

## Raccoon River, Iowa

### 1. Region surrounding the river

a. The Raccoon River flows from its source in Buena Vista County along the western edge of the Wisconsin drift region in a general southeasterly direction to its confluence with the Des Moines River in Polk County, a distance of 200 miles. The Raccoon Basin drains some 3,640 square miles involving 14 counties with a total drop of 550 feet in elevation, ranging from 1,325 feet msl at its source to nearly 800 feet msl at its mouth. Above the south fork the river is geologically young, and the drainage tributaries are few in number and poorly developed. The river has cut a deep channel but has had little time to develop a floodplain. Below the forks the Wisconsin drift melt left only minor deposits. Here the Raccoon River cuts easily into its former floodplain some two miles wide and millions of years old. The topography is steep and rugged with bluffs over 200 feet high. The South Raccoon River is the principle tributary draining 1,150 square miles of watershed and joins the North Raccoon River just north of Van Meter in Dallas County. Other major tributaries are: Cedar and Indian Creeks in Sac County; Camp Creek in Calhoun County; Purgatory Creek in Carroll County; Cedar, Hardin, and Buttrick Creeks in Green County; and Walnut Creek in Polk County.

The vegetation in the study area has undergone tremendous changes. Eighty percent of central Iowa was tall grass prairie at the time of early settlement. Early atlases reveal that much of the floodplain of the Raccoon River was in timber. Many areas along the fertile river bottoms have been cleared and cultivated. Large timber tracts yet remain because they are subject to flood, are inaccessible, or the slopes are too steep for cultivation. The vast prairies have almost entirely been converted into agricultural lands.

The Raccoon River Valley is largely agricultural with crops and livestock paramount products. Vast pasture lands and alfalfa fields support many large herds of cattle in the upper river valley of Sac and Calhoun Counties. Some pasture land also supports sheep and in isolated instances, hogs. Agricultural products of the middle and lower river valley include corn, soybeans, sweet and red clover, oats, alfalfa, and small grains.

There are no extensive stands of commercial timber.

Coal is the only valuable mineral of any commercial importance within the study area. Extensive coal mining operations were conducted near Old Rippey, Dawson, Angus, and Van Meter.

Extensive sand and gravel quarrying occurs throughout the river valley with the largest operations centered between Adel and Des Moines.

The Raccoon River, as a source for municipal water supplies is relatively untapped. Before 1968 only two cities, Adel and Des Moines, utilized water directly from the river.

Access to the study area has greatly improved with the completion of Interstates 80 and 35 in Dallas and Polk Counties, respectively. Both systems transport heavy recreational traffic from Des Moines to the Raccoon River Valley. Peak pressures are concentrated on weekends, but steady visitations occur throughout the week. Access farther upstream is handled by federal east-west highways: 6 through Adel in Dallas County; 30 through Jefferson in Greene County; and 20 through Sac City in Sac County. North-south traffic is handled by 71 through Auburn in Sac County; and 169 through Minburn and Adel in Dallas County. Other parts of the study area have ample access provided by state and county road networks. Much of Iowa's scenic roads follow her river valleys and streams. Because of the rugged terrain and the infeasibility to bridge the river every mile, the road grid pattern has been disrupted throughout the Raccoon River Valley. There is on the average one bridge for every 3.5 river miles.

Rail service to the study area is provided by the Chicago and Northwestern, Chicago, Milwaukee, St. Paul, and Pacific, and the Illinois Central. Major commuter services are located in Des Moines and Perry. Commercial air traffic is practically nonexistent outside of Des Moines. However, a small airport is located at Jefferson.

b. According to the 1970 census urban counties within the study area have gained population while rural counties have lost. Counties losing population were Sac, from 17,007 in 1960 to 15,288; Calhoun from 15,923 to 13,987; Carroll from 23,431 to 22,887; and Greene from 14,379 to 12,836. Sac, Calhoun, and Green Counties lost ten percent of their population within the past decade.

By far the largest urban area affecting the study is Des Moines in Polk County. Des Moines, situated at the mouth of the Raccoon River, lies partly within and adjacent to the Raccoon River Valley. According to the 1970 census figures, Des Moines population was down to 198,561 from 208,982 in 1960. Polk County on the other hand recorded a five percent increase from 266,351 to 279,848. This fact has contributed to suburban sprawl to the west and south. Dallas County, within easy commuting distance from Des Moines and feeling the effects of suburban growth within its eastern county limits, recorded an increase in population from 24,123 in 1960 to 25,787.

c. Heavy recreational pressures are placed on the Raccoon River annually. Major users include fishermen, hunters, picnickers, campers, and pleasure drivers. The most heavily used recreation areas within the corridor are local to Des Moines and include: Ashworth and Greenwood Parks; Water Works Park; Walnut Woods State Park; Grays Lake (undeveloped); Riverside Park; and McRae Park. All of these parks are well developed and offer a wide range of recreational activity.

Squirrel, raccoon, deer, and rabbit are popular game species within the corridor. Squirrel and raccoon hunting are excellent throughout the corridor and deer is excellent in the upstream counties of Sac, Calhoun, and Greene and fair in Dallas County. Rabbit hunting is considered generally fair throughout the corridor. There are twelve public hunting areas; however, most of the hunting occurs on private property. There are no public hunting facilities within the corridor in Dallas County where heavy Des Moines pressures are greatest. The largest single area is McMahan Access in Greene County comprising 287 acres.

Fishing pressures on the river are even heavier than those for hunting. Access is limited to existing municipal, county, and state parks and county bridges. Public access is deficient in Dallas County where only three areas are provided, two of which are municipal facilities at Adel.

Picnicking and camping are the most popular and most offered activities within the corridor.

Surprisingly, the river receives little use as a canoeing stream. Boy Scouts frequently canoe from Henderson County Park near Jefferson to Squirrel Hollow County Park. Other popular canoeing stretches are those between Perry and Adel, Dallas County and within the Des Moines city limits. Canoeing would be more popular if rentals and transportation services were available within the corridor. Today, the only canoeing use of the river is by persons owning their own canoe and willing to transport them to the river.

## 2. River

a. The Raccoon River flows approximately 98 miles from its source to its confluence with the Des Moines River. Width and depth data is not available. The average discharge at Van Meter, Iowa, over a 40-year period was 1,198 cfs. Fluctuations are caused by the power plant at Adel, ten miles above Van Meter.

b. The removal of timber from the floodplain and upland bluffs has created a shift in game animals from the larger species to the smaller. The largest species of wildlife present is the white-tailed deer.

At present only small portions of the land along the river exists in public and private recreation, which in general are well developed. Fishing and hunting pressures are so intensive, however, that most access is attained through private lands.

Fishing pressures are regarded as heavy throughout the entire river corridor. Some of the more abundant rough fish species include: shad, shiners, quillback, carp, buffalo, redhorse, and during high waters the American eel. Game fish include: channel catfish, bullhead, crappie, smallmouth bass, walleyed pike, and flathead. Smallmouth fishing is at its best during spawning season on Cedar, Indian, and Camp Creeks in Sac and Calhoun Counties and Purgatory Creek in Carroll County.

Seventy historic and archaeological sites have been identified along the Raccoon River. Sixteen of these are historic mill sites and the remaining 54 are significant to the development and history of the area.

c. Water quality is generally acceptable but requires some treatment measures. The water quality of surficial aquifers throughout the river corridor is excellent. The Raccoon River, like many Iowa streams, has been used in the past as an open sewer.

Sanitary land fills are found within or near the corporate limits of almost every town within the river valley. Land fill units, or "dumps" as they are more esthetically described, are almost exclusively located on the low lying first terraces of the floodplain. It has been proven that land fill units pollute the ground water which eventually seeps into the river. Large land fill units are to be found at Sac City, Jefferson, Dawson, Perry, and Des Moines. Another unit is found one mile north of Carroll Access, Carroll County.

Instances of erosion and siltation from improper farming practices were rare except for one instance 1.5 miles northwest of Dawson. Cattle use the river as a water and bathing source. In Sac, Calhoun, Carroll, and northwestern Green Counties, where the river is shallower, fording by cattle from one side to the other is relatively easy especially during low water flow. Electric and barb wire fencing has been strung across the river to contain the cattle. Other instances of visual pollution within the corridor include junked automobile bodies in the river south of Jefferson, auto junk adjacent to the river at Perry, and an area south of Adel where cleared floodplain vegetation has been pushed over the river bank. Effluents from sand and gravel operations affecting river clarity occurred within the corporate limits of Des Moines.

e. The Raccoon River flows through typical Iowa farming country. The rich soils in this area are some of the most productive in the country. The river user is exposed to rolling hills which range from

dense woodlands, on the steeper slopes, to open farmland in the valleys. In places the river is bordered by high straight banks and in others by long sandbars. The character of the river is constantly changing and provides an interesting trip. Numerous historic buildings, mills, and bridges can be seen as one travels down the river.

f. The majority of the river is in private ownership. Public access and facilities are limited and scattered.

g. Recreation Facilities

	Sites	Acres
Federal	None	None
State	6	669
County and Municipal	45	2,231
Private	19	2,925

h. Fishing pressures are locally heavy throughout the entire river corridor. However, state and county access is severely deficient with most access obtained through private property. Such access is minimal and often inflexible. Most of the existing access points greet the angler with a minimum river frontage. The better fishing areas have not been developed because they are inaccessible by state and county roads. A total of 22 access points are available in the six-county area bordering the Raccoon River. See maps 1:250,000 Des Moines, Fort Dodge, and Omaha quadrangles.

3. Facilities at present are mainly confined to county and municipal areas. These are for the most part small with minimum development. Many are not on the river and are more of a support facility than a water-based recreation opportunity.

Many of the state and county lands could be expanded to provide facilities and access. Facilities could be established on the location of natural resources to offer resource-based recreational opportunities. With an ever expanding population, increased leisure time, greater mobility, and more disposable income, it is apparent that people will seek additional recreational facilities. The Raccoon River has the potential to provide these facilities.

The proposed Jefferson Reservoir, currently under study by the Corps of Engineers, is an immediate threat to this stream. This reservoir, if constructed, would inundate approximately 45 miles of river at full flood pool.

4. Sources

a. Conservation Recreation Analysis. Raccoon River from Sac City to Des Moines, Iowa. Gary Hightshoe. Iowa State University, 1970.

U. S. Department of Commerce, Bureau of the Census. Final Population Counts, Iowa, December, 1970. Low Flow Characteristics of Iowa Streams, USGS, 1958.