWLEDGEMENTS**

The completion of the *Euchre Creek Watershed Action Plan* was accomplished through the combined effort of private citizens, watershed council members, contracted technical specialists, and local state and federal government agencies. The South Coast Watershed Council would like to thank the following people who generously provided time and energy to improve the quality of the Assessment and Action Plan. Additional people helped whose names are not included below. We also acknowledge them.

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## **EUCHRE CREEK WATERSHED ASSESSMENT SUMMARY**

The following is an abbreviated summary of a much larger, in-depth watershed assessment available from the South Coast Watershed Office.

### **Introduction**

The Euchre Creek watershed is among the smallest coastal rivers in southern Oregon. Euchre Creek is approximately 14 miles long and drains about 23,831 acres or 37 square miles. Flowing in a southwesterly direction the Euchre mainstem empties into the Pacific Ocean at Ophir, Oregon. Elevations in the watershed range from sea level to approximately 3,080 feet. Major tributaries include Cedar Creek and Boulder Creek. The lower few miles of the river lies on a relatively low gradient coastal floodplain. The upper portion of the basin is characterized by steeply sloped forested areas with narrow valleys and tributary streams that have moderately steep to very steep gradient. Rural residential development, grazing, and other agricultural uses are the dominant land uses in the lower portion of the basin.

### **History**

Most Curry County watersheds have received varying impacts from Euro-American populations during the past 150 years (1850 – 2000). The general landscape pattern for Curry streams and rivers is: timber in the uplands (on public & private industrial timberlands) flowing down onto broader floodplains in the lowlands, where agriculture and some rural residential use predominates. Euchre Creek timberlands were heavily cut in the 1950's and 60's. At one time there were 15 timber mills operating in the Euchre Creek area. Agricultural use is limited to a small area in the bottomlands near Highway 101. The lower ¼ mile of Euchre Creek has been diked and diverted from its historical pattern of a broad wetland into a narrow, confined channel.

### **Watershed Issues**

The Euchre Creek Watershed Council identified a number of issues that are a concern in the Euchre Creek system including; forest practices, especially in the mid-1900's, grazing in riparian areas, water use for pastures and the golf course, impacts of the golf course itself, potential water quality issues with the Tamco Mill, predators, and streambank damage due to floods.

### **Ecoregions**

Southern Oregon Coastal Mountains make up 76 percent of the watershed, with steep to very steep gradients, high rates of erosion, and high stream densities. Rainfall averages 79-140" per year. High winds, landslides and fires are expected natural disturbances.

Coastal Uplands cover 24 percent of the watershed and roughly follow the historic Sitka spruce distribution. High and low gradient habitats are present, with slow moving earthflows common on the hillslopes and many beaver expected in the low gradient streams.

### **Channel Habitat Types**

Of the 75 miles surveyed in Euchre Creek, approximately 20 miles were identified as highly responsive/sensitive channels; including floodplain channels, estuary channel, low gradient/moderate confinement (LM), and moderate gradient/moderate confinement (MM). LM and MM channels are the most responsive to habitat enhancement efforts. Over two-thirds of the channels identified are in steep or moderately steep hillslope confined valleys.

### **Fish and Fish Habitat Assessment**

Aquatic habitat inventories on Euchre Creek and Boulder Creek in 1995 indicate; good shade, good bank stability, and high quality habitat in Boulder Creek reach 2. The number of pools is fair, but quality is lacking. Fine sediments in gravel are common and width-to-depth ratios are less than desirable, indicating spawning habitat may be limited. Large wood is sparse, except in Boulder Creek reach 2.

Twenty-one barriers are identified, mostly in Cedar Creek and Lower Euchre Creek. Nine are identified as barriers/possible barriers to adult migration. Twelve are barriers/possible barriers to juvenile migration.

Chinook are distributed in the lower two-thirds of Cedar Creek, and the upper 80 percent of Euchre Creek. Steelhead have more extensive distribution in Cedar Creek and use more of the mainstem tributaries. Coho use is not reported. Hatchery inputs of chinook have occurred in the basin, though at very low levels since the early 1990's.

### **Water Quality Assessment**

Euchre Creek has no water quality data, and is not rated on the Oregon Water Quality Index. Temperatures (7-day maximums) are fairly cool relative to the South Coast, especially in Boulder Creek and the mainstem Euchre above Boulder Creek. Pea Creek, Cedar Creek (at mouth), and Euchre Creek at Hwy 101 are reported in the high 60's and lower 70's.

### **Riparian (Shade) Assessment**

The highest potential increase in shade is on 5<sup>th</sup> order stream reaches in Euchre and Cedar Creeks. Alder/hardwoods dominate shade in 98 miles of Euchre/Cedar stream reaches (includes all stream orders). Nine miles of riparian area are dominated by brush, and sixteen miles by pioneer vegetation. Sixteen miles of riparian zone have high reproduction and mature timber stands that are very valuable for high quality shade and recruitment of large wood.

### **Wetland Characterization and Functional Assessment**

An estimated 90 acres of wetlands (21 wetlands ID's) were assessed in the Euchre Creek watershed. Forty-five percent of the wetlands have been highly altered, and 36 percent have been altered very little. Nearly all are in the Lower Mainstem and have buffers of agricultural or forest lands. Half of the wetlands are connected to other waterbodies. Wetlands were assessed using aerial photographs and site visits are warranted for clarification.

### **Hydrologic Condition Assessment**

This assessment is based on runoff estimates for various landuses and soil cover conditions. Peak flow enhancement is an increase in the strongest, and potentially most destructive, part of the flood curve.

Euchre Creek watershed is rated as low risk for peak flow enhancement due to timber harvest and forest roads. Risk is rated as moderate to low on agricultural/range lands in Cedar and Lower Euchre, and moderate risk due to rural roads on the Lower Mainstem and Euchre Creek.

All of the roads rankings need to be re-assessed to incorporate revised road data. Road drainage and ditched/drainage wetland issues (flow alteration) are not addressed in this assessment.

### **Water Use**

Nearly a quarter of water rights in the Euchre Creek watershed are junior to the 1964 in-stream water right. Summer flows for all Euchre sub-basins are over-allocated, especially in October. Cedar Creek has the highest ranking for stream flow restoration. Consumptive use is low.

### **Sediment**

The assessment of sediment process in Euchre Creek focuses on the density of roads built on slopes greater than 50 percent, and the density of stream/road crossings. Lower density rankings are assumed to have less potential for contributing sediment than high. These rankings are relative to all South Coast subwatersheds.

All of Euchre subwatersheds are ranked low to moderate for density of roads on steep slopes. Cedar Creek and the Lower Mainstem Euchre are ranked moderate for crossing density, and the Upper Mainstem is ranked low to moderate.

## **EUCHRE CREEK WATERSHED SYNTHESIS**

The Euchre Creek watershed is within Coastal Uplands and Southern Oregon Coastal Mountain ecoregions. While natural erosion rates are high for both types, runoff is three times greater in the Coastal Mountains. Euchre Creek had very heavy logging with little re-forestation in the 50's and 60's resulting in extensive alder regeneration. Intensive land management caused a high incidence of landslides entering the upper mainstem. Fish populations during that time were nearly extirpated. Major modifications to the estuary and lower wetlands occurred with Highway 101 construction. Agricultural development in both the lower section of Euchre and parts of Cedar Creek caused considerable changes in channel patterns. Approximately 22 percent of the Euchre Creek watershed is publicly owned.

Channel habitat types are mostly confined by hillslopes though nearly 16 miles of stream are identified as highly responsive/sensitive types. Large conifers are rare, riffle habitat is moderate to undesirable, pools are numerous but simple, and sediment loads seem to be affecting habitat quality. Chinook and steelhead use the mainstem Euchre and Cedar Creek. Coho have been removed from the system through habitat changes, mostly in the lower watershed. Barriers to migration are identified, with several clustered in Cedar Creek.

The uppermost portion of Euchre Creek has low soil infiltration on steep, gravel-rich parent material, and high rainfall. Disturbance of this area from land management practices, floods, or fire could have direct and immediate effects on habitat in the mainstem. Cedar Creek and Lower Euchre Creek are ranked moderate for densities of road crossings.

Risk of peak flow enhancement (increased stream power) is moderate to low due to agriculture/residential development in Cedar Creek and Lower Euchre. Risk is rated moderate due to rural roads on both Lower Euchre and Cedar Creek

Stream temperature data shows Euchre Creek to be "cool to warm" with a maximum temperature of 70.9 recorded. Water leaving the forested lands are relatively cool, with most of the heating occurring in the lower section. Boulder Creek is the coolest tributary; Cedar Creek is the hottest, warming the mainstem. No other water quality data is available.

Riparian shade is fairly intact, with an average seven percent potential increase on Cedar Creek and six percent on Euchre Creek. Mature and high reproduction forests for recruitment of large wood are in short supply. Euchre Creek riparian areas are dominated by old alder stands, which have the potential of destabilizing large volumes of sediment stored within the floodplain when they die.

Ninety acres of wetlands are found in Euchre Creek watershed, mostly in the lower portion, near the estuary. Less than half are highly altered, with more than a third altered very little.

In-stream water rights for fish habitat are rarely met, even in normal flow years. Less than a quarter of the water rights are junior to the 1964 in-stream right.

**Limiting factors** to fish production appear to be: loss of rearing habitat at the mouth, lack of large wood and little recruitment, instability of sediments now, and the potential for large sediment volume to be mobilized as old alder stands deteriorate.

## **SUBWATERSHED SUMMARIES**

### **Lower Euchre Mainstem**

The Lower Euchre Creek Mainstem is partly contained in the Southern Oregon Coastal Mountains and partly in the Coastal Uplands. Most of the watershed is in forestry use, with 13 percent in agriculture/rural use.

Most stream channels in this subwatershed are confined by hillslopes (13 miles), with a large portion of stream miles in highly responsive/sensitive types (7 miles). Habitat surveys conducted in 1995 indicate a good amount of stream shade and bank stability, adequate number but poor quality pools, and little in-stream wood. The lower portions of the creek and its estuary have been considerably modified with dikes and ditches.

Coho have been eliminated from the system through habitat modification, but steelhead and chinook still use the mainstem and tributaries for spawning and rearing. Six barriers are identified in this subwatershed, four for juveniles, and two for adults.

Fifth order stream reaches had the highest potential increases in shade, with lower orders showing fairly small potential increases. No mature or high reproduction forests are identified in this subwatershed, though they are needed, as a source of large wood and high quality shade. This area has sixteen wetlands, many with good potential for restoration or protection.

Euchre Creek has low levels of consumptive water use, though stream flows are over-allocated for all of the spring and summer months. The 1964 in-stream flow right is rarely met. No chemical water quality data exists for Euchre Creek, though the watershed is being investigated for temperature, sedimentation, and flow modification with possible 303(d) listing. Stream temperatures in Euchre Creek often exceed the 64 degree standard, especially in this subwatershed.

Risk of peak flow enhancement (increased stream power) is rated as low for timber harvest and forest roads, and moderate for agricultural use and rural roads. When compared to all South Coast subwatersheds, the Lower Euchre Mainstem ranked low to moderate density for roads on steep slopes and moderate for overall density of stream crossings.

### **Upper Euchre Mainstem**

The Upper Euchre Mainstem is entirely contained within the Southern Oregon Coastal Mountains ecoregion and has no agricultural/rural residential use. Forest industries are active in the upper and middle portions of this subwatershed. Most of the stream reaches are confined by hillslopes, though three miles are classified as highly responsive/sensitive reaches, and nearly two miles as low gradient confined.

Both chinook and steelhead use the mainstem for spawning. Two barriers to migration are identified, one on a significant tributary to the east. Very few riparian conifers are

recorded in the 1995 ODFW stream survey, pool habitat is rated as moderate, riffle habitat as moderate to undesirable, and wood levels undesirable.

While no water chemistry data is available, the upper Euchre Mainstem has fairly cool temperatures. Two small wetlands are identified in the lower end of the Upper Mainstem with moderate to low levels of alteration.

A hydrologic assessment rated the Upper Mainstem as low risk for peak flow enhancement (increased stream power) due to timber harvest and forest roads, and not rated for rural roads or agricultural use. A considerable area in the high rainfall headwaters is composed of a high runoff, gravel rich soil type, which when combined with active forest management could have major impacts on fish habitat throughout the mainstem.

At present, when compared to all South Coast subwatersheds, the Upper Mainstem ranked low to moderate density for roads on steep slopes, and low to moderate density for stream crossings.

### **Cedar Creek**

Cedar Creek is almost evenly divided between the Southern Oregon Coastal Mountain and Coastal Upland ecoregions. Eighty-eight percent of the watershed is in forestry use, with the remaining 12 percent in agricultural/rural residential/golf course use, concentrated in the bottom of the valley. Most of the stream types are confined by hillslopes (12 miles), with a considerable number of miles in highly responsive/sensitive stream types (6 miles).

Chinook and steelhead use this stream for spawning, though many barriers to migration are identified. Stream temperatures are in the high 60's to low 70's at the mouth, above the 64-degree standard. No chemical water quality data is available.

Higher potential increases in stream shade are found in the 5<sup>th</sup> order stream reaches, with modest 5 percent increases on 2-4<sup>th</sup> order streams. Approximately 4 miles of mature and high reproduction forests are adjacent to stream channels, less than nine percent of the total length. Three wetlands are identified in this subwatershed, one at the golf course, and have moderate to low levels of alteration.

Cedar Creek subwatershed was rated as low risk of peak flow enhancement (increased stream power) due to timber harvest and forest roads, but moderate risk due to agricultural/rural residential use and rural roads. This subwatershed has considerable sized areas of low infiltration soils high in the watershed and on the valley bottom.

While consumptive water use is low, Cedar Creek is listed as a priority streamflow restoration area. Water is over allocated for all of the low flow months.

Analysis of present and future sediment sources ranked Cedar Creek low to moderate density of roads on steep slopes when compared to all South Coast subwatersheds. Cedar Creek ranked moderate density for stream crossings.

## **ACTION ITEMS**

This list is a product of a synthesis process by natural resource specialists with extensive experience on the South Coast, who reviewed and discussed the watershed assessment for Euchre Creek. Input from watershed councils is also incorporated. Actions are focused on addressing limiting factors and are listed in order of relative importance, based on the impressions of the resource specialists. For a more complete list of restoration, protection, outreach and assessment activities, refer to the Curry Action Plan. All action items are voluntary, with complete respect for private property rights.

### **1. Improve wetland connectivity in the Lower Mainstem**

Where possible, restore function, connection to a water body and potential vegetation in less than intact wetlands.

Where possible, protect intact wetlands.

Field check all wetlands listed in the Wetland Assessment and assess for functionality.

### **2. Control sediment sources in the headwaters.**

Assess all headwater roads and crossings for suitability, design and risk of failure.

Replace undersized or faulty culverts.

Treat road-fill failures.

Treat poorly drained roads.

Decommission roads where possible.

### **3. Acquire conservation easements**

Where possible, acquire conservation easements in the Lower Mainstem and Cedar Creek.

### **4. Encourage Lower Mainstem and Cedar Creek citizen involvement in water quality, water quantity and riparian vegetation issues.**

Work with landowners and residents on protecting riparian vegetation for shade and large wood.

Work with landowners and residents on protecting water quality from non-point source and point source pollution.

Work with landowners to investigate locations of wells and springs and other water quality and quantity concerns.

Encourage off-stream watering.

### **5. Riparian silviculture watershed wide.**

Plant riparian vegetation for shade and large wood values, where appropriate and with proper protection.

Encourage natural conifer regeneration where possible

Convert alder dominated stands to conifer, where appropriate

**6. Water quality monitoring**

Institute water quality measurements in addition to temperature, to identify limiting factors and provide feedback on restoration efforts.

Encourage volunteer monitoring and assessment in Cedar Creek.

**7. Identify sediment sensitive reaches in the Upper and Lower Mainstem and monitor for changes.**

**8. Add large wood to Mainstem and Cedar Creek.**

Identify reaches most likely to respond to addition of large wood.

**9. Maintain or protect mature riparian forests for wood and shade values.**

**10. Initiate weed control plan.**

Determine locations and species of noxious weeds.

Prioritize control measures.