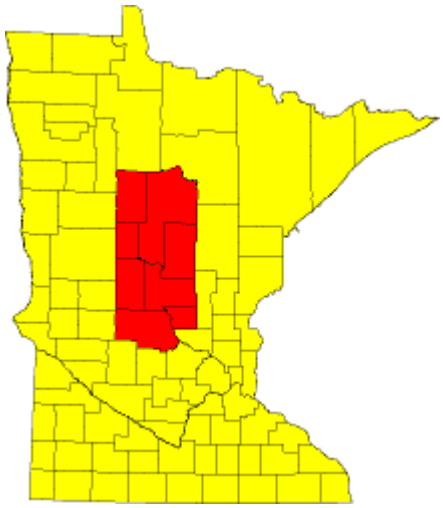
Minnesota Pollution Control Agency

Ground Water Profile:

Central Sands Region



This is a ground-water profile for Minnesota's Central Sands Region, which is comprised of Benton, Cass, Crow Wing, Hubbard, Morrison, Stearns, Todd and Wadena Counties.

HYDROGEOLOGY:

- Extensive high-yield, sand-plain aquifers characterize much of the region.
- Some areas with crystalline bedrock near the surface offer little potential as aquifers.

QUANTITY ISSUES:

- Sporadic interference in shallow wells around irrigation areas occurs.
- Some areas must rely on low-yielding, glacial and bedrock aquifers.

QUALITY ISSUES:

- Sand aquifers are highly susceptible to contamination by land-use activity such as irrigated agriculture, septic systems, lakeshore development, and commercial and industrial development that lacks a proper sewer system.
- Deeper aquifers may have higher levels of dissolved solids and trace metals than water-table aquifers.

INFORMATION NEEDED:

- Short-term and long-term trend studies are needed to assess effects of land-use activity on ground-water quality and quantity.
- Impacts of increased ground-water pumpage on stream flow and stream quality should be determined.

DESIRED ACTIONS:

- Develop multi-agency strategy to address increased irrigated potato production and processing, including baseline and trends monitoring. Study and modeling of impacts and appropriate management practices and controls.
- Focus efforts to develop the state's nitrate database in this area.
- Determine impacts of urbanization on ground-water quality (e.g., Brainerd and St. Cloud areas).
- Identify areas where nitrate levels in ground water exceed health limits.
- Better delineate aquifers and continue assessing impacts of increased pumpage on stream flow.