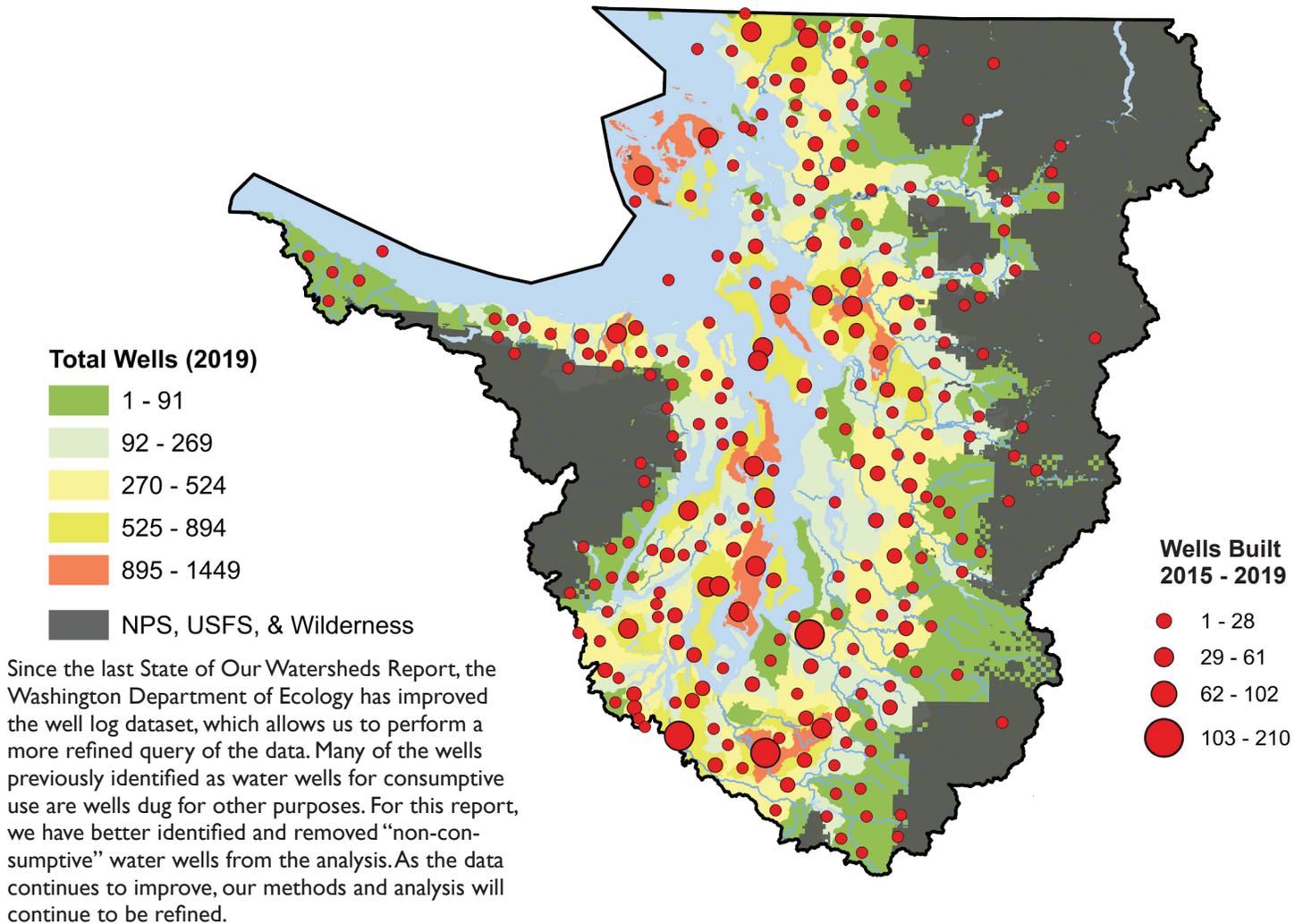


Groundwater Withdrawals Impact Surface Flows

Since 1980, over 67,000 wells have been developed in the Puget Sound Region. Of these, 5,815 wells were built between 2015-2019, which is a 40% increase in the number of wells built during the previous five years (2010-2014). This increasing rate of new well installations threatens groundwater availability and stream ecosystem health across the region.



Population growth within the Puget Sound Region, will continue to have increased demands on groundwater resources. Washington state instream flow rules allocate river flow for ecological requirements, but state law allows new wells to withdraw 5,000 gallons of groundwater per day without obtaining a permit that requires scientific evidence that water is legally available.¹ Groundwater withdrawals can cumulatively affect streamflows, especially in late summer when flows are naturally low.

An aquifer’s natural outflow discharges into lakes, wetlands, streams and seawater through springs and seeps on the land surface and through groundwater. Adequate natural outflow is essential for sustaining stream base flows, maintaining lake levels, providing fresh water inputs to the nearshore and preventing seawater intrusion.

As development occurs and more groundwater is extracted than is being recharged, the natural outflow from groundwater subsequently decreases. This reduces the amount of fresh water available to lakes, wetlands, streams and the Puget Sound nearshore.

Reduced freshwater inputs to the Puget Sound nearshore can have a negative impact on shellfish and out-migrating juvenile salmonids.

The reduced availability of surface water can have a negative impact on all stages of the salmonid life cycle. Water quality (e.g. temperature, flows) is affected by decreased inputs from groundwater. Lessened groundwater input concentrates pollutants, increases temperature, and diminishing dissolved oxygen. This is detrimental to salmonid migration, spawning and rearing.

Wells are drilled without regard to aquifer sensitivity and stream recharge needs. As Puget Sound Region’s freshwater demand increases, something has to change. Unchecked growth and its associated increased demand for groundwater must be addressed, if implementation of the Puget Sound Salmon Recovery plan is to successfully move forward.

Map Data Sources: USGS 2018,² WADNR 2016,³ WAECY 2018,⁴ WAECY 2019⁵