Cannon River
Resource Analysis
This resource analysis of the Cannon River was prepared by the Rivers Section and the Bureau of Engineering.

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Introduction

This resource analysis for the Cannon River shows that the river possesses the outstanding scenic, recreational, natural, historical, scientific and similar values necessary to qualify it for inclusion in the Minnesota wild and scenic rivers system. A separate booklet, entitled A Management Proposal for the Cannon River, explains the methods the Department of Natural Resources (DNR) proposes to protect the river.

The wild and scenic rivers program

In 1973 the state legislature recognized that the state's outstanding rivers—rivers such as the Cannon—should be safeguarded for the benefit of present and future generations of Minnesotans. The legislature passed the wild and scenic rivers act (Minnesota Statutes, Sections 104.31-104.40) to "preserve and protect" Minnesota rivers that exhibit "outstanding scenic, recreational, natural, historical, scientific and similar values." (See appendix for complete text.)

The act is not meant to restore rivers and river lands to wilderness, but is meant to prevent the damage to exceptional rivers that can be caused by uncontrolled development and recreational overuse. To protect rivers, the act prescribes local zoning, land and scenic easement acquisition from willing sellers and recreation management.

There are now five rivers in the Minnesota wild and scenic rivers system: the Kettle River in Pine county, designated in 1975; the Mississippi River from St. Cloud to Anoka (1976); the North Fork of the Crow River in Meeker County (1976); the Minnesota River from Lac qui Parle to Franklin (1977); and the Rum River from Lake Ogechie to Anoka (1978).

There are six other river segments under consideration for possible inclusion in the system: the Cloquet River, the St. Louis River, the Snake River, the Minnesota River from Franklin to Le Sueur, the Cannon River from Faribault to the Mississippi, and the North Fork of the Crow River in Wright and Hennepin counties.

The wild and scenic rivers act requires the preparation of a management plan before a river can be designated as part of the wild and scenic rivers system. Management provisions for a state wild and scenic river must meet standards contained in the Statewide Standards and Criteria for the Minnesota Wild and Scenic Rivers System (Minnesota Regulations NR 78-81, in appendix). However, these standards may be modified to take into account special characteristics of the river under consideration.

A preliminary management proposal for the Cannon River has been prepared by DNR Rivers Section staff after a study of the river through field surveys, books, reports and meetings with an advisory committee composed of area residents. A copy of the proposal accompanies this resource analysis. Additional copies of both documents are available from the Rivers Section, Department of Natural Resources, Box 10 Centennial Office Building, St. Paul, MN 55155 (612-296-6784).

The management proposal will be presented to concerned citizens through a series of public meetings in towns near the river. During the meetings, area residents and other interested persons may examine the proposal, ask questions and make recommendations. The proposal will be amended if suggestions made at these meetings indicate that changes are necessary.

Area residents and others will also have a chance to debate the merits of the management proposal at public hearings conducted by a representative of the state Office of Hearing Examiners. The hearing examiner will write his findings and make a recommendation to the commissioner of natural resources, who then will decide whether to include the river in the wild and scenic rivers sytem.

If the Cannon is designated a wild and scenic river, the rules and regulations section of the management proposal (NR 2900) will carry the force of law and will be adopted and administered by local governments along the river.
Study conclusions

The DNR has determined that the Cannon River exhibits those outstanding qualities—scenic, recreational, historical, scientific and natural—that qualify the river, from Faribault to its confluence with the Mississippi River, for protection under the wild and scenic rivers act.

Scenic

The Cannon begins in a lake region of glacial drift and moraines. The river winds through a valley of rolling plains, limestone and sandstone cliffs and gentle bluffs, meeting the Mississippi in a broad, marshy floodplain.

Cornfields and grassy meadows pasturing cattle sometimes border the river. Fence posts, a farmhouse, barn or silo break the flat horizon. A soft agrarian scent steals one's attention.

In other areas, jutting, steep rock ledges and cliffs curb the river's flow. Swallows nest in cavities hollowed in the weathered stone walls.

On its journey to the Mississippi the Cannon flows through lush stretches of river bottom forest. Virginia creeper and wild grape coil around trunks and tug insistently at branches. In the spring, flowering basswoods exude a provocative scent. Summer's sweetness colors and weights the branches of wild berry thickets.

As the river rounds a bend below Welch, its corridor opens to an upward view of a scantily covered bluff. In autumn, the sun warms the grassy exposure and enhances the brilliance of the bluff's aspen yellow and sumac red.

In its sometimes dramatic, sometimes subtle scenery, the Cannon River valley shares in Minnesota's fragile wealth of natural beauty.

Historical

The Cannon's history is as colorful as its scenery. The river valley attracted adventurers, opportunists, dreamers and robbers.

The river first offered transportation—to the Indians who lived along its banks and to the fur traders who took advantage of the valley's abundance of wildlife.

The westward tide of American expansion brought settlers enticed by reports of fertile land and dense stands of hardwoods. The forests fell to the young, timber-hungry region when development of the railroad brought improved shipping facilities. The settlers harnessed the river to power sawmills in prosperous riverside communities. But the timber harvest far outstripped the annual growth and the supply rapidly dwindled.

Removal of the forests opened the land for cultivation. Soon wheat fields dominated the landscape and idle sawmills were converted to grist mills. By the late 1800s the Cannon River valley was producing flour of a quality unsurpassed in the nation. But this era too came to an end, as soil exhaustion and insects caused repeated wheat failures.

The railroads, which had once aided the settlers' prosperity, now enabled the concentration of milling in the Twin Cities and gave the metropolitan mills access to the wheat fields of the west. The Cannon River valley ceased to be a milling center; remnants of abandoned grist mills may still be seen along the river's banks.

Today, with the development of modern farming techniques, the river valley has re-established its prominence in Minnesota agriculture.

Scientific and Natural

According to the state archaeologist, the Cannon River valley is one of Minnesota's most important archaeological areas. Using information gathered from burial mounds and village sites, archaeologists have pieced together a picture of life here in prehistoric times.

By 1000 A.D. the area near the junction of the Cannon and Mississippi rivers was a major center of Indian life. This Oneota Indian culture was probably the closest prehistoric Minnesota people came to an urban society. The Oneota lived in large villages on the river terraces, cleared and cultivated land in the river bottoms, hunted and fished in the river valley.

Vast numbers of archaeological sites have already been lost
to cultivation and construction, yet much remains to be learned about this ancestral American culture.

The variety of plant communities in the river valley are an important natural feature. Along the river bottomlands, many of the original plant species have survived two centuries of settlement. Remnants of plant communities that once covered extensive areas of Minnesota can be found elsewhere in the valley. Several rare or protected plant species, including the Minnesota trout-lily and the prairie bush-clover, also grow on the Cannon's banks.

Recreational

The Cannon River valley provides an ideal setting for a variety of recreational pursuits. Hunters may encounter many different game species, including white-tailed deer, mink, muskrat, red and gray fox and beaver. Lucky anglers can catch such game fish as walleye, sauger, largemouth and smallmouth bass, white bass and northern pike.

The valley's scenic beauty attracts canoeists and hikers, and offers a natural studio to the outdoor photographer. Several recreational sites are located on public lands along the river.

To minimize the harm caused by excessive development and overuse of this important resource, proper management is necessary. By working together we can ensure that the qualities that make the Cannon what it is today will not be lost tomorrow.
Geology and watershed

Sandstone, limestone and other sedimentary rock form impressive outcrops along the Cannon River. The gray Platteville Limestone and the white St. Peter Sandstone are found upstream of Dundas. Downstream, between Dundas and Welch, the massive Prairie du Chien Dolomite, the Jordan Sandstone, the St. Lawrence Formation and the Franconia Formation form the river bluffs.

Pleistocene glacial deposits occasionally as deep as 400 feet cover most of the watershed. Among these deposits are the glacial outwash, ground moraine and end moraine of the Wisconsin period that are found along most of the river. River alluvium — the silt, sand and gravel deposits left by the river—— often covers the glacial deposits. Bedrock exposures are common for a short stretch north of Faribault and again below the Byllesby Reservoir. Many private wells draw water from glacial deposits, while municipalities tap aquifers found in several different layers of bedrock. Much of the groundwater is untapped. Long-term groundwater decline is nowhere evident. Groundwater in many of the bedrock layers is easily polluted, largely through numerous sinkholes. A sinkhole is a surface depression caused by the collapse of an underground cavity in limestone.

Much of the south-central part of the Cannon River watershed is a glacial till plain that ranges in altitude from 1,100 to 1,200 feet above sea level. End moraines form ridges on the east, west and south borders of the plain. The eastern moraine, which marks the eastern terminus of the Wisconsin glacier, rises to more than 1,300 feet above sea level and forms ridges 50 to 100 feet above the plain. End moraine ridges in the northwest are less marked, but extend directly north across the river valley.

The Cannon River drops an average of about 4.9 feet per mile in its path to the Mississippi River near Red Wing. The drainage area of the river is 1,462 square miles. The largest tributary is the Straight River, which joins the Cannon at Faribault.

The U.S. Geological Survey, Water Resources Division, gathered flow data from a continuous-record recording station at Welch from 1911 to 1913 and from 1931 to 1970. The station is now used only to measure crest stages. The drainage area at the Welch station is about 1,320 square miles.

The Cannon River responds quite dramatically to rain, although the lakes, swamps and groundwater reservoirs in the watershed maintain the river's flow during times of no rain. Peak flows usually occur during spring runoff in early April. The maximum discharge recorded at the Welch station is 36,100 cubic feet per second. The minimum discharge is 2.5 c.f.s. Average discharge is 490 c.f.s.
Landform and soils

A consideration of landform and soils is essential to sound land use planning. Each landform and soil type presents particular problems and potentials for development, agriculture and other land uses.

The Cannon River valley is generally characterized by level to gently sloping uplands, steep valley slopes and bottomlands prone to flooding.

The Cannon's floodplain (bottomland) is generally unsuitable for commercial or residential development. It is variably suited for agricultural cultivation, permanent pasture, hay, woodlands and wildlife habitat. The low fertility and low water retention capacity of certain bottomland soils (for example, the Estherville soils) restricts their suitability for agricultural production.

Three basic landform/soil types are found on the bottomlands of the Cannon River valley. Closest to the river are alluvial lands subject to frequent flooding, showing little soil formation and generally unsuitable for agricultural crops. West of Cannon Falls on the higher bottomlands are soils of the Colo-Estherville-Waukegan association. This association is composed of poorly to excessively drained loams of medium to coarse texture. East of Cannon Falls the Marsi-McPaul-Radford association can be found. It is characterized by depressional, very poorly drained marshes and nearly level, moderately well to poorly drained medium-textured soils.

The uplands encompass two basic landforms: generally level uplands and steep valley walls. Four primary soil associations occur both on the uplands and valley walls. The Lester-Hayden-Le Sueur and Ostrander-Maxfield-Klinger associations are found west of Cannon Falls; east of Cannon Falls are the Seaton-Racine-Marlean and Timula-Frontenac associations. These associations contain well to poorly drained loams formed in glacial tills, loess, very recent alluvium and bedrock residuum.

Closest to the river these soil associations occur on steep to very steep valley walls, where they are often excessively drained and prone to drought, very rapid runoff and erosion. The valley walls are unsuitable for development, agricultural crops or heavy grazing.

Water quality

Water quality of the Cannon River from Faribault to Red Wing is good to fair. It is suitable for most wildlife and recreation.

The Cannon River exceeds the maximum fecal coliform count set by the Minnesota Pollution Control Agency (PCA). The river's water quality meets most other PCA standards.

The PCA has classified the Cannon as a 2B river. A 2B river is defined in this way:

"The quality of this class of the intrastate waters of the state shall be such as to permit the propagation and maintenance of cool- or warm-water sport or commercial fishing and be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable."

The PCA classification is a goal and is not meant to reflect the present water quality.

The PCA operated two water quality testing sites on the Cannon River until November 1977, when both were discontinued. The sites were at State Highway 56 near
Randolph (river mile 31.6) and at U.S. Highway 61 west of Red Wing (river mile 7.1). The Randolph site began operation in 1974. The other site was used from 1963 to 1965 and from 1972. Monthly samples were taken at both sites. At these stations the fecal coliform count violated PCA standards in more than one-half of the samples taken.

PCA standards for a 2B river set a limit of 200 fecal coliforms per 100 milliliters of water. The mean coliform count for the station at U.S. Highway 61 was 2,095.95 per 100 milliliters. The mean coliform count of the Randolph samples was 8,513.16 per 100 milliliters.

Fecal coliforms are bacteria found in the intestines of warm-blooded animals. High fecal coliform counts may indicate the presence of pathogenic organisms that cause skin irritations and intestinal diseases.

Fecal coliforms usually enter the river in large numbers through effluent from polluted runoff and deficient sewage treatment plants and septic systems.

The fecal coliform count in the Cannon is four to eight times greater during high water than in low water, an indication that runoff contains significant amounts of manure.

Faribault's present sewage treatment plant, constructed in 1965, discharges into the Straight River a short distance upstream from its junction with the Cannon. The plant's discharge exceeds PCA limits for biochemical oxygen demand and total suspended solids for secondary treatment plants. Faribault is now upgrading its plant to meet PCA standards.

Dundas has no sewage treatment facility and is served by individual septic systems, which do not work well in the soil and bedrock of this area. Raw effluent reaches the water table and the river through poor soils or fissures in bedrock. Some systems drain through pipes leading directly to the river.

The Northfield sewage plant, built in 1958 and upgraded in 1966, discharges into the Cannon. Standards for secondary treatment plants are not being met. Effluent quality will worsen as population increases. Northfield has begun to improve its plant and is meeting interim standards required by the PCA. Dundas may be included in the Northfield system.

The Cannon Falls plant, built in 1964, will have to be improved to meet PCA effluent standards.

Welch township is served by individual septic tanks which discharge into the Cannon by a common drain tile.
Vegetation

Before white settlement the Cannon River between Faribault and Red Wing flowed through three major types of vegetation: the "Big Woods," tall-grass prairie and river bottom forest. Of these three, only the river bottom forest remains essentially unchanged.

The Big Woods, a translation of the early French name grand bois, covered much of central and east-central Minnesota. Along the Cannon River, it was found from Faribault to Northfield. The Big Woods was dominated by sugar maple, elm, basswood and red oak. Much of the woods was lost to logging in the 1850s and its fertile soils were converted to farmland. Only a few patches remain today.

Farther east, the river traveled through the tall-grass prairie region. Extending from Northfield to Cannon Falls, the prairie supported a rich variety of grasses and herbs such as big bluestem, Indian grass and prairie clover. A few small shrubs and trees such as wild roses and wolfberry also grew here. Because the prairie depended on periodic fires to maintain itself, it has been nearly eradicated through fire prevention practices and agriculture.

The rich river bottom forest grew on the floodplain from west of Welch to the Cannon's mouth at the Mississippi. This forest was similar to the Big Woods except for such species as cottonwood, ash, box elder, willow, soft maple and hackberry. Most of this plant community remains today. With the establishment of fire controls it has spread westward into the region that was formerly prairie.

Oak openings and aspen-oak lands also were found in scattered areas along the Cannon. Sparsely wooded lands with small stands of oak or hickory were characteristic of the oak openings. The aspen-oak lands contained dense young stands of quaking and bigtooth aspen. Oaks, elms, ash and basswood were also present. Both of these vegetative types were fire dependent and, therefore, were lost to fire control practices. Vegetation was also lost to cultivation and development.

Along the river bottomlands, the plant species of two centuries ago are still present today. American elm, green ash and soft maple are frequently observed species of trees. Other trees found near the river include cottonwood, box elder, black walnut, butternut, bitternut, red oak and basswood. The undergrowth includes red osier dogwood, wild black currant, gooseberry and red raspberry. Virginia creeper and wild grape are also common.

The warmer, drier south-facing bluffs of the Cannon host such plant species as sumac, red cedar, box elder, slippery elm, hackberry, wild plum, prickly ash, quaking aspen, bitternut, and burr and red oak.

The so-called "goat prairies" are found on the steeper south-facing bluffs. Resembling the tall-grass prairies, they are in fact unique assemblages of plants from the tall-grass prairies, the sand plains and the more westerly short-grass prairies. Dependent on periodic fires for maintenance, the goat prairies have been reduced by the invasion of juniper, aspen, smooth sumac and prickly ash. Several plants found here are compass plant, silky aster, blazing star, nodding ladies tress and Indian grass.

Along the cooler, wetter north-facing slopes are sugar maple, red oak, paper birch and ironwood.

Two plant species along the Cannon River are rare not only in Minnesota but in all of North America. They are the Minnesota trout-lily (Erythronium propullans), a small spring wildflower of the lily family, and the prairie bush-clover (Lespedeza leptostachya), a member of the legume, or pea, family. The prairie bush-clover has been found in Cottonwood, Crow Wing and Goodhue counties. It also grows in Illinois, Wisconsin and Iowa, but is always rare and local.

Many more plants along the Cannon River are rare in Minnesota, although they may be common locally. The rare plants list presented here has been compiled from the species collection at the University of Minnesota herbarium.
Rare or protected plants

Ferns and their allies—Pteridophyta
Adder’s-tongue family — Ophioglossaceae
dissected grape fern— Botrychium dissectum
True fern family — Polypodiaceae
slender hio fern— Cheilanthes Feeli
long beech fern— Thelypteris Phegopteris
fragile fern— Cystopteris fragilis var. laurentiana
maidenhair spleenwort— Asplenium Trichomanes
Club moss family — Lycopodiaceae
ground pine— Lycopodium conplanatum var. flabelliforme
shining club moss— Lycopodium lucidulum var. occidentale

Flowering Plants—Angiospermae
Arum family — Araceae
green dragon— Arisaema Dracontium
Sedge family — Cyperaceae
head-like sedge— Carex cephaloidea
crow-spur sedge— Carex crus coryi
stiff sedge— Carex Muhlenbergii
Grass family — Gramineae
fescue grass— Festuca paradoxa
District of Columbia panic grass— Panicum columbiae
woodland speargrass— Poa nemoralis var. interior
Lily family — Liliaceae
Michigan lily— Lilium michiganesne
Minnesota trout-lily— Erythronium propullans
nodding trillium— Trillium cernuum
declining trillium— Trillium flexipes
snow trillium— Trillium nivale
Pink family — Caryophyllaceae
rock sandwort— Arenaria dawsonensis
mouse-ear chickweed— Cerastium arvense var. villosum
snowy campion— Silene nivea
fleshy chickweed— Steallaria clusifolia
Composite family — Compositae
meadow aster— Aster prenanthoides
great Indian-plantain— Cacalia Muhlenbergii
cudweed— Gnaphalium Macounei

Mustard family — Cruciferae
purple rocket— Lomatanthus pinnatifidus
lesquerella— Lesquerella argentea
sissile-flowered yellow cress— Rorippa sessiliflora
Spurge family — Euphorbiaceae
six-angled spurge— Euphorbia hexagona
Gentian family — Gentianaceae
white gentian— Gentiana lutea
closed gentian— Gentiana Andrewsii var. Andrewsii
closed gentian— Gentiana Andrewsii var. dokatca
fringed gentian— Gentiana crinita
stiff gentian— Gentiana quinquefolia var. occidentalis

Mint family — Labiatae
many colored skullcap— Scutellaria ovata var. versicolor
Legume family — Leguminosae
low milk vetch— Astragalus lotiflorus
tick clover— Desmodium illinoense
prairie bush-Clover— Lespedeza leptostachys
Orchid family — Orchidaceae
putty root— Aplectrum hyemale
pretty grass pink— Calopogon pulchellus
spotted coral root— Corallorhiza maculata
large yellow lady’s slipper— Cypripedium Calceolus var. pubescens
small white lady’s slipper— Cypripedium candidum
showy lady’s slipper— Cypripedium reginae
downy rattlesnake plantain— Goodyera pubescens
prairie white fringed orchid— Habenaria leucophaea
bracted green orchid— Habenaria viridis var. bracteata
lily-leaved twayblade— Liparis liliifolia
showy orchis— Orchis spectabilis
nodding ladies-tresses— Spiranthes cernua

Maple family — Aceraceae
black maple— Acer nigrum
Moschatel family — Adoxaceae
little musk— Adoxa Moschatellina
Cashew family — Anacardiaceae
poison sumac— Rhus Vernix
Ginseng family — Araliaceae
bristly sarsaparilla— Aralia hispida
 Ginseng— Panax quinquefolium
Barberry family — Berberidaceae
May-apple— Podophyllum peltatum
Honeysuckle family — Caprifoliaceae
grape honeysuckle— Lonicera prolifera
Bluebell family — Campanulaceae
cardinal flower— Lobelia Cardinalis
Loosestrife family — Lythraceae
scarlet ammamia— Ammamia coccinea
Water-lily family — Nymphaeaceae
water chinquapin— Nelumbo pentapetala
Plantain family — Plantaginaceae
bracted plantain— Plantago aristata
Buckwheat family — Polygonaceae
erect knotweed— Polygonum erectum
Rose family — Rosaceae
tree Juneberry— Amelanchier arborea
alder-leaved Juneberry— Amelanchier alnifolia
Nicollet’s cinquefoil— Potentilla Nicolletii
mild rose— Rosa blanda f. carpohispa
Madder family — Rubiaceae
buttonbush— Cephalanthus occidentalis
Figwort family — Scrophulariaceae
carpenter’s square— Scrophularia marilandica
Vine family — Vitaceae
five-leaved Virginia creeper— Parthenocissus quinquefolia
### Frequently observed plants

**River bottomlands:**
- American elm — *Ulmus americana*
- green ash -- *Fraxinus pennsylvanica var. subintegerrima*
- soft maple -- *Acer saccharinum*
- cottonwood — *Populus deltoides*
- box elder -- *Acer Negundo*
- black walnut -- *Juglans nigra*
- butternut -- *Juglans cinerea*
- bitternut -- *Carya cordiformis*
- red oak — *Quercus rubra*
- basswood — *Tilia americana*
- red osier dogwood — *Cornus stolonifera*
- wild black currant — *Ribes americanum*
- gooseberry — *Ribes hirtellum*
- red raspberry — *Rubus strigosus*
- virginia creeper -- *Parthenocissus inserta*
- wild grape — *Vitis spp.*
- poison ivy — *Rhus radicans*
- stinging nettle — *Urtica dioica*
- wood nettle — *Boehmeria cylindrica*

**South-facing slopes:**
- staghorn sumac — *Rhus typhina*
- red cedar -- *Juniperus virginiana*
- box elder -- *Acer Negundo*
- slippery elm — *Ulmus rubra*
- hackberry — *Celtis occidentalis*
- wild plum — *Prunus americana*
- prickly ash — *Xanthoxylum americanum*
- quaking aspen — *Populus tremuloides*
- bittersweet — *Celastrus scandens*
- burr oak -- *Quercus macrocarpa*
- red oak — *Quercus rubra*

**Goat prairies:**
- compass plant — *Silphium laciniatum*
- silky aster -- *Aster sericeus*
- blazing star -- *Liatris spp.*
- nodding ladies tress -- *Spiranthes cernua*
- Indian grass -- *Sorghastrum nutans*
- white prairie clover — *Petalostemum candidum*
- purple prairie clover — *Petalostemum purpureum*
- mountain mint — *Pycnanthemum spp.*
- big bluestem — *Andropogon Gerardi*
- bastard toadflax — *Comandra Richardsiana*
- flowering spurge — *Euphorbia corollata*
- pasque flower -- *Anemone patens var. Wolfgangiana*
Wildlife

The Cannon River valley provides habitat for a wide variety of wildlife. In addition to the woods, prairie, wetlands and croplands in the valley, rock outcrops, springs, farm buildings, bridges and cutbanks provide habitats attractive to some species.

The big brown bat, for example, is especially fond of barns. The kingfisher, bank swallow, rough-winged swallow, mink, weasel and otter all use cutbanks for nesting and denning places. Cliff swallows and phoebes use bridges and rock cliffs for nesting. Small woodland ponds are attractive mating places for frogs.

Twenty-six species of amphibians and reptiles are known or expected to be common along the Cannon River. Among them is the mud puppy, the largest salamander in Minnesota and the only one that regularly retains its larval state throughout life. The once abundant leopard frog, recently reduced in numbers, perhaps by disease or pesticides, is also found here. The venomous timber rattlesnake inhabits rocky bluffs above the river east of Cannon Falls.

Species reported along the Cannon but rare in Minnesota include the wood turtle, Blanding's turtle, map turtle and massasauga rattlesnake. All are at or near the northwestern extreme of their ranges. Other species observed occasionally include the cricket frog, six-lined racer, false map turtle, pickerel frog and brown soft-shelled turtle.

More than 100 species of birds are known or expected to breed regularly along the Cannon. Twenty-two other species, rare, irreguar or reduced in numbers, may breed here.

A breeding colony of about 50 pairs of great blue herons was observed recently along the river. Other noteworthy species are the pileated woodpecker, whip-poor-will, red-tailed hawk, barred owl and great horned owl. Ospreys fish the river during migration, and bald eagles winter in the vicinity.

Game birds found in the area include the mallard, gadwall, pintail, green-winged teal, blue-winged teal, redhead, wood duck, ruffed grouse, bobwhite, ring-necked pheasant, gray (Hungarian) partridge, snipe, woodcock, rail and coot.

Thirty-six native species of mammals are known to be or
are expected to be common along the Cannon. These include the spotted skunk, whose numbers have recently declined, perhaps because of rabies. There are reports of bobcats, formerly very common in southeastern Minnesota, but decimated by trapping, hunting and loss of habitat. Otters, once common throughout the state but also decimated, are probably present in small numbers. The coyote, fairly common in northern Minnesota, is rare along the Cannon.

Although the distribution of some small mammals has not been fully researched and reported, a number of these species are expected to be found along the Cannon because of habitat conditions. These include the pine vole, rock vole, pocket mouse, harvest mouse and least weasel.

Game species present in the river valley include the cottontail rabbit, gray and fox squirrel, raccoon, red and gray fox, mink, muskrat, beaver and white-tailed deer.

### Amphibians and reptiles

Species considered regionally rare, decimated or irregular in occurrence are indicated by an asterisk (*).

- **mud puppy** — Necturus maculosus
- **common newt** — Notophthalmus viridescens
- **tiger salamander** — Ambystoma tigrinum
- **American toad** — Bufo americanus
- **cricket frog** — Acris crepitans
- **swamp tree frog** — Pseudacris nigrita
- **gray tree frog** — Hyla versicolor
- **gray tree frog** — Hyla chrysoscelis
- **green frog** — Rana clamitans
- **leopard frog** — Rana pipiens
- **pickerel frog** — Rana palustris
- **wood frog** — Rana sylvatica
- **black-banded skink** — Eumeces septentrionalis
- **six-lined racer** — Coluber constrictor
- **smooth green snake** — Opheodrys vernalis
- **fox snake** — Elaphe vulpina
- **hognosed snake** — Heterodon contortrix

- **milk snake** — Lampropeltis triangulum
- **red-bellied snake** — Storeria occipitalisculata
- **DeKay's snake** — Storeria dekayi
- **plains garter snake** — Thamnophis radix
- **common garter snake** — Thamnophis sirtalis
- **blue racer** — Coluber constrictor
- **timber rattlesnake** — Crotalus horridus
- **massasauga** — Sistrurus catenatus
- **common water snake** — Natrix sipedon
- **spiny soft-shelled turtle** — Amyda spinifera
- **snapping turtle** — Chelydra serpentina
- **common painted turtle** — Chrysemys picta
- **Blanding's turtle** — Emys blandingii
- **wood turtle** — Clemmys insculpta
- **map turtle** — Graptemys geographica
- **false map turtle** — Graptemys pseudogeographica
- **brown soft-shelled turtle** — Amyda mutica
## Bird species breeding in the river valley

Species considered rare or irregular in the Cannon River valley are indicated by an asterisk (*). Because common names of bird species have been standardized and widely used, Latin names are not included on this list.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Species Name</th>
<th>Species Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>pied-billed grebe</td>
<td>eastern wood pewee</td>
<td>*chestnut-sided warbler</td>
</tr>
<tr>
<td>great blue heron</td>
<td>horned lark</td>
<td>ovenbird</td>
</tr>
<tr>
<td>green heron</td>
<td>tree swallow</td>
<td>Louisiana waterthrush</td>
</tr>
<tr>
<td>*common egret</td>
<td>bank swallow</td>
<td>common gallinule</td>
</tr>
<tr>
<td>*black-crowned night heron</td>
<td>rough-winged swallow</td>
<td>American coot</td>
</tr>
<tr>
<td>*yellow-crowned night heron</td>
<td>barn swallow</td>
<td>killdeer</td>
</tr>
<tr>
<td>least bittern</td>
<td>cliff swallow</td>
<td>American woodcock</td>
</tr>
<tr>
<td>American bittern</td>
<td>purple martin</td>
<td>common snipe</td>
</tr>
<tr>
<td>mallard</td>
<td>blue jay</td>
<td>spotted sandpiper</td>
</tr>
<tr>
<td>*gadwall</td>
<td>common crow</td>
<td>Forster's tern</td>
</tr>
<tr>
<td>*pintail</td>
<td>black-capped chickadee</td>
<td>black tern</td>
</tr>
<tr>
<td>*green-winged teal</td>
<td>tufted titmouse</td>
<td>rock dove</td>
</tr>
<tr>
<td>blue-winged teal</td>
<td>white-breasted nuthatch</td>
<td>mourning dove</td>
</tr>
<tr>
<td>shoveler</td>
<td>*brown creeper</td>
<td>yellow-billed cuckoo</td>
</tr>
<tr>
<td>wood duck</td>
<td>house wren</td>
<td>black-billed cuckoo</td>
</tr>
<tr>
<td>*redhead</td>
<td>long-billed marsh wren</td>
<td>screech owl</td>
</tr>
<tr>
<td>ruddy duck</td>
<td>short-billed marsh wren</td>
<td>great horned owl</td>
</tr>
<tr>
<td>red-tailed hawk</td>
<td>catbird</td>
<td>barred owl</td>
</tr>
<tr>
<td>*red-shouldered hawk</td>
<td>brown thrasher</td>
<td>*short-eared owl</td>
</tr>
<tr>
<td>*broad-winged hawk</td>
<td>robin</td>
<td>whip-poor-will</td>
</tr>
<tr>
<td>*Swainson's hawk</td>
<td>wood thrush</td>
<td>common nighthawk</td>
</tr>
<tr>
<td>marsh hawk</td>
<td>*veery</td>
<td>chimney swift</td>
</tr>
<tr>
<td>sparrow hawk</td>
<td>eastern bluebird</td>
<td>ruby-throated hummingbird</td>
</tr>
<tr>
<td>ruffed grouse</td>
<td>*cedar waxwing</td>
<td>belted kingfisher</td>
</tr>
<tr>
<td>*bobwhite</td>
<td>blue-gray gnatcatcher</td>
<td>common flicker</td>
</tr>
<tr>
<td>ring-necked pheasant</td>
<td>loggerhead shrike</td>
<td>pileated woodpecker</td>
</tr>
<tr>
<td>gray partridge</td>
<td>starling</td>
<td>red-bellied woodpecker</td>
</tr>
<tr>
<td>*king rail</td>
<td>*Bell's vireo</td>
<td>red-headed woodpecker</td>
</tr>
<tr>
<td>Virginia rail</td>
<td>red-eyed vireo</td>
<td>yellow-bellied sapsucker</td>
</tr>
<tr>
<td>sora</td>
<td>yellow-throated vireo</td>
<td>hairy woodpecker</td>
</tr>
<tr>
<td>eastern kingbird</td>
<td>warbling vireo</td>
<td>downy woodpecker</td>
</tr>
<tr>
<td>great crested flycatcher</td>
<td>prothonotary warbler</td>
<td>yellowthroat</td>
</tr>
<tr>
<td>eastern phoebe</td>
<td>blue-winged warbler</td>
<td>yellow-breasted chat</td>
</tr>
<tr>
<td>*willow flycatcher</td>
<td>yellow warbler</td>
<td>American redstart</td>
</tr>
<tr>
<td>least flycatcher</td>
<td>cerulean warbler</td>
<td>house sparrow</td>
</tr>
<tr>
<td>eastern meadowlark</td>
<td>scarlet tanager</td>
<td>grasshopper sparrow</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>western meadowlark</td>
<td>cardinal</td>
<td>vesper sparrow</td>
</tr>
<tr>
<td>yellow-headed blackbird</td>
<td>rose-breasted grosbeak</td>
<td>lark sparrow</td>
</tr>
<tr>
<td>redwinged blackbird</td>
<td>indigo bunting</td>
<td>chipping sparrow</td>
</tr>
<tr>
<td>orchard oriole</td>
<td>dickcissel</td>
<td>*clay-colored sparrow</td>
</tr>
<tr>
<td>northern oriole</td>
<td>*pine siskin</td>
<td>field sparrow</td>
</tr>
<tr>
<td>Brewer's blackbird</td>
<td>American goldfinch</td>
<td>swamp sparrow</td>
</tr>
<tr>
<td>common grackle</td>
<td>rufous-sided towhee</td>
<td>song sparrow</td>
</tr>
<tr>
<td>brown-headed cowbird</td>
<td>savannah sparrow</td>
<td></td>
</tr>
</tbody>
</table>
Mammals

Species considered regionally rare, decimated or irregular in occurrence are indicated by an asterisk (*).

common mole -- Scalopus aquaticus
*pygmy shrew -- Microsorex hoyi
masked shrew -- Sorex cinereus
*least shrew -- Cryptotis parva
short-tailed shrew -- Blarina brevicauda
little brown bat -- Myotis lucifugus
*Keen's little brown bat -- Myotis keeni
big brown bat -- Eptesicus fuscus
pipistrelle -- Pipistrellus subflavus
silver-haired bat -- Lasiomycteris noctivagans
red bat -- Lasiurus borealis
*hoary bat -- Lasiurus cinereus
white-tailed jackrabbit -- Lepus townsendii
eastern cottontail -- Sylvilagus floridanus
woodchuck -- Marmota monax
thirteen-lined ground squirrel -- Spermophilus tridecemlineatus
Franklin's ground squirrel -- Spermophilus franklinii
eastern chipmunk -- Tamias striatus
red squirrel -- Tamiasciurus Hudsonicus
gray squirrel -- Sciurus carolinensis
fox squirrel -- Sciurus niger
southern flying squirrel -- Glaucomys volans
*northern flying squirrel -- Glaucomys sabrinus
pocket gopher -- Geomys bursarius
beaver -- Castor Canadensis

prairie white-footed mouse -- Peromyscus maniculatus bairdii
northern white-footed mouse -- Peromyscus leucopus
*pine vole -- Microtus pinetorum
common meadow mouse -- Microtus pennsylvanicus
prairie vole -- Microtus ochrogaster
red-backed vole -- Cethronomys gapperi
muskrat -- Ondatra zibethica
*pocket mouse -- Perognathus flavescens
meadow jumping mouse -- Zapus hudsonius
*harvest mouse -- Reithrodontomys megalotis
raccoon -- Procyon lotor
short-tailed weasel -- Mustela erminea
long-tailed weasel -- Mustela frenata
*least weasel -- Mustela nivalis
mink -- Mustela vison
*otter -- Lontra canadensis
spotted skunk -- Spilogale putorius
striped skunk -- Mephitis mephitis
badger -- Taxidea taxus
red fox -- Vulpes vulpes
gray fox -- Urocyon cinereorargenteus
*coyote -- Canis latrans
Bobcat -- Felis rufus
white-tailed deer -- Odocoileus virginianus
Fish

Because of its generally good water quality, the Cannon River supports a wide variety of fish life, including several popular game and pan fish. Fish frequently travel from the Mississippi up the Cannon to the Welch Dam; this area is reported to be a good fishing spot.

There are about 50 fish species that are known residents of the Cannon. Such sought-after game fish as walleye, sauger, rock bass, smallmouth bass, largemouth bass, white bass, northern pike and black crappie are found here. Other fish harbored in the Cannon include black bullheads, bluegills, pumpkinseeds, suckers, redhorse and carp. A more complete list of species is presented at the end of this section.

There are a few fish found in the Cannon that are relatively uncommon in Minnesota. The suckermouth minnow, for example, is found only in the southeastern counties of the state. The southern redbelly dace is found only in southern tributaries of the Mississippi River and reaches its northernmost range in the Cannon. A recent find in the Cannon is the burbot, rare in this part of the state.

The banded darter, at one time thought to be rare, has since been found to be abundant in southern Minnesota. In the Cannon it is the most common darter.

Other fish in the Cannon, though common, are nevertheless interesting. The fathead minnow, for example, is both a good bait minnow and useful in mosquito control. The mimick shiner is an important forage fish for walleye, and its presence here helps maintain the walleye population. The presence of redhorse species in the Cannon indicates that its water quality is good. These fish are some of the first to succumb when water becomes polluted or continuously turbid.

Electro-fishing surveys of the Cannon River were conducted by the DNR in May and July 1977. Electro-fishing is a technique used to temporarily immobilize fish within a small area by introducing an electric field into the water. Fish then can be netted, identified, weighed, measured and returned to the water unharmed.

The May survey was conducted in two short segments of the river. In Section 1, the 1.5 miles above the U.S. Highway 61 bridge (river mile 8.5-7.0), a total of 114 fish were caught. Of these, 84 percent were rough fish and 15 percent were game fish. Rough fish include carp, sucker, redhorse, buffalo and guillback; game fish include such species as smallmouth bass, largemouth bass, sunfish, walleye, northern pike, channel catfish and white bass. Minnows, bullheads and sheepheads make up the balance.

In Section 2, the 1.5 miles above the mouth of Trout Brook (river mile 19.5-18.0), 247 fish were sampled; 80 percent were rough fish, 18 percent were game fish and 2 percent were forage fish.

In the July 1977 survey, the 10 river miles between the Northfield Dam and the State Highway 56 bridge (river mile 41.6-31.6) were shocked. Out of the 1,316 fish sampled in this stretch, 86.3 percent were rough fish, 5.0 percent were game fish and 8.7 percent were minnows.
Fish species

walleye -- Stizostedion vitreum
sauger -- Stizostedion canadense
rock bass -- Ambloplites rupestris
smallmouth bass -- Micropterus dolomieu
largemouth bass -- Micropterus salmoides
white bass -- Morone chrysops
northern pike -- Esox lucius
black crappie -- Pomoxis nigromaculatus
white sucker -- Catostomus commersoni
silver redhorse -- Moxostoma anisurum
golden redhorse -- Moxostoma erythrum
northern redhorse -- Moxostoma macrolepidotum
black bullhead -- Ictalurus melas
bluegill -- Lepomis macrochirus
pumpkinseed -- Lepomis gibbosus
northern hog sucker -- Hypentelium nigricans
gizzard shad -- Dorosoma cepedianum
creek chub -- Semotilus atromaculatus
carp -- Cyprinus carpio
log perch -- Percina caprodes
spotfin shiner -- Notropis spilopterus
freshwater drum -- Aplodinotus grunniens
quillback -- Carpiodes cyprinus
Johnny darter -- Etheostoma nigrum
rainbow darter -- Etheostoma caeruleum
suckermouth minnow -- Phenacobius mirabilis
southern redbelly dace -- Chrosomus erythrogaster
banded darter -- Etheostoma zonale
fathead minnow -- Pimephales promelas
mimic shiner -- Notropis volucellus
burbot -- Lota lota
blacknose dace -- Rhinichthys atratulus
longnose dace -- Rhinichthys cataractae
emerald shiner -- Notropis atherinoides
stoneroller -- Campostoma anomalum
bignose shiner -- Notropis dorsalis
sand shiner -- Notropis stramineus
bluntnose minnow -- Pimephales notatus
brassy minnow -- Hybognathus hankinsoni
finescale dace -- Chrosomus neogaeus
common shiner -- Notropis cornutus
silver chub -- Hybopsis storeriana
blackside darter -- Percina maculata
slenderhead darter -- Percina phoxocephala
river darter -- Percina shumardi
spottail shiner -- Notropis hudsonius
striped fantail darter -- Etheostoma flabellare
silver lamprey -- Ichthyomyzon unicuspis
stone cat -- Noturus flavus
green sunfish -- Lepomis cyanellus
northern redbelly dace -- Chrosomus eos
speckled chub -- Hybopsis aestivalis
rosey faced shiner -- Notropis rubellus
Recreation

The Cannon River valley's resources lend themselves naturally to a variety of outdoor activities, including fishing, hunting, canoeing, inner-tubing, camping and hiking.

The Cannon valley and surrounding areas provide excellent habitat for both large and small game. Migratory waterfowl find resting and breeding areas in the many marshes and potholes near Red Wing. The river supports a fair game fish population that includes walleyes, smallmouth bass and sunfish.

The Cannon is popular with canoeists. During the paddling season the water is generally at a level that permits canoeing. The river's moderate current and the absence of difficult rapids make the river ideal for novice boaters and family outings. The high bluffs and other beautiful scenery in the valley contribute to the river's appeal.

Floating the river in inner tubes is another popular activity on the Cannon, especially near Welch. The Cannon receives heavier tubing use than most other streams in the state. In fact, it is one of the few state rivers where an outfitter caters to inner-tubing.

The natural character of the river valley also encourages camping, hiking, nature observation and photography.

The accompanying table shows the existing public recreational facilities along the Cannon River.

<table>
<thead>
<tr>
<th>River Mile</th>
<th>Site Identification</th>
<th>Ownership</th>
<th>Operation-Maintenance</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.2-47.4</td>
<td>Cannon River Wilderness Area</td>
<td>Rice County</td>
<td>Rice County</td>
<td>River left: Toilets, picnic shelter, picnic tables, garbage cans, crushed rock parking lot and road, designated campsites, fire rings and hiking trails. River right: Campsites, fire rings and hiking trails.</td>
</tr>
<tr>
<td>45.1</td>
<td>Dundas City Park</td>
<td>Village of Dundas</td>
<td>Village of Dundas</td>
<td>Two baseball diamonds, picnic shelter, picnic tables, garbage cans, water fountains, toilets, fire grills, campground, canoe access and crushed rock parking lot and road.</td>
</tr>
<tr>
<td>43.3-42.1</td>
<td>Sechler Park</td>
<td>Northfield</td>
<td>Northfield</td>
<td>Undeveloped.</td>
</tr>
<tr>
<td>Milepost</td>
<td>Park/Location</td>
<td>County</td>
<td>City</td>
<td>Facilities</td>
</tr>
<tr>
<td>----------</td>
<td>--------------</td>
<td>--------</td>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>42.5-42.1</td>
<td>Babcock Park</td>
<td>Northfield</td>
<td>Northfield</td>
<td>Baseball diamond, archery range, swing set, sandbox and outdoor toilets.</td>
</tr>
<tr>
<td>42.1-41.9</td>
<td>Riverside Park</td>
<td>Northfield</td>
<td>Northfield</td>
<td>Covered shelter, picnic tables, water faucets, fire grills, garbage cans, toilets and crushed rock parking lot and road.</td>
</tr>
<tr>
<td>32.3-32.0</td>
<td>Dakota County parkland</td>
<td>Dakota County</td>
<td>Dakota County</td>
<td>Rest area with no facilities.</td>
</tr>
<tr>
<td>27.1</td>
<td>Lake Byllesby access</td>
<td>Dakota County</td>
<td>Dakota County</td>
<td>Access and dock about 300 yards from campsite.</td>
</tr>
<tr>
<td>27.0</td>
<td>Lake Byllesby Park</td>
<td>Dakota County</td>
<td>Dakota County</td>
<td>Campground, swimming beach, drinking water and toilets.</td>
</tr>
<tr>
<td>27.0</td>
<td>Goodhue County parkland</td>
<td>Goodhue County</td>
<td>Goodhue County</td>
<td>Boat launch.</td>
</tr>
<tr>
<td>25.3-</td>
<td>Lower Hannah's Bend Park</td>
<td>Searle's Grain Company, 25-year lease to Cannon Falls.</td>
<td>Cannon Falls</td>
<td>Picnic shelter, picnic tables, toilets, archery range, boat access with dock and crushed rock road and parking lot.</td>
</tr>
<tr>
<td>25.2</td>
<td>Upper Hannah's Bend Park</td>
<td>Cannon Falls</td>
<td>Cannon Falls</td>
<td>Park benches, picnic tables and playground equipment.</td>
</tr>
<tr>
<td>25.0</td>
<td>Riverside Park</td>
<td>Cannon Falls</td>
<td>Cannon Falls</td>
<td>Covered shelter (donated by Izaak Walton League), toilets, picnic tables, playground equipment, garbage cans, water fountain and crushed rock road and parking lot. Access is possible, though there is no developed access.</td>
</tr>
<tr>
<td>7.0</td>
<td>DNR access</td>
<td>DNR</td>
<td>DNR</td>
<td>Access and parking lot.</td>
</tr>
</tbody>
</table>
Population

Trends and projections indicate that the steady increase in population in the Cannon River area will continue. Tables A, B and C illustrate these trends in the counties, cities and townships near the Cannon River.

**TABLE A: County Population Trends.**

<table>
<thead>
<tr>
<th>County</th>
<th>1970</th>
<th>1976 (est.)</th>
<th>% Increase</th>
<th>2000 Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dakota</td>
<td>139,808</td>
<td>175,400</td>
<td>25.5</td>
<td>293,300</td>
</tr>
<tr>
<td>Goodhue</td>
<td>34,804</td>
<td>39,000</td>
<td>12.1</td>
<td>48,600</td>
</tr>
<tr>
<td>Rice</td>
<td>41,582</td>
<td>43,200</td>
<td>3.9</td>
<td>50,200</td>
</tr>
<tr>
<td>Total</td>
<td>216,194</td>
<td>257,600</td>
<td>19.2</td>
<td>392,100</td>
</tr>
</tbody>
</table>

**TABLE B: City Population Trends.**

<table>
<thead>
<tr>
<th>City</th>
<th>1960</th>
<th>1970</th>
<th>1975</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faribault</td>
<td>16,926</td>
<td>16,595</td>
<td>16,255</td>
<td>-2.1</td>
</tr>
<tr>
<td>Dundas</td>
<td>488</td>
<td>460</td>
<td>477</td>
<td>+3.7</td>
</tr>
<tr>
<td>Northfield</td>
<td>8,707</td>
<td>10,235</td>
<td>11,163</td>
<td>+9.1</td>
</tr>
<tr>
<td>Cannon Falls</td>
<td>2,055</td>
<td>2,072</td>
<td>2,376</td>
<td>+14.7</td>
</tr>
<tr>
<td>Red Wing</td>
<td>10,528</td>
<td>12,834</td>
<td>14,063</td>
<td>+9.6</td>
</tr>
<tr>
<td>Total</td>
<td>38,704</td>
<td>42,196</td>
<td>44,336</td>
<td>+5.1</td>
</tr>
</tbody>
</table>

**TABLE C: Township Population Trends.**

<table>
<thead>
<tr>
<th>Township</th>
<th>1960</th>
<th>1970</th>
<th>1975</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannon City</td>
<td>955</td>
<td>1,062</td>
<td>1,077</td>
<td>+1.4</td>
</tr>
<tr>
<td>Bridgewater</td>
<td>1,019</td>
<td>1,315</td>
<td>1,303</td>
<td>-0.9</td>
</tr>
<tr>
<td>Waterford</td>
<td>420</td>
<td>521</td>
<td>499</td>
<td>-4.2</td>
</tr>
<tr>
<td>Sciota</td>
<td>213</td>
<td>213</td>
<td>216</td>
<td>+1.4</td>
</tr>
<tr>
<td>Randolph</td>
<td>178</td>
<td>267</td>
<td>366</td>
<td>+37.1</td>
</tr>
<tr>
<td>Stanton</td>
<td>475</td>
<td>722</td>
<td>826</td>
<td>+14.4</td>
</tr>
<tr>
<td>Cannon Falls</td>
<td>741</td>
<td>1,023</td>
<td>1,238</td>
<td>+21.0</td>
</tr>
<tr>
<td>Welch</td>
<td>510</td>
<td>529</td>
<td>571</td>
<td>+7.9</td>
</tr>
<tr>
<td>Vasa</td>
<td>803</td>
<td>784</td>
<td>833</td>
<td>+0.6</td>
</tr>
<tr>
<td>Total</td>
<td>5,314</td>
<td>6,436</td>
<td>6,929</td>
<td>+7.7</td>
</tr>
</tbody>
</table>

More than 2 million Minnesotans live within a two-hour drive of the Cannon River. The population of the seven-county metropolitan area, estimated at 2 million in 1976, is expected to increase to about 2.9 million by 2000. Because of this increase in population and in view of the proximity of the Cannon River to the metropolitan area, recreational use of the river is expected to increase.

Archaeology

The Cannon River valley is one of the most important archaeological areas in Minnesota, according to Christy Caine, state archaeologist and Hamline University professor. By 1000 A.D. the area near the junction of the Cannon and Mississippi rivers was a major center of prehistoric Indian life. This Oneota Indian culture, apparently related to the great Middle Mississippian center at Cahokia, Illinois, was probably the closest prehistoric Minnesota people came to an urban society.

Earlier prehistoric cultures of the Middle Woodland period
antedate the Oneota and numbers of the burial mounds of the region can be attributed to these forerunners. Pre-pottery cultures of the Archaic and Paleo-Indian periods also exist in the Cannon River area. Although none of the archaeological sites of these very early times have been excavated, surface collections of artifacts from the uplands bordering the river valley demonstrate that such sites do exist.

The Cannon River was part of an east-west route that linked the peoples of the eastern rivers with those of the western plains. Instead of ascending the Mississippi to its junction with the Minnesota River and continuing west up the Minnesota, it was more common to take the Cannon westward and portage from its upper reaches to the Minnesota.

About 25 burial mound concentrations and five village sites have been recorded along the Cannon River. Thousands of burial mounds, once common along ridgetops and high river terraces, have been lost to cultivation and construction. But archaeologists, excavating mounds and village sites that escaped destruction, have pieced together a picture of life in this society.

Two such sites along the Cannon River are the Bryan Village and Fort Sweeney sites. Fort Sweeney, listed in the National Register of Historic Places, is across the Cannon River from Welch. Situated on a high hill overlooking the river valley, the Fort Sweeney site contains 41 pits, mounds and other earthworks. Excavation has led archaeologists to believe that this was a burial ground or ceremonial place.

The Bryan Site, a large prehistoric village and burial area, lies on a high terrace immediately south of the Cannon River near Red Wing. A rich deposit of gravel was discovered in this terrace and was leased by the Minnesota State Highway Department. When the gravel was removed from the eastern end of the area, a number of burials were exposed and later investigated by the University of Minnesota. When the topsoil was stripped off land further to the west, a large number of black dirt-filled holes indicating storage pits and the presence of an ancient Indian village were revealed. The site has since been destroyed.

The Oneota people lived in extensive villages housing from 600 to 800 people. At least some residents, as evidenced by the Bryan Site, occupied small, semi-subterranean houses. Sometimes surrounded by a protective wall or palisade, the villages were often located on flat river terraces above the bottomlands. Deep underground storage pits for vegetables were dug throughout the villages.

The Oneota people depended on the cultivation of corn, beans, squash, sunflowers and tobacco. Timbered areas in the river bottoms were cleared and small garden plots planted. Hunting and fishing were still important, however; bison remained a staple food.

The storage pits are of special interest to archaeologists because such pits were often used for village refuse after they were no longer fit for storing vegetables. They therefore often contain broken tools, parts of pottery vessels and animal bones and ashes. Small projectile points, scrapers and other unbroken tools were sometimes lost in these pits. Whole pots occasionally were dropped into pits and broken. Consequently, according to one researcher, "archaeological treasures may be found in the midst of prehistoric garbage."

Oneota pottery and stone weapons and tools, such as arrowheads, knives, axes and hide scrapers, have been found at the village sites. Bone tools also were commonly used. A hoe, made of a bison or elk shoulder blade, is one of the most frequently found bone tools. Awls, fish hooks, needles, dice and bracelets of bone were also used in Oneota villages. Shells were usually used as personal ornaments, and sometimes as spoons and dippers.

Oneota cultures are ancestral to many of the historically known Siouan-speaking groups of the Midwest. Tribes such as the Winnebago, Iowa, Missouri and Oto developed from this village farming–bison hunting prehistoric culture.
History

The Cannon River, winding through the rich farming country of southeastern Minnesota, has played a significant role in the development of this area. First a transportation route for Indians and fur traders, the Cannon later attracted settlers, powering sawmills and grist mills in the prosperous communities on its banks.

French fur traders called the Cannon La Riviere aux Canots, "the river of canoes." Indians and traders frequently hid their canoes near the river's mouth as they set out to hunt in the adjoining prairie lands.

The river's present name, a mispronunciation of the original French, comes from the narratives of explorer Zebulon Pike's expedition in 1805-06. Pike used the name Canoe River when telling of his journey up the Mississippi, and the name Cannon River in the account of his return trip.

According to another explorer, Joseph Nicollet, the Dakota Indians called the Cannon Inyan bosndata, or Standing Rock. The name referred to an eroded rock column near the river in Dakota County, later called Castle Rock by white settlers.

One of the first permanent settlers of the Cannon River valley, Alexander Faribault, came as an agent of the American Fur Company in 1826 or 1827. He established a trading post at the Dakota village of Tetonka Tonah, located on what was later to be known as Cannon Lake. During the late 1820s Minnesota was dotted with fur trading posts, most controlled by the American Fur Company. Their business was considerable. In a single year on the Cannon Faribault's trade included 1,100 minks, 2,030 pounds of deerskins, 39,080 muskrats and smaller numbers of buffalo robes, martens, raccoons, lynx, fox and beaver.

Some years after his arrival, impressed with the possibilities for water power at the confluence of the Straight and Cannon rivers, Faribault relocated his trading post here, eventually building the first frame house in Rice County in the town he founded.

For many years Faribault and several other traders were the only white inhabitants of the area. However, with the ratification in 1852 of the Treaty of Mendota with the Dakota Indians, the area was opened for settlement and the era of immigration began. Men such as Faribault and John W. North, the founder of Northfield, set about securing land along the Cannon River not only for town sites, but for dam sites as well.

The Cannon River and its tributaries had several advantages which were widely advertised in Eastern papers to attract settlers: the streams offered power facilities; large level floodplains offered extensive tracts of fertile land; and the uplands offered dense stands of hardwoods interspersed with openings of natural grassland.

The local papers did some advertising as well. An editorial in the Faribault Herald proclaimed the virtues of the Cannon River valley:

The rich sandy loam of the valleys of the Cannon and Straight Rivers yields the most abundant crops in turn for little effort. The country is well watered by streams, and wells are easily dug which furnish abundance of pure water at a depth of from 12 to 30 feet... Beet, rutabaga and onion sown broadcast and harrowed in, yield enormously. Cranberries grow wild; there are groves of plums and wild berries, strawberries which easily can be cultivated. Crab apples, which make excellent sauce and pies, are good baked, and make the very best of jelly, superior to any other and are to be had by the bushel for the picking. Gooseberries grow wild also and our streams are bordered with fine grapes...

The thousands of acres of maple forest furnish us with sugar and syrup, equal to the best. The sugar cane was tried here last year and succeeded admirably. In fact every needful thing will grow here. Winter wheat and spring wheat is unsurpassed by any.

Game is abundant enough to pay for hunting. Our sharpshooters get deer, and any one that can fire a gun can get plenty of prairie chickens with very little trouble... Fish are so plentiful and so large that the whole truth would sound like a fish story... In the spring and fall our lakes are covered with ducks and geese, and our woods during the season are alive with pigeons and partridges. Not much danger of starving.
From reports connected with the military service, Minnesota has the healthiest climate in the United States. The dryness of our atmosphere is especially favorable to persons inclined to lung complaints.

As the influx of immigrants began, the territorial government built roads to accommodate them. Cannon Falls was located on one of the most important of these roads, that which ran from Dubuque, Iowa, to St. Paul. Cannon Falls was a stopping place and a fording place for thousands of immigrants in the 1850s. Their passage through town was complicated by the fact that for many years there was no permanent bridge over the Cannon River. A letter from an early settler, published in 1903 in the Cannon Falls Beacon, recalls the mid-19th century on the river:

One of the greatest trials for us who lived on the north side of the Big Cannon was the lack of a permanent bridge. For many years there were none that would stand the spring freshets and the breaking up of the ice. A kind of ferry was tried, then a pontoon bridge. In the winter we had always a safe bridge, and in summer a ford, but for three or four weeks every spring there would be no way we could safely get to town.

The Cannon River valley's place in the history of American fiction was probably due to Minnesota's (unearned) reputation as a haven for those suffering from lung complaints. Author Edward Eggleston came to southeastern Minnesota in 1836, seeking a cure for a chronic respiratory infection. His book, The Mystery of Metropolisville, is the story of a typical boom town that collapsed when the Panic of 1837 wiped out its false prosperity. The town is modeled on Cannon City, where Eggleston spent his first few weeks in Minnesota.

The effects of the Panic of 1837 were alleviated somewhat in the Cannon River valley by the 1859 ginseng boom in Minnesota.

The Chinese demand for wild ginseng root was great—they looked upon the root as a cure—all tonic. In Minnesota ginseng grew luxuriantly in the Big Woods, a dense hardwood forest dominated by large deciduous trees, particularly sugar maple, basswood, elm and red oak. The eastern edge of the Big Woods ran along the Cannon River through Faribault and Northfield.

In the fall of 1858, advertisements in the Faribault weekly newspapers offering money for ginseng spurred the rush to the woods.

Red Wing also had a short-lived ginseng boom. On June 18, 1839 the Red Wing Sentinel announced under the headline "Ginseng Fever" that "premonitory symptoms of this epidemic, which is raging so extensively in some parts of this State, have made their appearance in our usually healthy community." Within a week the ginseng fever was raging to the point where it threatened to "depopulate" the city. Anyone who could "bear the inconvenience of a hot sun, mosquitoes and woodticks" was advised to go out and dig.

However, by June 29 the boom appeared to be over. The Faribault Central Republican reported that the ginseng trade had fallen off rapidly and the supply was nearly exhausted.

Hides, furs and ginseng root, compact articles of relatively high value for their weight, were the principal exports of the Cannon River area before the opening of railroad service here in the late 1850s. With improved shipping facilities, the exploitation of the Big Woods began and the number of sawmills along the river increased dramatically. The river valley contributed to the extension of the rails across the Dakotas by furnishing ties to lay the tracks. Another large part of the annual cut was shipped to the Twin Cities, where it was used for local building and the manufacture of barrels.

The cut greatly exceeded the annual growth so that the timber supply was rapidly diminished. As the supply dwindled, the market for the ties also lessened because the railroads had completed their greatest period of expansion. Finally, the removal of the forest opened the land for cultivation. Very little of the Big Woods was removed for the single purpose of clearing land.

The wheat fields of the northwest, the Red River valley, Canada and the Dakotas had not been broken, and the Cannon River valley became one of the most important wheat areas in the country. The sawmills were soon converted to grist mills; by 1877 there were 15 flour mills along the 20 miles of river between Faribault and Northfield alone.

Adelbert Ames, part owner of a flour mill in Northfield, predicted as early as 1866 that the mill would "prove a gold
mine to us by and by." Ten years later the mill's flour took a first prize in the Centennial Exposition in Philadelphia.

In 1874, and for years thereafter, Goodhue County was described as the banner wheat county in the United States, in both acres sown and bushels produced. In 1873 it was said to have produced 3.29 million bushels, nearly one-half of which were milled locally.

By 1880 the Cannon River mills were producing flour of such quality that it commanded the highest prices on the New York and London exchanges.

At Dundas, travelers can still see the aging limestone walls of the Archibald mill. One of the largest mills on the Cannon, the Archibald mill occupied a three-story building and had four pairs of millstones. Farmers sometimes drove wheat as far as 80 miles to use the Archibald facilities. Both the mill and the Archibald house were entered in the National Register of Historic Places in 1976.

The excellent quality of the Cannon River flour was due largely to the New Process milling developed by two French-Canadian brothers, Nicholas and Edmund La Croix, who were brought to the river valley by Alexander Faribault. Through the process developed by the La Croix brothers it was possible to make fine white flour out of hard spring wheat middlings, a fact that made Cannon River millers among the most famous in the world.

The decline of the Cannon River valley as a wheat center is attributable to repeated wheat failures caused by soil exhaustion and insects. The railroads which contributed to the lumbering and milling prosperity of the Cannon River valley later aided in its decline. The speeding up of freight, combined with rate reductions, led to the concentration of milling in the Twin Cities. Expansion of the railroads to the wheat lands of the west hastened the decline of wheat production. By 1910 the Cannon River area ceased to be a milling center and only one of the 15 mills between Faribault and Northfield remained.

To many living during the 19th century the swift waters of the Cannon River meant water power and industry, but to Ignatius Donnelly, Minnesota representative to Congress from 1863 to 1868, that water meant transportation. Donnelly put through Congress a project whereby the U.S. government made a survey of Rice, Goodhue and Dakota counties with the
object of developing a short steamboat route from the Minnesota River to the Mississippi River via the Cannon River and a series of locks. Needless to say, Donnelly's steamboat route never materialized.

No account of the history of the Cannon River valley would be complete without mention of the Jesse James gang's 1876 attempt to rob the Northfield bank, now the cause for annual celebration by that city.

Originally intending to rob the Mankato bank, the gang rode on to Northfield when Jesse James was recognized on the streets of Mankato. Two members of the gang, sent ahead to survey the prospects in Northfield, reported that the situation looked promising. It wasn't. The townspeople put up a stiff fight with guns commandeered from the hardware stores, killing two of the outlaws. Of the six gang members who escaped, posses captured three and killed one. Jesse James and his brother, Frank, managed to escape the territory.

As settlers came to the Cannon River valley, counties were established and cities platted. Here are brief descriptions of how some of the settlements along the river originated:

**Rice County:** Established March 5, 1853, and named in honor of Henry Mower Rice, one of the two first U.S. senators from Minnesota.

Faribault, the county seat, was platted in 1855, organized in 1858 as a township and incorporated as a city in 1872. The city was named after its founder, fur trader Alexander Faribault.

Northfield, platted in 1855, incorporated as a village in 1871 and as a city in 1875, commemorates John W. North, its founder.

Dundas, platted in 1857 and chartered in 1879, bears the name of a large town in Ontario commemorating Henry Dundas, an eminent British statesman. Its founders, Edward T. and John M. Archibald, came from Dundas in Ontario, built a flour mill here and made some of the finest flour in the state.

**Goodhue County:** Established March 5, 1853, and named in honor of James Madison Goodhue, the first printer and editor in Minnesota, whose influential writing helped persuade settlers to come to the state.

Red Wing, the location of a mission to the Dakota Indians in 1837, was first settled for farming and Indian trading in 1850–52; was chosen to be the county seat in 1833; and was incorporated as a city in 1857. Red Wing was the name of a succession of Dakota chiefs whose band resided where the city now stands. The Dakota name for this place was Rhamnicha. This means Hill-Water-Wood place, formed by three Dakota words: Rhe, a high hill or ridge, mini, water, and chan, wood. The name refers to the Barn Bluff and other high river bluffs, and to the abundance of water and wood, which made it an ideal campground.

Cannon Falls, settled in 1854 and organized in 1858, derived its name from a waterfall located here which was buried in 1910 through the construction of a dam across the Cannon River.

Welch, settled in 1857 and organized in 1864, was then named Grant, in honor of General U.S. Grant, but it was renamed Welch in 1872 to commemorate Abraham Edwards Welch of Red Wing. He volunteered at Lincoln's first call for troops at the outbreak of the Civil War and was a first lieutenant in the First Minnesota regiment. Later he was a major in the Fourth Minnesota regiment, and died from wounds received at the battle of Vicksburg.

**Dakota County:** Established October 27, 1849 and named for the Dakota Indians, whose name means alliance or league.

Randolph, established in April 1858, was then named Richmond, in honor of John Richmond, the first settler within its limits. This name was rejected in September 1858 because there was another Richmond in the state; and in October it was renamed Randolph, after the Virginia statesman, John Randolph.

Waterford, established in 1858, received its name from a ford across the Cannon River. This ford was on the old trail from St. Paul to Faribault.
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