

Report on the Sequim-Dungeness area aquifers

The **purpose** of this report is to integrate well data from the 1999 USGS Report, the 2008 PGG report, and 2016 DOE Study with the current well data acquired from Washington Well Data (2026). The intention is to update our knowledge of the conditions and concerns regarding actual aquifer water in the Sequim-Dungeness area. There are several contributing data sets. The trends in each set paint a similar picture and taken together the conclusions are obvious.

USGS, Hydrologic Assessment of the Sequim Dungeness Area (1999):

<https://pubs.usgs.gov/wri/1999/4048/report.pdf>

USGS (1999) summarizes in their extensive report, Hydrologic Assessment of the Sequim Dungeness Area, Clallam County, Washington, that “water levels generally declined from about 3 to 10 ft. in approximately a 7 square mile area east of the Dungeness River”.

Leakage from irrigation ditches was identified as the primary source of groundwater recharge. The report stated that without this recharge, projected average drawdowns of 20 ft. could occur within 10-20 years and that some areas would become completely unsaturated and several hundred wells could be in danger of going dry.

Pacific Groundwater Group (PGG) summary (2009): (<https://www.sequimwa.gov/DocumentCenter/View/8162/2008-Hydrologic-Monitoring-Rpt-PGG-Dec2009?bidId>)

PGG, hired by City of Sequim, measured cumulative declines of 5.5 ft. (shallow aquifer), 9.7 ft. (middle aquifer), and 9.8 ft. (lower aquifer). Near the Hwy. 101-Dungeness River crossing, declines reached 25 ft. over a 30 year period and have not stabilized.

Department of Ecology (DOE) (2016):

(<https://www.sequimgazette.com/2016/03/30/study-suggest-long-term-groundwater-declines/>)

DOE evaluated 264 wells state-wide, some of which were in the Sequim-Dungeness area, to assess the impact of drought and project long-term trends. The study found average groundwater declines of 1.9 and 0.66 feet per year across the state and in parts of the Sequim-Dungeness Valley.

Washington Well Data Groundwater Area Report (2026):

(<https://washingtonwelldata.com/>)

Currently available well data (2026) was analyzed for 6 sections in the Sequim-Dungeness Area (sections 7 and 19 of T30NR3W and sections 4, 24, 25, and 26 of T30N4W).

Based on 681 wells in the 6 sections, 61 wells (10.6%) were deepened, presumably due to reduced water levels. An additional 103 wells were decommissioned for unknown reasons. 41% of the well deepening occurred before the year 2000 and 59% after 2000. The average water level in the redrills was 28 ft. lower than when the wells were first drilled.

Current status:

Vertical percolation from the shallower aquifers caused by pumping from the deep aquifer potentially accelerates declines in the very wells that domestic and small-system users depend on.

Conclusions:

Since the 1999 USGS investigation, the Sequim-Dungeness Area aquifers have experienced significant groundwater level declines driven by reduced irrigation recharge, increased domestic and commercial pumping, improved irrigation piping, and reduced snowpack.

-Shallow aquifer: Water levels have dropped 8 to 17 feet between 1997 and 2007, preceded by 3 to 9 feet of decline between the late 1970's and mid-1990's.

-Middle Aquifer: Declines of 7.7 to 9.7 feet recorded between 1997 and 2007 near Gierin and Bell Creek and approximately 7 feet near Agnew.

-Lower Aquifer: Port Williams Wellfield declined 9.8 feet.

-Regional context: Overall decline is attributed to the termination of flood irrigation and piping of unlined ditches. This is compounded by population growth and rising domestic well usage.

Summary and Risks:

Aquifer characteristics remain poorly understood, especially the vertical hydraulic connection between lower, middle, and shallow aquifers.

Climate change is reducing snowpack in the Olympics, which will shrink the winter/spring recharge window and make the system vulnerable to summer drought.

Population growth pressure creates demand for increased pump discharge.

With the climate driven reduction in recharge and continued population growth, water demands create future concerns, especially when the hydrology is still not fully understood.

A Groundwater Guardian (groundwater.org) document states that many residents who drilled their wells in the 1970's have since had to deepen their wells.

Local hydrologist, Ann Soule, stated in the Sequim Gazette (2016) that "...wells may need to be deepened." There are 8,000-10,000 wells in the Sequim-Dungeness watershed and even a small percentage represents hundreds of wells needing deepening. In July 2026 the Sequim Gazette headlined, "We are on a downhill slope of there being enough water to support a big population here in the Sequim-Dungeness Valley, and drought is becoming the norm, and 70% of future years will be dry".

The question of future water viability remains unanswered because no one has actually measured it. Deepening wells is expensive and only a temporary fix in aquifers with declining water levels.

Rapid area growth and increased demand on a declining water supply is jeopardizing this community's future.

Sincerely,

Bruce von Borstel
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