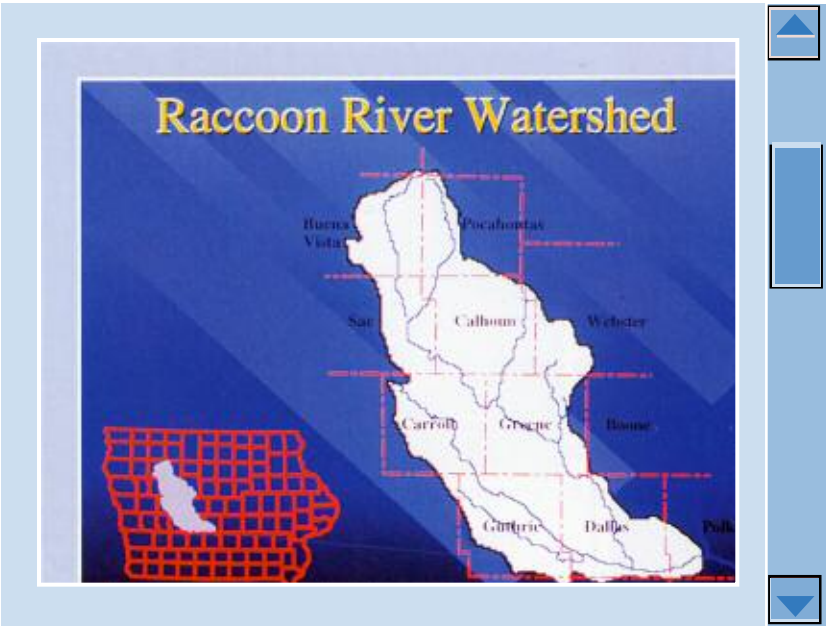
The Raccoon River Watershed

The Raccoon River begins in Buena Vista County, Iowa, traveling approximately 300 km to its confluence with the Des Moines River in the city of Des Moines. The watershed drains 17 counties and 3600 square miles, 6.4% of Iowa's total area. Agriculture predominates with over 80% of the land area in agriculture production. The soils are formed from Wisconsin till under a native prairie grass vegetation. The river basin is predominantly in the Des Moines Lobe — and can be characterized as a prairie pothole structure with extensive drainage systems that move water from the landscape into nearby streams. It has been estimated that over 40% of the agricultural land area in this region of Iowa has subsurface drainage. The installation of subsurface drainage has greatly altered the hydrology of the watershed by providing a conduit from fields into adjacent surface water streams.

Harvesting water from the Raccoon River

The Raccoon River, and shallow groundwater influenced by it, are the primary sources of water for the Des Moines Water Works (DMWW). From 1884 until 1948, DMWW used water exclusively from an underground collection system called the



infiltration gallery — a 91-cm wide underground pipe that runs parallel to the Raccoon River for 5-km, at a depth of 10-meters.

River water is also diverted to a series of constructed ponds that lie above the gallery. These ponds help saturate the surrounding soil structure, increasing water yield. By the late 1940's water demand had increased to the point where yield from the gallery was not sufficient and DMWW constructed a permanent intake on the Raccoon River to supplement the supply from the infiltration gallery.

Water quality in the infiltration gallery is highly influenced by the river, but it does benefit from bankside filtration, which removes many of the solids and suspended matter that is present in

The Raccoon River watershed is one of North America's largest surface water sources of drinking water.

DATA | SOURCES

Crop Acreage — National Agriculture Statistics Service (NASS)
Crop Yield — Iowa Department of Agriculture and Land Stewardship
Fertilizer use — Iowa Department of Agriculture and Land Stewardship
Animal production — USDA-NASS agricultural inventory data
Meteorological data — National Climate Data Center
Water data — Des Moines Water Works, U.S. Geological Survey