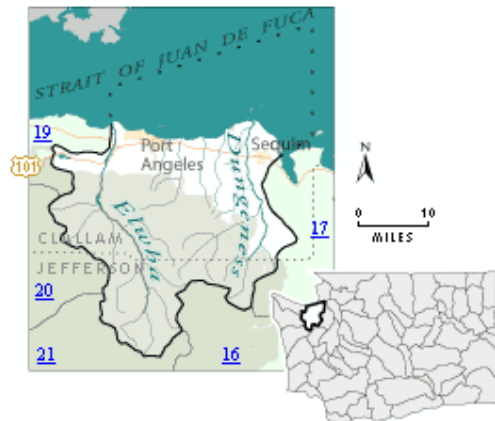


Water Resource Management in the Dungeness Watershed

Introduction

This document describes some of the recent efforts of state and local water resource managers, working with stakeholders, to address the growing water supply needs in the Dungeness River Watershed. This is part of an ongoing effort to inform local residents about the draft Instream Flow and Water Management Rule the Department of Ecology and local water resource managers are developing with input from interested citizens.

The rule will apply only to the eastern portion of Water Resource Inventory Area (WRIA) 18. Ecology will adopt a separate rule to cover the Elwha-Morse portion of WRIA 18.



Description of the watershed

The Dungeness River Watershed, on the northern end of Washington's Olympic Peninsula, lies in the rain shadow of the Olympic Mountains. The Dungeness River is 32 miles long and drops 7,300 feet – making it the second steepest river in the United States.



This area is one of the sunniest places in western Washington, with some parts of the watershed receiving only about 16 inches of rain each year. In Sequim, you can even find a native species of cactus, the brittle prickly pear.

Photo courtesy of www.desertnorthwest.com



INSTREAM FLOW & WATER MANAGEMENT RULES

An instream flow and water management rule sets the framework for making water resource decisions in a particular basin.

Elwha-Dungeness WRIA 18

State resource agencies frequently use a system of 62 "Water Resource Inventory Areas" or "WRIAs" to refer to the state's major watersheds. The Elwha-Dungeness is referred to as WRIA 18.

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Snowmelt from the Olympic Mountains has a large effect on the flows of some rivers and streams in the Dungeness Watershed. In addition to high flows during winter rains and storms, these systems are fed by snowmelt. Their flows are naturally low in the summer, a season when snow is gone and there is limited precipitation.

By contrast, the flows of smaller foothill and lowland streams are primarily fed by groundwater and rain. Still, for both types of streams, summer flows depend on groundwater.

Groundwater is contained in aquifers – underground geologic formations that store and move groundwater down-slope to springs, streams, and marine waters. The size and numbers of aquifers in the Dungeness varies across the watershed – as does the availability of groundwater.

Some of the factors affecting groundwater levels are:

- Population growth.
- Seasonal water shortages.
- Changes in irrigation practices, conveyance systems, and land use.
- Complex geology.
- Naturally dry climate.

Population Growth

The Dungeness Watershed has had steady population growth during the last 20 years. For example, Sequim’s population alone has grown more than 32 percent since 2000. As more people move to the watershed, they place greater pressure on the finite water resource.

Agriculture

Local farming has seen many changes over the decades, in type of crop, amount of irrigated land, and how farmers irrigate. About 5,000 acres of irrigated commercial cropland includes alfalfa, hay, row and seed crops, berries, lavender, and organic produce.

Farming faces pressure on many fronts, including the conversion of farmland to residential and commercial developments. One goal of the water planning and management discussions over the past few years is the continuation of a strong agricultural community in the valley.

Agriculture in the watershed depends on water from the Dungeness River. In 1895, farmers formed the Sequim Prairie Ditch Company. By 1923, nine large water rights had been issued for irrigation. Most of the water rights to withdraw water directly from the river are for agriculture uses.

In the past, irrigators diverted up to 80 percent of the natural flow of the river. By improving irrigation practices, management, and infrastructure, the irrigation districts and companies have been able to reduce their water diversions from the river.

In 1998, the Water User’s Association (WUA) entered into a Trust Water Agreement with the state Department of Ecology. The companies and irrigation districts now voluntarily leave at least 50 percent of the flow in the Dungeness River at all times.

Sometimes further measures are necessary to increase water in the river during low flows. In 2001, and again in 2003-2005, through “split-season leases,” irrigators agreed to water crops on certain lands only through July. The remainder of the irrigation season, farmers left that water in the river to benefit fish, water quality, and other values.

Irrigators have been at the forefront of water conservation and efficiency efforts in the basin, and have played a major role in watershed planning, resource protection, and salmon recovery. The farmers of the Dungeness Watershed are also doing their part to use water wisely and find solutions to meet diverse water supply needs.

Tribal Water Rights & Claims

Through treaties, Native American tribes have fishing rights in their historic “usual and accustomed areas.” A right to healthy salmon habitat is asserted along with the right to fish. This means maintaining flows to support productive fish stocks in salmon-producing rivers and streams. Where water rights have been confirmed by the courts, the effective date of tribal flow rights as “time immemorial,” – making them the most senior of water rights in the state.

There are 29 recognized tribes in Washington State. The Lower Elwha Klallam, Jamestown S’Klallam, and Port Gamble S’Klallam tribes have interests in the Dungeness Watershed.

Threatened & Endangered Species

The Dungeness Watershed currently has four fish species listed as threatened under the federal Endangered Species Act. Dungeness Chinook is one of the five key populations of Chinook identified as in need of restoration in Puget Sound. Other Dungeness species have state listing as depressed or critical.

Water Supply

In 1924, a general adjudication of water rights was done in the Dungeness Watershed. This is a legal process conducted through a superior court to determine the extent and validity of existing water rights. The adjudication was necessary to settle disputes over water rights. The water rights affirmed at that time by the court frequently exceed the Dungeness’ natural flow.

Water rights change over time with use or other factors. Even though the irrigation rights have changed over time, the irrigators still have extensive rights to the Dungeness River water.

There are concerns with declining levels of groundwater in areas of the Dungeness watershed. Careful management and protection of groundwater supplies is important to the watershed’s overall water supply.

We have a number of studies of surface and of ground water in the Dungeness Watershed, including data from:

- U.S. Geological Survey studies and models.
- Ecology's groundwater model and monitoring network.
- Data gathered and analyzed by the Clallam County Department of Health.
- Information from well drillers.

Several studies have been completed or are underway to explore other options for water supply, including aquifer recharge and reservoir storage.

Local Involvement in Water Management Decisions

In 1998, the Legislature adopted the Watershed Planning Act, and provided funding to local groups to develop water management plans in their watersheds. The Elwha-Dungeness Watershed Planning Group was one of the first groups requesting funds to address water management issues.

The planning unit was made of representatives from federal, state, local, and tribal governments, and many stakeholder groups. They elected to work on all four elements of watershed planning:

- Water Quality
- Habitat
- Instream Flows
- Storage

The members worked together to develop water management strategies for the watershed. Clallam County approved the watershed plan in June 2005. For more information on, visit the Clallam County Web site: www.clallam.net/environment/

[html/watershed_planning.htm](http://www.ecy.wa.gov/programs/wr/instream-flows/dungeness.html/watershed_planning.htm) . Some of their recommendations are listed below.

Watershed Plan Recommendations

- Find ways to provide drinking water while protecting and continuing to restore flow in the Dungeness River.
- Explore water storage options.
- Encourage new growth to connect to existing water systems where possible.
- Implement a widespread program to encourage water conservation and efficiency in buildings and landscaping.
- Work with Ecology to adopt a rule to protect recommended instream flows. For more information on the Rule, see our Web site at: www.ecy.wa.gov/programs/wr/instream-flows/dungeness.html

State Rule-Making Efforts

Ecology began working with local citizens and stakeholders on rule concepts and water supply options in fall 2006. A water resource consultant, ISE Consultants, helped with Ecology's outreach efforts including several articles in the Sequim Gazette, and three workshops held at the John Wayne Marina in November 2007, March 2008, and February 2009.

To view the published articles, see "News Articles" on our website at:

<http://www.ecy.wa.gov/programs/wr/instream-flows/dungeness.html>

There will be other opportunities to provide comments on the draft rule at public workshops and hearings in mid-2010.