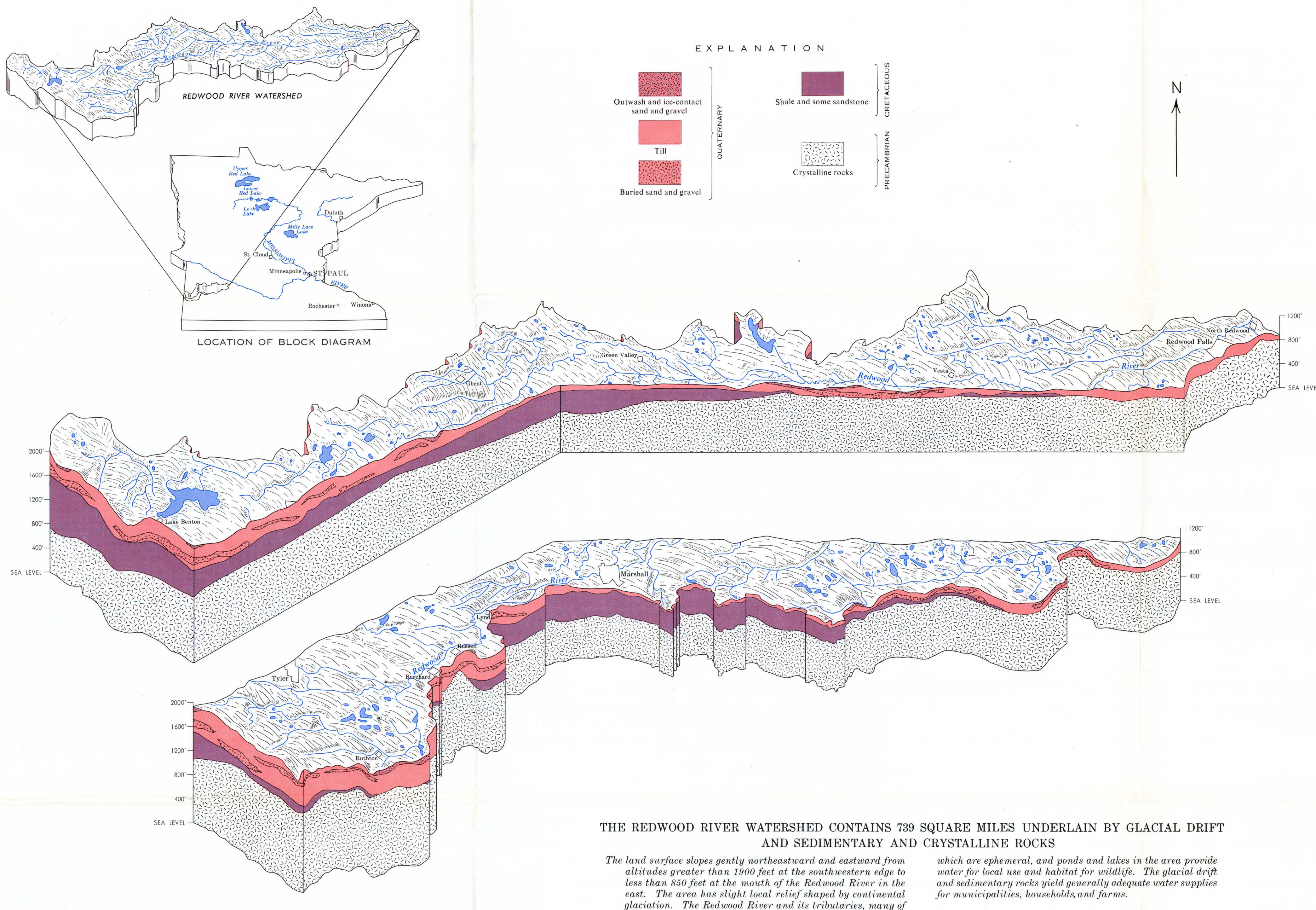
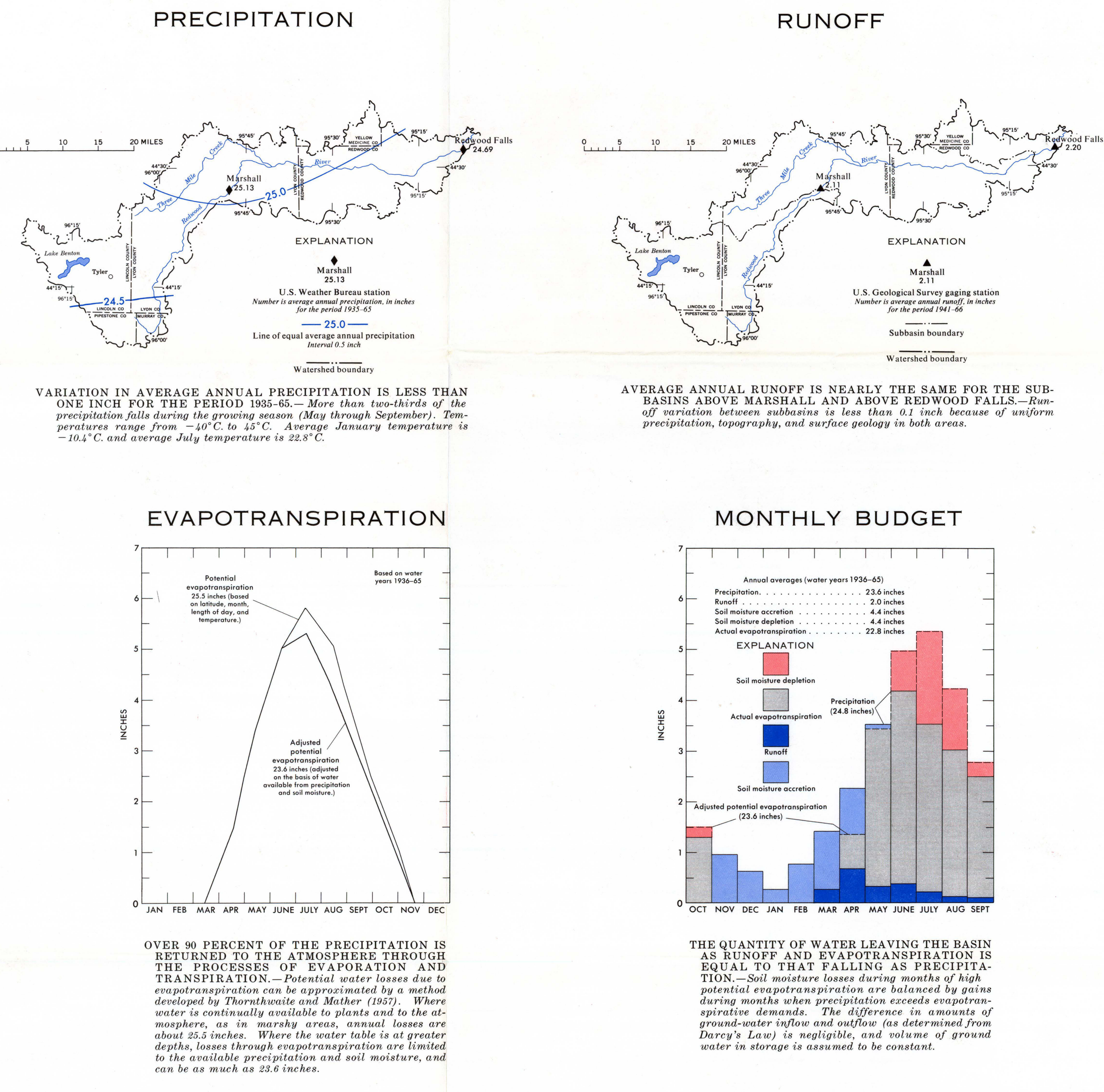


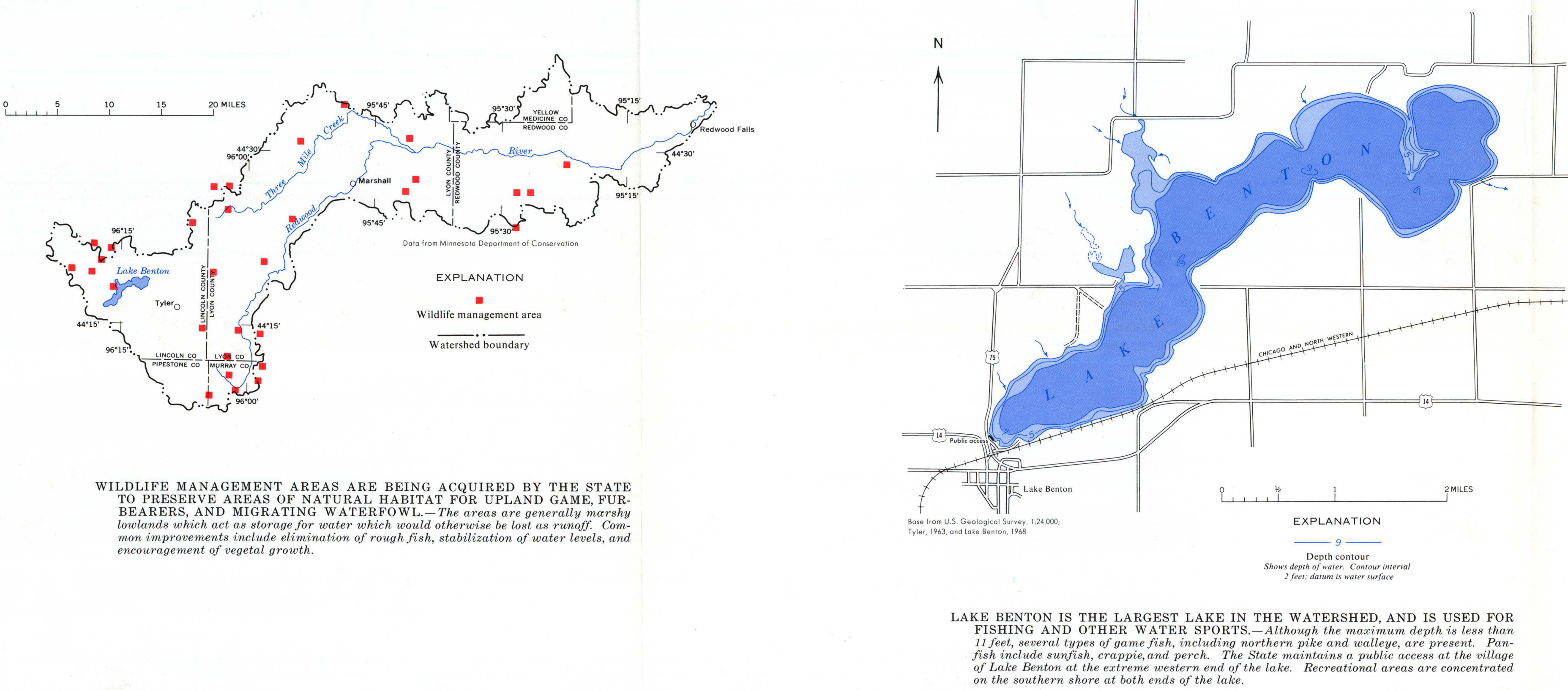
THE REDWOOD RIVER WATERSHED



THE WATER BALANCE



RECREATION



SUMMARY

TOTAL WATER USE IN THE WATERSHED IS LESS THAN 5 PERCENT OF THE AVERAGE FLOW OF THE REDWOOD RIVER AT REDWOOD FALLS. Over 10 percent of the withdrawals are from ground-water sources. There is good potential for developing both ground- and surface-water sources to meet several times the current demands.

| | Estimated water use (millions of gallons annually) | | | |
|------------------------|--|-----------|------------|--------|
| | Domestic, industrial, and commercial | Livestock | Irrigation | Total |
| Municipal ground water | 425.09 | 0 | 0 | 425.09 |
| Private ground water | 28.06 | 211.37 | 2.57 | 282.02 |
| Surface water | 13.16 | 48.36 | 19.12 | 77.14 |
| Total | 476.43 | 259.73 | 22.69 | 758.25 |

MUNICIPAL SUPPLIES IN THE WATERSHED ARE FROM GROUND WATER. Most municipalities would have little trouble increasing supplies by drilling additional wells. However, water is hard to very hard and generally exceeds the recommended limits for iron and manganese.

| Municipality | Well depth, in feet | Well diameter, in inches | Year drilled | Static water level, in feet below surface | Usual pumping rate, in gallons per minute | Source (qualify) | Water quality, coefficients, in milligrams per liter | | | |
|---------------|---------------------|--------------------------|--------------|---|---|------------------|--|----------|------|-----------|
| | | | | | | | Dates of analysis | Hardness | Iron | Manganese |
| Lake Benton | 20 | 200 | — | — | 4 | Drift | 7-18-62 | 629 | 1.3 | 0.49 |
| | 16 | 6 | 1961 | — | 40 | Drift | 7-18-62 | 780 | 1.3 | 0.49 |
| | 16 | 6 | 1961 | — | 40 | Drift | — | — | — | — |
| Marshall | 95 | 12 | 1955 | 9 | — | Drift | 8-11-60 | 700 | 34 | 10 |
| | 102 | 2 | 1955 | 10 | 60 | Drift | 8-11-60 | 120 | 1.4 | 17 |
| | 84 | 2 | 1956 | 10 | 60 | Drift | 3-25-59 | 760 | 2.5 | 17 |
| Wiley | 225 | 8 | — | 30 | 35 | Sandstone | 4-21-59 | 130 | 36 | <.01 |
| | 226 | 8 | — | 31 | 35 | Sandstone | 5-15-59 | 100 | 44 | 0.0 |
| | 231 | — | — | 15 | — | Sandstone | 3-1-62 | 190 | 35 | 0.0 |
| Redwood Falls | 92 | 12 | 1950 | 92 | 250 | Drift | 3-3-66 | 960 | 56 | 1.2 |
| | 182 | — | — | 54 | 500 | Drift | — | — | — | — |
| | 32 | 8 | 1963 | — | 68 | Drift | 11-3-61 | 430 | 1.7 | 37 |
| Russell | 30 | — | — | — | — | Drift | 6-25-62 | 280 | 0.9 | 32 |
| | 106 | 8 | — | 70 | 80 | Drift | 9-18-60 | 1000 | 1.5 | 1.1 |
| | 95 | 10 | — | 34 | 80 | Drift | 7-28-62 | 960 | 1.7 | 92 |
| Tyler | 180 | 18 | 1960 | 14 | 100 | Drift | 4-10-59 | 1300 | 3.8 | 1.1 |
| | 230 | 8 | — | 130 | 30 | Drift | 8-25-62 | 1300 | 1.1 | 1.9 |
| | 230 | 12 | — | 75 | 75 | Drift | 7-2-61 | 430 | 1.2 | 16 |
| Verda | 317 | 8 | 1947 | 80 | 101 | Drift | 12-17-56 | 380 | 3.7 | 12 |
| | 98 | 6 | 1956 | 13 | 13 | Drift | — | — | — | — |
| | 60 | 12 | 1956 | 60 | 24 | Drift | — | — | — | — |

THE SUITABILITY OF WATER FROM A PARTICULAR SOURCE DEPENDS UPON THE INTENDED USE. Factors contributing to the desirability of certain waters include the quantity available, the accessibility of the source, and the physical and chemical characteristics of the water.

| Use and criteria | Redwood River | Large lakes | Small lakes and streams | Ice-contact and outwash sand and gravel | Buried sand and gravel | Crystalline sandstone | Weathered Precambrian |
|---|--|--|--|--|--|--|--|
| Municipal and industrial supplies 0.5 cubic feet per second or 255 gallons per minute Less than 100 milligrams per liter total dissolved solids Less than 0.5 milligrams per liter iron Less than 100 milligrams per liter total hardness | Adequate supply Storage sites available Water is suitable for most connections Treatment necessary | Adequate supplies for limited use | Could be used for storage | Adequate yields can be obtained Recharge is rapid | Adequate yields can be obtained Water is soft | Water may be soft | Insufficient yields Inadequate recharge |
| Rural domestic and stock supply 1 gallon per minute Less than 100 milligrams per liter total dissolved solids | Suitable for stock | Adequate supplies | Water is suitable for stock | Adequate yields Water may be soft Recharge is rapid | Adequate yields Water may be soft Recharge is rapid | Adequate yields Water may be soft Recharge is rapid | Insufficient yields Inadequate recharge |
| Irrigation 0.5 cubic feet per second or 255 gallons per minute per well Less than 100 milligrams per liter total dissolved solids Less than 0.5 milligrams per liter iron Less than 100 milligrams per liter total hardness | Quality generally suitable | Quality suitable Adequate supplies for limited use | Quality suitable | Adequate supplies are common Quality generally suitable Recharge is rapid | Adequate yields can be obtained Quality generally suitable Recharge is rapid | Adequate yields Quality generally suitable Recharge is rapid | Insufficient yields Inadequate recharge |
| Recreation Recreation supplies Less than 100 milligrams per liter total dissolved solids Less than 0.5 milligrams per liter iron Less than 100 milligrams per liter total hardness | Suitable for hunting and fishing Location favorable Variation in stage and discharge | Suitable for water sports Location favorable Variation in stage and discharge | Suitable for hunting and trapping Water is soft | Suitable for hunting and trapping Water is soft | Suitable for hunting and trapping Water is soft | Suitable for hunting and trapping Water is soft | Insufficient yields Inadequate recharge |
| Fish and wildlife habitat Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids | Suitable for wildlife and fish Adequate depth Permanence Less than 1000 milligrams per liter total dissolved solids |

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1970