

Introduction

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Overview

People from around the state and nation have focused their attention on the Illinois River Watershed because of the many natural resource concerns here. The primary concern is the threatened listing of the coho salmon and steelhead trout under the Endangered Species Act. Another concern is the native plant population that has been identified as containing the highest sensitive plant species in the Rogue Basin.

The Illinois River Watershed Assessment was undertaken at the request of the Illinois Valley Soil and Water Conservation District/Watershed Council to effectively monitor their program. They decided they needed a supporting document to show they were trying to do the right thing for supporting natural resources. Existing data focused on fishery issues and the Illinois Valley Soil and Water Conservation District/Watershed Council needed to look at additional natural resources. This lack of information and the inability to work in the Illinois Valley from a true watershed approach was the driving point for completing the Illinois River Watershed Assessment.

The objectives of the study are:

1. To address concerns in the basin from a watershed approach through partnering groups and agencies.
2. To enhance opportunities for irrigation water management that will benefit steelhead trout and coho salmon.
3. To identify common ground on which to address water and fish situations from a ground resource perspective.
4. To manage resources in a manner that is affordable and consistent with the objectives of private landowners and private land users.
5. To establish a factual baseline as to existing watershed conditions to form a basis for future resource conservation and management activities.

This assessment provides resource information to help local conservation agencies and residents increase their understanding of natural resource issues in the Illinois River Watershed. It will also provide baseline data in project areas that will enhance the opportunity for irrigation water management and will directly benefit steelhead and coho salmon. With the cooperation and support of Illinois Soil and Water Conservation District/Watershed Council, the Illinois River Watershed Assessment Team and other contributors as cited previously, this assessment has been developed.

Executive Summary

The Illinois River Watershed is located in Josephine, Del Norte and Curry counties and encompasses approximately 628,500 acres. Elevations approximately range from nearly 7,000 feet in the Siskiyou cold snow zone to 2,000 feet in the valleys. Steep slopes, sharp divides and rugged terrain are typical, especially in the headwater and lower canyon areas. Most slopes range between 11 and 60 percent, with the exception of a broad alluvial fan in the Cave Junction area, where most of the basin population resides and has dramatically increased in the last 30 years.

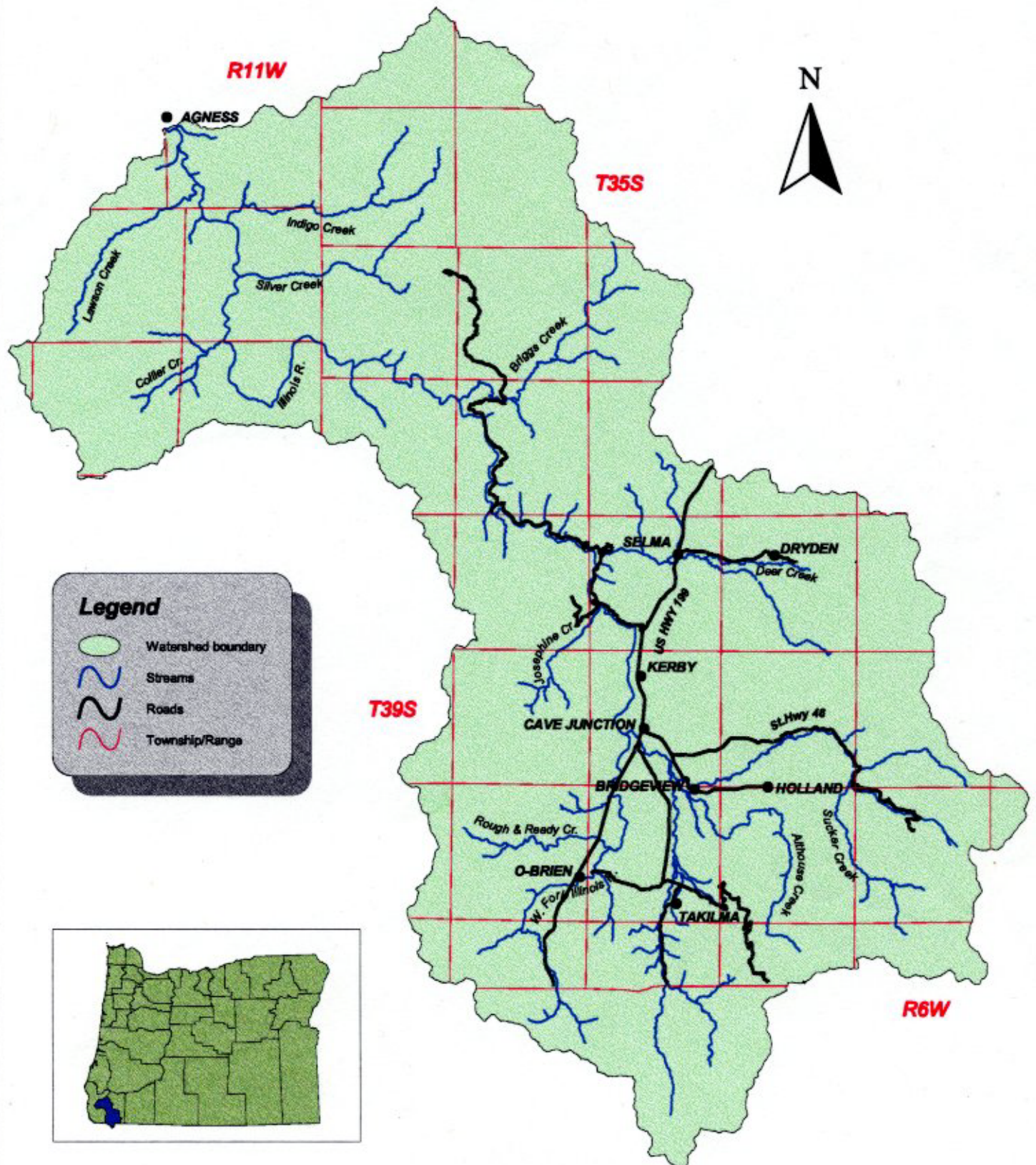
Most of the interior valleys are Bureau of Land Management and privately-owned forestland, while the majority of the watershed is US Forest Service land. The primary commercial land uses are timber production with some range, agriculture and recreational land. Many jobs in the area are tied to these activities. Current mining claims include: shale/hard rock, aggregate/sand and gravel, and clay quarries along with placer gold, lode gold and nickel activities.

Watershed health is an important issue in the study indicated by water quality. Oregon's Department of Environmental Quality has listed stream segments as water quality limited for temperature. In addition, there has been a loss of habitat and water quantity. These are important issues for fish rearing and mortality rates. The wild coho, steelhead, cutthroat, chinook and resident trout populations have declined, placing coho on the endangered species list as being threatened. Temperatures above 68 degrees Fahrenheit can jeopardize salmonids. Average daily maximums of 82.1 degrees Fahrenheit have been documented in several reaches in the watershed (Illinois Valley Watershed Council, 1995).

The goals of the Illinois Valley Soil and Water Conservation District/Watershed Council are to:

1. Improve water quality and quantity for all beneficial uses in the watershed.
2. Expand assistance to agricultural producers, ranchers and resource users in the watershed.
3. Assist woodland owners with conservation plans that include watershed health objectives.
4. Provide educational opportunities and informational programs to schools and the community.
5. Expand the role of participation by local, State and Federal agencies along with foundations and organizations as partners.

Illinois River Watershed



Historic Overview

Although fur trappers from the Hudson Bay company traveled in the basin during the 1820's and the 1830's, the discovery of gold in 1851 on Josephine Creek was the catalyst for early settlement of the Illinois River Basin. The most famous and richest gold workings in the basin occurred in Josephine Creek, Althouse Creek and Democrat Gulch watersheds and near Waldo. Mining towns such as Waldo and Kerby were quickly established to provide the basic goods and services needed by the miners. Waldo also became the first county seat for Josephine County. Although gold was the most highly sought metal, a significant amount of copper and chromium were also produced. Mining activities went through several cycles due to changes in economics and technologies. Large hydraulic placer mines operated into the late 1930's, and chromite mining was important into the late 1950's. Several large placer gold mines operated in the late 1970's and early 1980's due largely to high metal prices.

Agriculture came to the Illinois Valley shortly after the discovery of gold. Initially established to provide food for the mining communities, farming has continued to be an important part of the basin economy. Historically, there was not a lot of water, but it was adequate for small grain production, which required less. Today, the economic success of agriculture is dependent upon ample and reliable water resources for crop production. Water rights in the Illinois Basin date back to mid-1800's to secure water for this beneficial use. Today, larger acreages are in production, supporting a wider variety of crops, such as wine grapes, truck crops, hay and pasture.

The basin's timber resource has also been important from the beginning of settlement. Early settlers harvested timber for the construction of buildings and mining flumes for heating and cooking. The steep, rugged terrain precluded commercial logging activities until the 1940's when more advanced harvesting techniques and better transportation facilities became available. Today, logging and wood processing enterprises contribute to the basin economy, although not as much as in the 1970's.

The fishery resource in the valley is very valuable due to its contribution to recreational and offshore commercial fishing interest. Through oral accounts of the anadromous fisheries, the Illinois River Basin thrived with fish, particularly steelhead trout in the lower elevation streams. Coho and chinook populations were not thought to be very large due to a 16-foot natural barrier, Illinois Falls (at river mile 39.5), which would force these species to spawn below this point. Coho and chinook were able to access areas above the falls only during high flow periods, whereby they could make the jump. Winter steelhead were not discouraged by this. When four feet was blasted off the falls in 1921 and the fish ladder installed in 1955, coho and chinook were better able to access the upper Illinois River systems (Young, 1985).

Watershed Description

The Illinois River flows into the Rogue River at river mile 27, approximately 20 miles northeast of Gold Beach, Oregon. It is a major tributary of the Rogue River system and drains all of southwestern Josephine County and a small portion of eastern Curry County, Oregon. In addition, the headwaters of both the East and West Forks of the Illinois River

drain small areas of Del Norte County, California. The total area drained by the Illinois River is approximately 628,500 acres and makes up approximately one-fifth of the Rogue Basin system. This watershed contains 13 sub basins (see Appendix A, Map 4).

The terrain within the Illinois River Basin is rugged and steep, with the exception of the broad alluvial plain south and east of the City of Cave Junction, locally referred to as the Illinois Valley. Most of the population is located on this plain and a smaller alluvial plain in the Deer Creek watershed near the town of Selma. Little development has occurred outside these alluvial plains. Furthermore, the Federal Government owns or manages vast tracts of land within the basin, most of which are also outside these alluvial plains.

Groundwater is limited in many of the bedrock units underlying the Illinois River Basin. Water is generally contained only in the fractures since metamorphism has eliminated most of the primary porosity. These rock formations occur primarily in the highlands. Although precipitation is relatively high, recharge and water transmission are relatively poor where steep slopes and general low porosity cause rapid surface runoff and little infiltration. Alluvial material in the Deer Creek Valley and the Illinois Valley above Kerby has the greatest groundwater development potential. The recent alluvium is limited to active stream courses or flood plains. Water quality in the unconfined alluvial aquifer is generally good, but is highly susceptible to land surface contamination. Older alluvium underlying most of the valley is generally more compact and less susceptible to this type of contamination.

The central interior valley and foothills contain productive Douglas-fir dominated stands mixed with sugar pine, ponderosa pine, incense cedar and hardwoods. Low elevations surrounding the interior valley are dominated by Douglas-fir, as in the valley, but also contain tanoak. In the higher elevations, mixed conifer and white fir zones begin to appear (see Appendix B, Figure 1) (Illinois Valley Watershed Council, 1995).

Climate

The climate of the Illinois River Basin is sub-humid with marked marine influences. The dominance of moist marine air masses provides for relatively mild winters with temperatures occasionally dropping below freezing. During the winter months, most storms originate in the North Pacific. These storms bring cool, moist air to the basin. The coastal mountains, however, provide some protection from the more violent storms common to the Oregon Coast.

During the summer months, weather patterns come primarily from the south. As a result, the basin has warm, dry summers similar to the Mediterranean climate of California. The average frost-free period is about 170 days. Low humidity and high temperatures common in July and August result in high rates of evapotranspiration, with subsequent stress on the crops. Annual precipitation varies widely in the basin, ranging from an estimated high of 100 inches in the lower Illinois River Canyon area to about 35 inches per year in the basin boundary, east of Selma. Most precipitation falls between the winter months of November and April in the form of rain below 4,000 feet elevation and snow above 4,000 feet elevation. Less than 20 percent of the precipitation occurs during the

April 1 to October 31 irrigation season, and only two percent falls during the June to August time period when peak crop water requirements occur. These extreme variations in seasonal precipitation necessitate irrigation of farmlands to aid in production. Where terrain is steep, precipitation runs off rapidly. This is particularly true in areas of heavy clay soils overlying bedrock, areas of sparse natural vegetation or areas where vegetation has been removed (Illinois Valley Watershed Council, 1995).

Winter snowfall is of minimal significance on the valley floor, but increases at the higher elevations. A winter snowpack is usually present in the Grayback peak area from November through June, contributing to late spring and summer flows. The small area of this snowpack minimizes the positive effects on early summer flows in most years and almost never contributes to mid-summer flows. This typical low flow condition was exacerbated by a nine-year drought between 1985 and 1994. Rainfall between 1995 and 1998 has been at least 25 percent above the average. In 1997 rainfall was 6.07 inches below average, and 1999 will have the highest runoff since 1929.

References

Illinois Valley Watershed Council, Illinois River Watershed Assessment and Action Plan, 1995.

Young, W.H., Water Resources Department, Rogue River Basin Study, January 1985.