

VARYING REGIONAL WATER SOURCES

DNR's Central Region has relatively large supplies of ground water for residential, commercial and industrial uses. About 1.83 million residents in the 7-county metropolitan area obtain their water from bedrock aquifers that underlie much of the Twin Cities metropolitan area. These groundwater sources include the Prairie Du Chien-Jordan (PDC-Jordan), Franconia-Ironton-Galesville (FIG), and Mt. Simon-Hinckley (Mt. Simon) aquifers. Treated drinking water for an additional 870,000 people comes from the Mississippi River. In the 7-county core region and in the inner portions of the adjacent "collar" counties (Wright, Sherburne, Isanti, Chisago), both bedrock aquifers and the Mississippi River supply significant amounts of water. Although there have been reported incidences of interference with surface water features, such as fens and wetlands, in the core area of the region, DNR's Waters Division believes that, if managed carefully, these combined ground and surface water sources can supply enough water to meet future growth and development in the southern portion of DNR's 17-county Central Region (Purple, orange, and blue areas of Map 15).

The water supply situation clearly changes in the northern half of DNR's Central Region. As can be seen in the insert of Map 15, the water-bearing bedrock aquifers gradually disappear in the vicinity of the northern collar counties and groundwater sources are restricted to unconsolidated sand and gravel deposits that can be at or near the land surface. These water-bearing deposits vary in thickness and in some areas in Central Region can be virtually non-existent. They are also spatially scattered and the locations of the buried sources are poorly known. Although these water sources are primarily used for low-volume domestic supplies and seasonal irrigation, it is uncertain whether these surficial and buried aquifers will be able to sustain increased withdrawals to meet the expected demand of 100,000 new residents in this portion of DNR's Central Region. Moreover, these shallow sand and gravel aquifers allow rapid infiltration of surface water, making these aquifers highly susceptible to contamination. In the future, the Mississippi River might prove to be the more reliable source of water supply for future development, although river water dependence will bear costs associated with water treatment and piping to location.

As growth occurs in DNR's Central Region, it will be important to balance the needs of water-dependent natural habitats with the water needs for homes, businesses, energy, and agriculture. To conserve the region's remaining sensitive natural resources, water managers will need to take into account the impacts of groundwater withdrawal on sensitive natural areas such as groundwater-fed lakes, trout streams, springs, fens, and seepage swamps (photo). Even if groundwater does not directly feed a lake, wetland, or river, groundwater depletion can result in a lowered water table that negatively affects sensitive aquatic plant communities adapted to specific hydrologic conditions.



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