

Fact Sheet: Watersheds, Water Cycle & Well-Aquifer Interactions

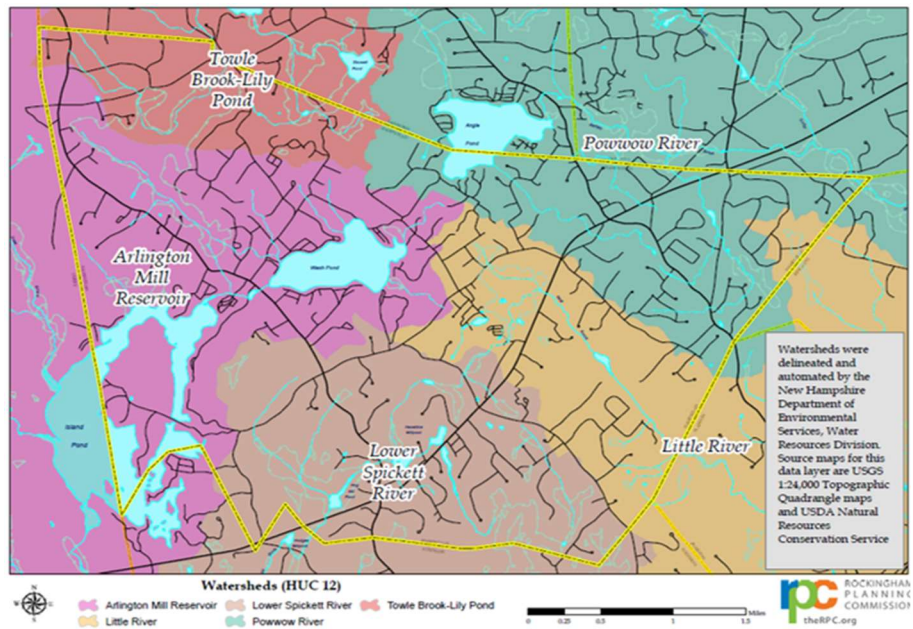


Website: www.hampsteadnh.us/water-resource-committee

Email: hwrc.all@gmail.com

Hampstead Watershed Boundaries

A watershed is an area of land that drains all water from streams and precipitation and snow melt into a common outlet such as a river, lake, or ocean. Every waterbody, no matter how small or large, has a watershed area. This means that every stream, brook, tributary, and river that we see will eventually reach a larger body of water. Everything that happens within a smaller watershed (subwatershed)



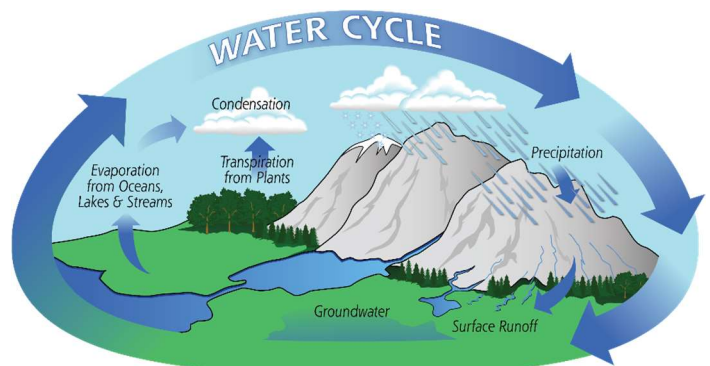
can influence the larger watershed and any water resources downstream.¹ For this reason, protecting water resources starts in what is called the **headwaters** of a watershed, meaning the land that contributes water in its uppermost areas.

Hampstead lies mostly within the greater Merrimack River watershed which occupies portions of both New Hampshire and Massachusetts. Hampstead lies within several subwatersheds of the greater Merrimack River watershed - the Powwow River, the Lower Spickett River and the Little River, Arlington Reservoir and Towle Brook-Lilly Pond watersheds, shown on the map above.

Source U.S. Geological Survey

The Water Cycle

Earth's water is always in movement. The natural water cycle, also known as the hydrologic cycle, describes the continuous movement of water on, above, and below the



¹ <https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/wmb-19.pdf>

surface of the Earth.² Water is always changing states between liquid, vapor, and ice, with these processes happening continuously and varying by seasonal changes in weather.

Groundwater and Aquifers

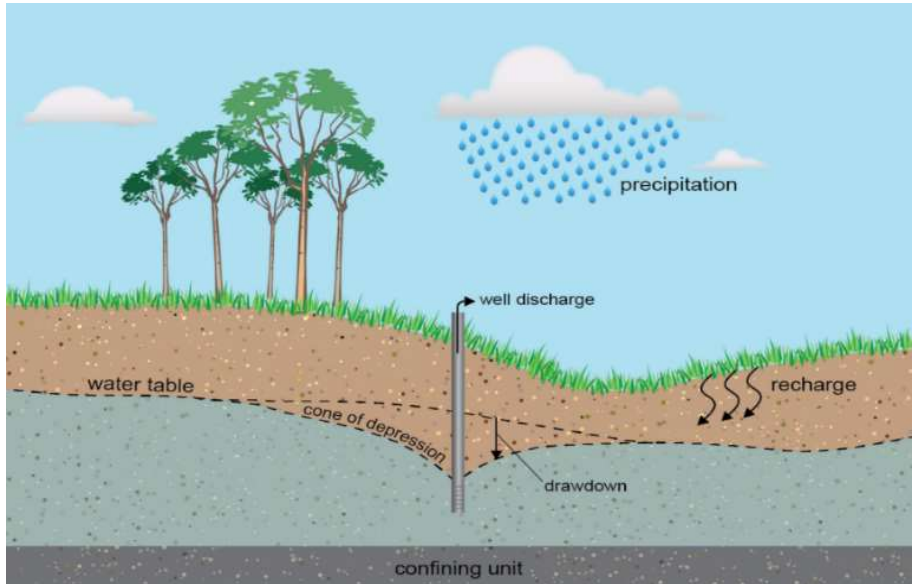
Large amounts of water are stored in the ground, which comes from precipitation and runoff that infiltrates downward from the earth's surface³. The top of the surface where groundwater occurs is called the water table, which divides the unsaturated and saturated zones in the ground. Much of the runoff that seeps into the ground replenishes aquifers, a process known as ground water recharge. Aquifers are large repositories of ground water where most of our drinking water comes from, as well as water for many commercial, industrial and agricultural activities.

Source U.S. Geological Survey

Recharge rates vary among aquifers, which should be taken into consideration when siting a new well. If water is withdrawn from the ground faster than it can be replenished, the local or regional groundwater table can become lower,

affecting other wells in the area. Excessive pumping of groundwater can lower the local and regional water table to the extent that the wells can “go dry,” meaning they can be temporarily impacted or no longer supply water⁴.

Wells draw from the same local and regional aquifers and are connected through underground interactions. Sustained withdrawal of water (such as filling a swimming pool or lawn watering) during drought and times of low groundwater can influence other wells in the vicinity. It is the responsibility of everyone in the community to conserve water resources.



Preparation of these materials was funded by a Local Source Water Protection Program grant from the New Hampshire Department of Environmental Services, Source Water Protection Program and developed with the assistance from Rockingham Planning Commission.

² https://www.usgs.gov/special-topic/water-science-school/science/fundamentals-water-cycle?qt-science_center_objects=0#qt-science_center_objects

³ https://www.usgs.gov/special-topic/water-science-school/science/groundwater-storage-and-water-cycle?qt-science_center_objects=0#qt-science_center_objects

⁴ <https://www.usgs.gov/special-topic/water-science-school/science/aquifers-and-groundwater>