PROFESSIONAL PAPER

CACHE LA POUDRE TRAIL
INTERPRETIVE PLAN

Submitted by
Jacquelyn C. Koirtyohann

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WE HEREBY RECOMMEND THAT THE PROFESSIONAL PAPER PREPARED UNDER OUR SUPERVISION BY JACQUELYN C. KOIRTYOHANN ENTITLED CACHE LA POUDRE TRAIL INTERPRETIVE PLAN BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

Committee on Graduate Work

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Adviser

ABSTRACT

CACHE LA POUDRE TRAIL INTERPRETIVE PLAN

This report suggests a plan for interpretation of significant resources along the proposed Cache La Poudre River Trail. The Cache La Poudre River corridor is an exceptional area with unlimited recreation potential. There is a wealth of natural features deserving interpretation, such as geology, vegetation, wildlife and soils. Also, there are many cultural resources relating to man's development of the area. Important landmarks of early history are located along the stream, as well as evidence of present human utilization of the river.

An inventory of the various resources is included in the study, and serves to identify significant features which could be included in future programs. The plan aims to suggest a viable program for the initial development of the trail, capable of easy implementation and future expansion.

ACKNOWLEDGEMENTS

The author gratefully acknowledges the advice and guidance of my graduate committee, Dr. William Dwain Miller, Dr. R. Burnell Held and Dr. Howard Bruner. My thanks also to the numerous people who assisted me, especially Ms. Charlene Treasner, and Mrs. Evadene Swanson for historical information, Mrs. Barbara Pope for her art work and sketches and Ms. Sandra Joiner and Ms. Sharon Deck for their patience and help in typing this report.

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CHAPTER I

INTRODUCTION

The City of Fort Collins, Colorado, located at the base of the Rocky Mountain foothills, is a community surrounded by natural beauty. The rapid growth and development of the city and Colorado State University in the early 1960's, stimulated concern for preservation of open spaces and natural resources.

In March 1974, the Planning Division of the Department of Community Development set forth an ambitious plan for open space. Included was a green belt or trail system following two natural drainages, Spring Creek and the Cache La Poudre River. These were also linked by another trail along the foothills, thus forming a triangular belt of open space around the city. Associated with this green belt would be foot, bicycle, and horse trails as well as parkland.

The purpose of this project is to research the natural and cultural resources found along the Cache La Poudre River Trail and to develop a plan for the interpretation of significant resources.

Rivers and waterways have always been of utmost importance in the development of American communities.

They have provided early settlers with an easy means of transportation, furnished needed moisture, and recorded the flow of time. The Cache La Poudre River corridor is no exception. It has been and continues to be a major factor in the history and development of the entire area. The dry climate made the river a focal point for the early settlers. Thus, many historical sites are located here. The river is of prime importance to industry and agriculture. Evidence of this is easily seen along the river in the form of irrigation canals and water treatment works.

In addition to the cultural significance of the river, the riverbottom land contains relatively unspoiled natural areas of beauty and interest. At these points nature and ecological principles can be observed and appreciated.

Within these easily accessible areas visitors may take pleasure in observing natural phenomena and gain insight into the formation and development of the region. The trail along the Poudre, therefore, will offer many opportunities for visitors to see and experience cultural and natural elements which have contributed to the growth and development of Fort Collins and surrounding territory.

Interpretive programs developed to further explain resources and to tell the story of the river will greatly enhance enjoyment of and interest in the trail.

Interpretation is a public service which exposes visitors to an elective education. It reveals meanings

and relationships of resources (actual objects, sites, concepts, and experiences) to visitors through the use of original objects, personal experiences, and illustrative media (26:8). Interpretation aims to stimulate active envolvement and to assist individuals in grasping the complete significance and appreciation of an event or element.

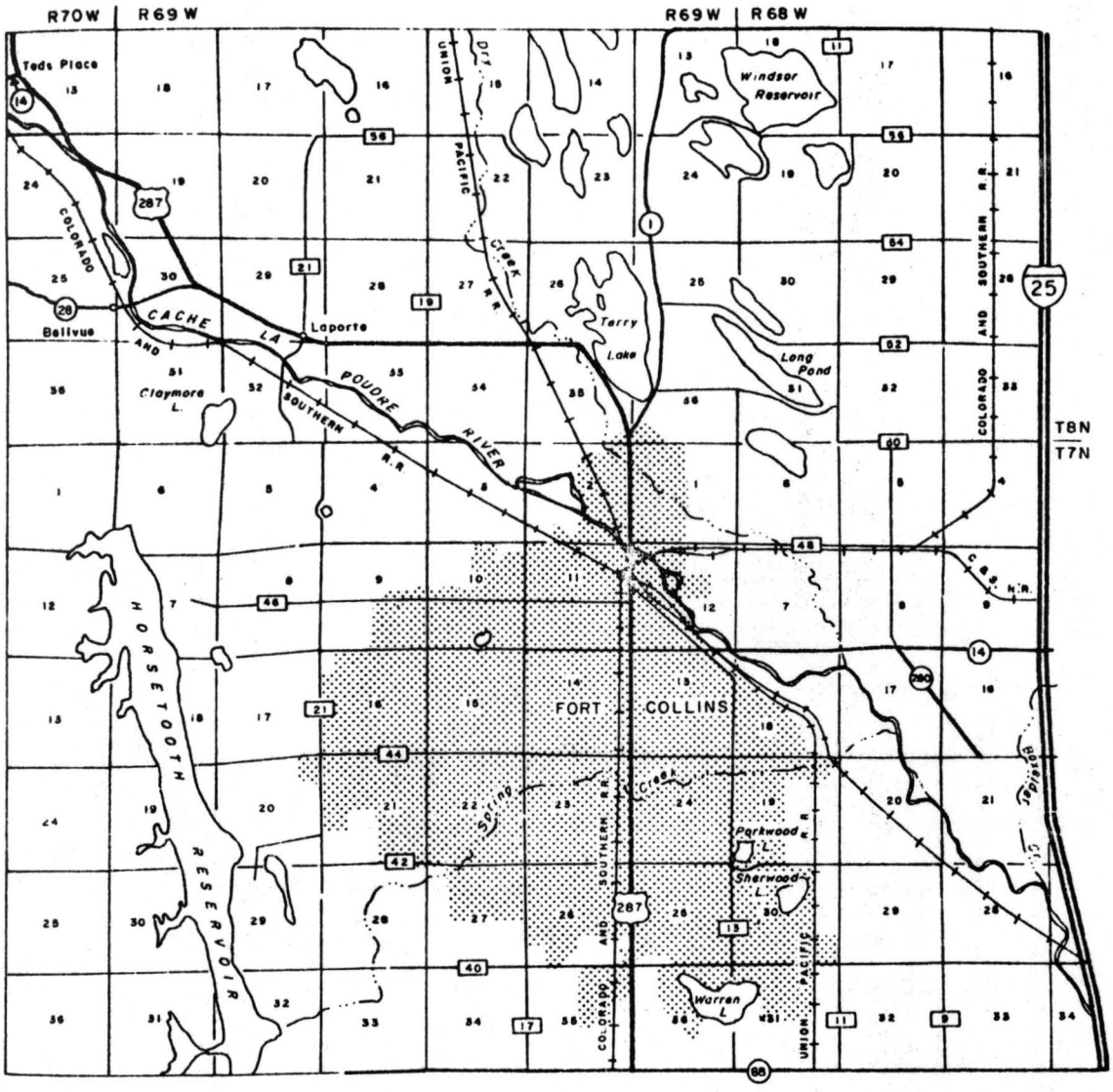
Interpretation along the Cache La Poudre River will not only increase user satisfactions by stimulating interest and by increasing knowledge but, will contribute to the creation of better citizens with a more complete understanding of their community.

The goal of this plan is to suggest guidelines for the development of such interpretive programs along the Cache La Poudre Trail.

Location

The study area is located in Northeast Colorado, in Larimer County. It follows the Cache La Poudre River from Watson Lake to the intersection of the river and I-25, just west of Tinmath, Colorado (Figure 1).

The riverbottom flood plain is primarily open space, with agricultural use being the predominate theme. However, some industry is located along the river in the City of Ft. Collins, and gravel mining is important in scattered locations.



BASE LEGEND

- Interstate Highway
- US Highway
- State Highway
- County Road
- Railroad
- Section Line
- City Area
- Town
- Perennial Stream
- Intermittent Stream
- Perennial Lake

N

SCALE IN MILES

0 1 2 3

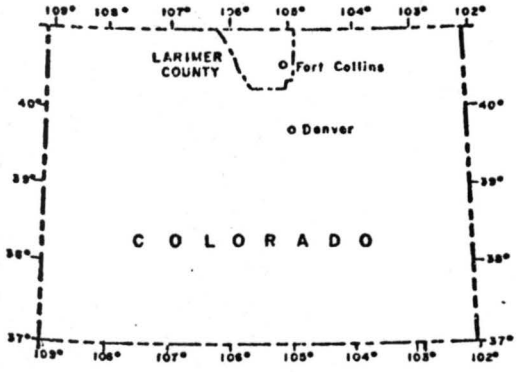


Figure 1.

CACHE LA POUDRE RIVER
OPEN SPACE PROJECT
CITY OF FORT COLLINS
LARIMER COUNTY, COLORADO

LOCATION MAP

COLORADO STATE UNIVERSITY
Department of Recreation Resources
AUGUST 1975

Land ownership is a mixture of public and private. Bill Holmes, head of land acquisition for the City of Ft. Collins has a list of 47 land owners for the area (38).

Objectives

The Open Space plan sets forth the following objectives:

1. To provide for active and passive recreational needs;
2. To preserve areas of unique beauty or historical qualities;
3. To preserve areas containing valuable natural resources;
4. To restrict urban development in areas which could produce hazards to life and property (18:12).

These objectives would be met by the development of the trails system along the river. However, going one step further and providing interpretation of significant resources, the trail would enhance the public's understanding and enjoyment of the green belt.

Objectives of this interpretive plan are:

1. To develop interpretive programs to expand understanding of the development and history of Ft. Collins and the surrounding area.
2. To develop interpretive programs to acquaint visitors with the importance of the Poudre to the community.
3. To develop interpretive programs which will help visitors understand their natural environment.
4. To develop interpretive programs which will be enjoyed by a variety of age groups.

Theme

It is necessary to identify an overall theme to provide guidance and coordination in the development of interpretive programs. The interpretive theme of the Cache La Poudre River trail will be the influence of the river on nature and man. Subthemes include area history, natural resources, and industrial development.

Resources

The trail system will actually consist of two trails, a paved hiking and bike trail about eight feet wide and a cleared trail for horses. In order to inventory the significant features along the green belt, two categories of resources have been identified--natural and cultural. Natural resources include all the aspects which exist independent of man. Cultural resources are related to man and his development of the area.

CHAPTER II

AUDIENCE ANALYSIS

Information about the potential audience or visitors to a facility would be helpful in determining what to interpret and how to present the material. Complete information about all the possible visitors to the Cache La Poudre Trail is not available. Therefore, it is necessary to make some assumptions about the population that the trail will serve.

William Dwain Miller in his study Planning Parks for Urban Growth, Ft. Collins, a Case Study, conducted an extensive survey of the recreation desires of Ft. Collins' residents. The results on needed recreation facilities indicated that green belts or open spaces ranked second, bicycle trails third, and hiking trails tenth. This was from a list of various facilities. Other results showed the most recent residents (1 to 5 years) desire more open space and trails than older residents. Vacation information indicated 78 percent of the residents have two weeks or more vacation, 18 percent have one week or less, and 4 percent have no vacation.

Of those who took a vacation, 48 percent spend no time in Ft. Collins, 22 percent spend all their time in Ft. Collins, and 30 percent spend 1/4 to 3/4 of their vacation in the city. Also, 81 percent indicated that they used the city recreation facilities more during vacation time (42:27-30).

This information reveals something about the recreation desires of Ft. Collins' residents. The interest in trails and open space is evident.

It is necessary to make further suppositions about potential visitors. Recreationists will probably be varied in type and in their reason for visiting. Some probable users of the Cache La Poudre Trail follow:

School Groups. The trail will offer an excellent chance for educating school children about local history, wildlife, vegetation, irrigation, industrial development, and many other aspects of the relation of the river to the area. All ages of students should enjoy using the trail to see examples of subjects taught in the class rooms.

Summer programs could be developed by schools, service organizations, or local recreation departments, on the river aimed at various ability levels taught by amateurs or professionals. A wide range of subjects would be adaptable to such an area.

In developing interpretive programs care should be taken to avoid over explanation of subjects. Students should be stimulated to discover information on their own.

Local Citizens. Local citizens will also enjoy the trail. Old and young will enjoy hiking, biking and riding horses along the green belt. Some may come with special interest--bird watching, history buffs, and edible plant foragers. The greatest majority though will come simply to relax and enjoy the out of doors, taking short and long hikes, plus leisurely bike or horse outings. When the entire green belt trail system is complete some residents may use it as a leisure route to shopping areas or friends.

Interpretive programs should be planned to capture the interest of casual visitors and intrigue them to develop a greater understanding of the river and its resources.

Tourist--Colorado and Out-of-State. The tourist may enjoy Ft. Collins' trail system. Ft. Collins is not considered a vacation spot, although many visitors pass through the area. Estes Park, Rocky Mountain National Park, the upper Cache La Poudre River, and the Rocky Mountain area in general attract many tourists who pass through or stop briefly in Ft. Collins. The recent best seller Centennial, written about this area, may increase the number of tourist who stop is this area.

The green belt trail would be a natural attraction for anyone interested in knowing more about the area or wishing to get a better understanding of the settling of the west. Some Colorado visitors may come specifically to learn more about their state and its resources.

Recreationists using the trail will come from a variety of locations, different economic situations, varying educational backgrounds, and with very diverse purposes for visiting. Therefore, programs should be aimed at variety of interest and educations. Interpretation should include something for everyone.

CHAPTER III

INVENTORY

Natural Resources

Climate

Fort Collins, because of its location along the Northern Front Range, has a very pleasant climate with low precipitation, low humidity, and an abundance of sunshine. Air generally moves across the mountains from the west, cooling as the altitude rises and losing most of its moisture on the Western Slope before reaching this area. Thus, the total average annual precipitation for Ft. Collins is only 14.77 inches. The relative humidity averages 30 percent in summer and 43 percent in winter. There are generally only 36 days per year with rain in excess of .01 inches, and 329 days without any precipitation.

Temperatures are also mild. The average mean temperature is 47 degrees F. or 8 degrees C. The mean average high temperature is 62 degrees F. or 17 degrees C., and the mean average low temperature is 33 degrees F. or 0.5 degrees C. (42:190-192).

The lack of rainy days and the pleasant temperatures are major reasons for the great interest of residents in outdoor activities. These factors have also made Colorado

a favorite place for tourists. Additionally, the four distinct seasons offer a pleasant variety for outdoor recreational pursuits. Colorful aspens and good hunting in the fall, skiing and other snow sports in winter, beautiful flowers in spring, and camping and hiking in summer, plus fishing all year round make Colorado a well liked vacation spot.

The mild Ft. Collins' climate will allow year round use of the Cache La Poudre Trail. Recreationists may enjoy each season's changing animal and plant life. For more detailed weather data see pages 99 and 100 in the appendix.

Geology

Fort Collins' location, on the Colorado Piedmont at the base of the foothills of the Rocky Mountains, is an excellent place to study geologic events of the past. The geologic history of the entire area will not be covered here, but only those features within the study area that would lend themselves to interpretation along the trail.

Gravel Deposits The primary geologic feature of the study area is its gravel deposits (40). Gravel is an extremely important resource of the Poudre. It is an essential material in the construction of roads and buildings. Gravel, of good quality for construction, can be found along the Poudre in a corridor averaging one-half mile on either side of the river bed and extending to depths of 15 feet.

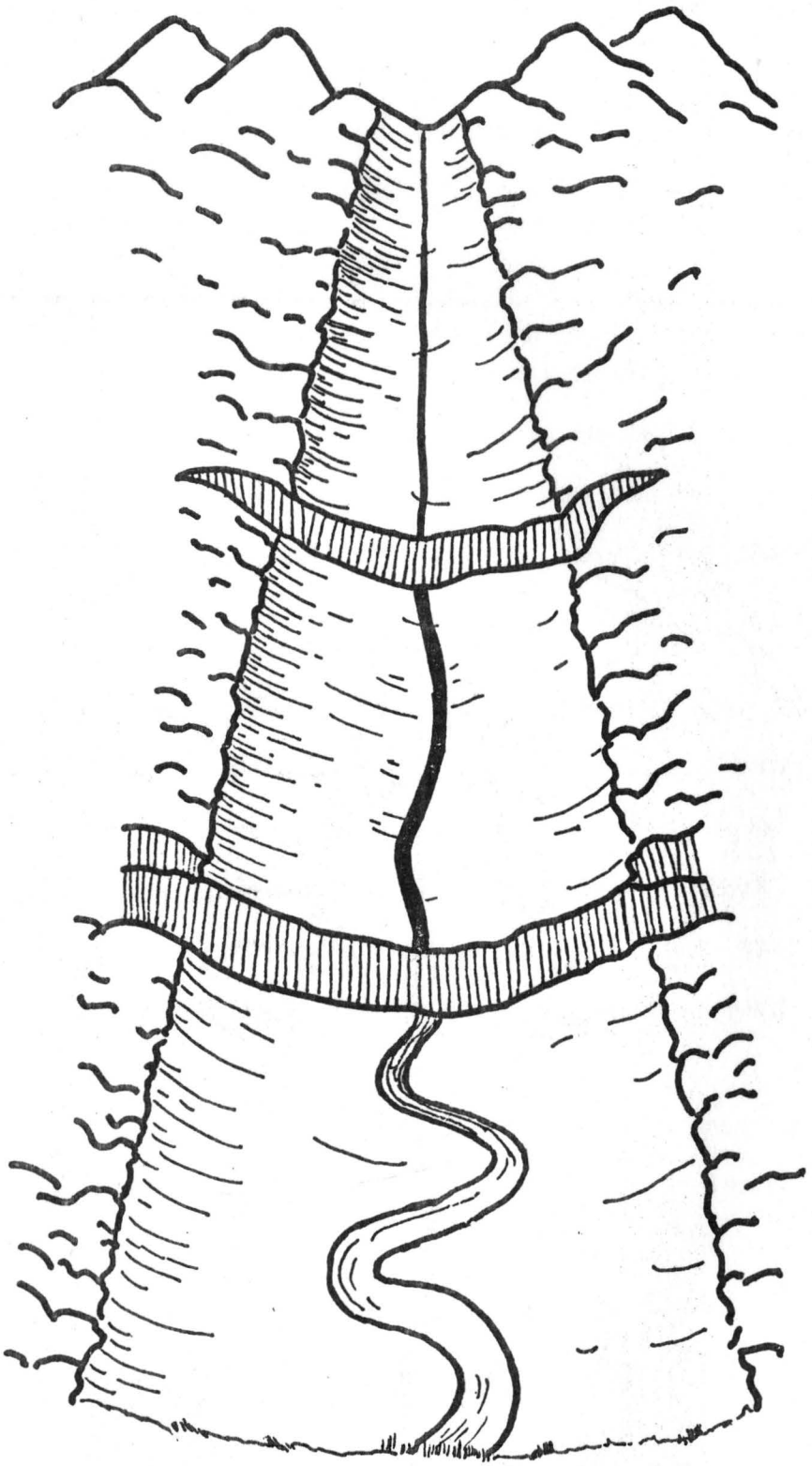


Figure 2. Rivers flow through a series of stages. They flow swiftly in V-shaped valleys at their headwaters, and then meander slowly across U-shaped valleys at maturity (12:84).

Although gravel mining may be unsightly along a green belt, the gravel is a necessary resource. In areas where the gravel supply has been covered or exhausted, rock must be quarried from the mountains and then crushed to make gravel. This process cost about twice as much as the mining methods used along the Poudre.

Presently, the City of Ft. Collins, Larimer County, Colorado State University, and Flatiron Gravel Company are coordinating their efforts to establish procedures whereby mined land may be reclaimed. Mined areas can be a valuable addition to the open space corridor by providing parkland, and ponds for recreation and wildlife habitat.

Meander of the River. The Poudre through the study area is typical of a mature stream, meandering slowly across the plains (see Figure 2, page 13). The erosion of the banks is easily seen where the current of the river rounding bends cuts into the outside bank of the curve. It erodes away the bank in large chunks and fells trees by washing soil from around the roots.

As the river cuts into the curve, the current on the inside of the bend is slower. As it slows, it deposits some of the suspended materials which it carries. This builds gravel or sand bars on the inside curve (33:204-205).

Oxbows are also formed. The meandering river makes a loop, and then the current of the river cuts through the ends of the loop forming a ring pattern in the river. Eventually, the ring fills with sediment and a little crescent--

shaped lake is left. These oxbows may be reclaimed by the river as it changes its course again, or they may fill in completely with sand and soil (see Figure 3, page 16).

Bellvue Dome. The Bellvue Dome is an unusual feature which clearly shows the effect of geologic forces. The earth's crust in folding, developed a wrinkle both east and west and north and south. A dome was formed as a result. Later, mountain erosion caused sediments to be deposited on top of the dome. Then the Poudre River established its course across the sediment on top of the dome. Later the surface began a period of uplifts. While the land slowly rose, the river continued cutting down through the sediment. When the river reached the dome it continued to cut downward through the solid rock as the land rose. As seen today, the Bellvue Dome is the result of this uplift of the land and cutting of the river (42:209-211).

Watson Lake, located on the river between the remaining sides of the dome, is a product of man, not geologic activity.

Rocky Mountains and Hogbacks. The Rocky Mountains just west of Fort Collins are the longest chain of mountains on the planet, stretching from Alaska to Mexico. Their growth began 60 million years ago.

Slow uplifts raised towering domes of granite and schist. In some places, the dome was fractured and one block slipped over another. These fractures also formed outlets permitting magma to pour forth from the interior of

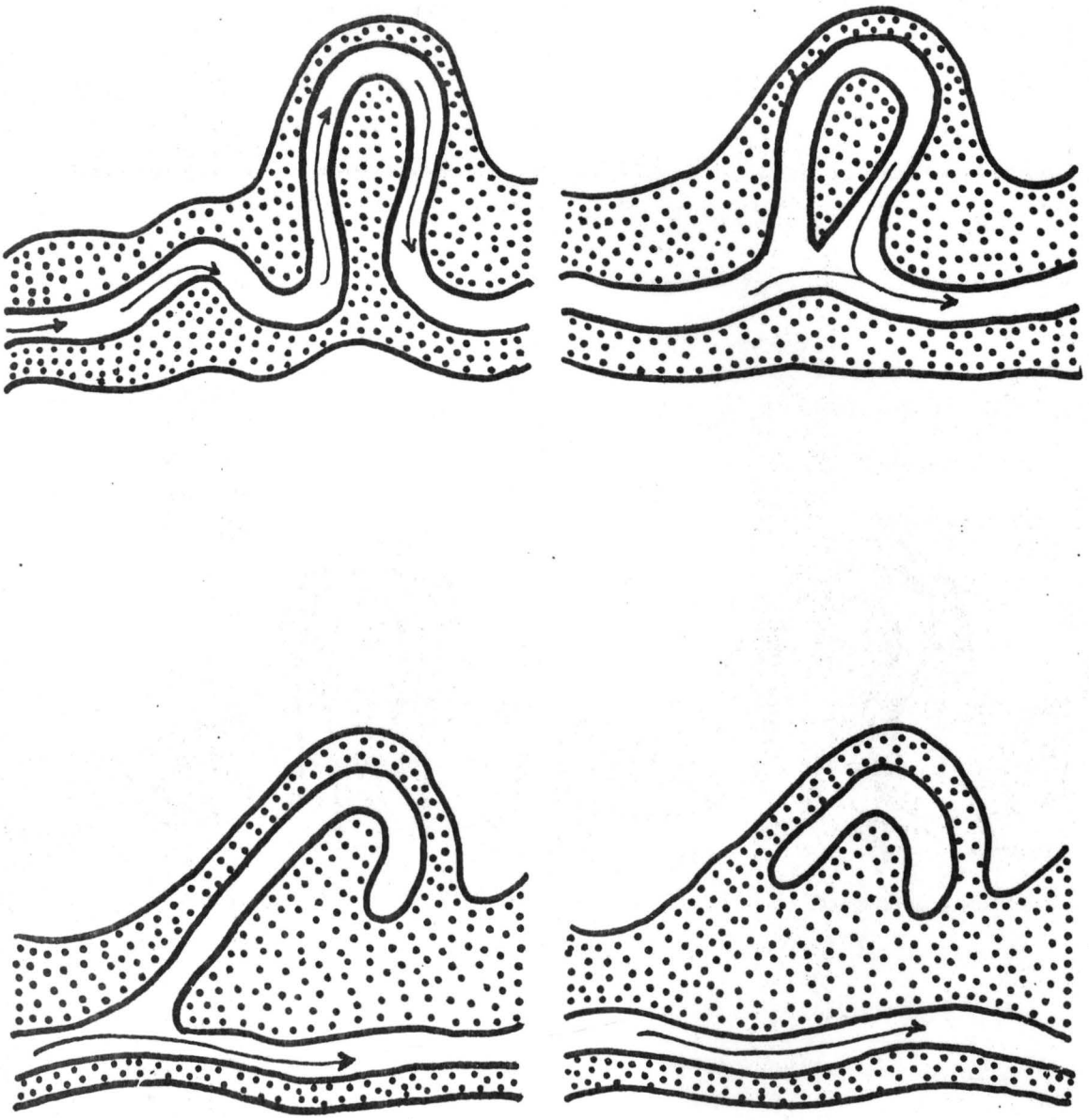


Figure 3. Oxbow lakes develop as a meandering river cuts through a horseshoe bend, taking a more direct course (12:79).

the earth. As the central core rose it caused the sedimentary layers thousands of feet thick to buckle, forming the hogbacks (see Figure 4, page 18) (12:134, 135). The hogbacks west of Ft. Collins are represented by the Dakota Ridge.

Topography

The Cache La Poudre River, through this study area from Watson Lake to I-25, gently drops from approximately 5,120 feet to 4,880 feet above sea level. These figures, however, tell little about the shape of the country side.

Fort Collins is located on the Piedmont, just below the Rocky Mountains. Figure 5 page 19, shows the slope of the United States from the Rockies to the Missouri River. The piedmont and high plains were formed by eroded sediments washed down from the Rockies. The larger sediment deposits and subsequently higher altitudes in the Piedmont region is one factor in the cool pleasant climate of Ft. Collins and the difference in vegetation in Ft. Collins and in the lowlands.

The views of the mountains offered to hikers along the river are spectacular. Much of the city and its development cannot be seen from the river valley. This makes the green belt even more attractive to hikers, bikers, and horsemen, who can enjoy the beauty of the great outdoors and yet remain very close to home.

Significant topographic features which can be seen along the trail are the Bellvue Dome, the Dakota Ridge, and Bingham Hill.

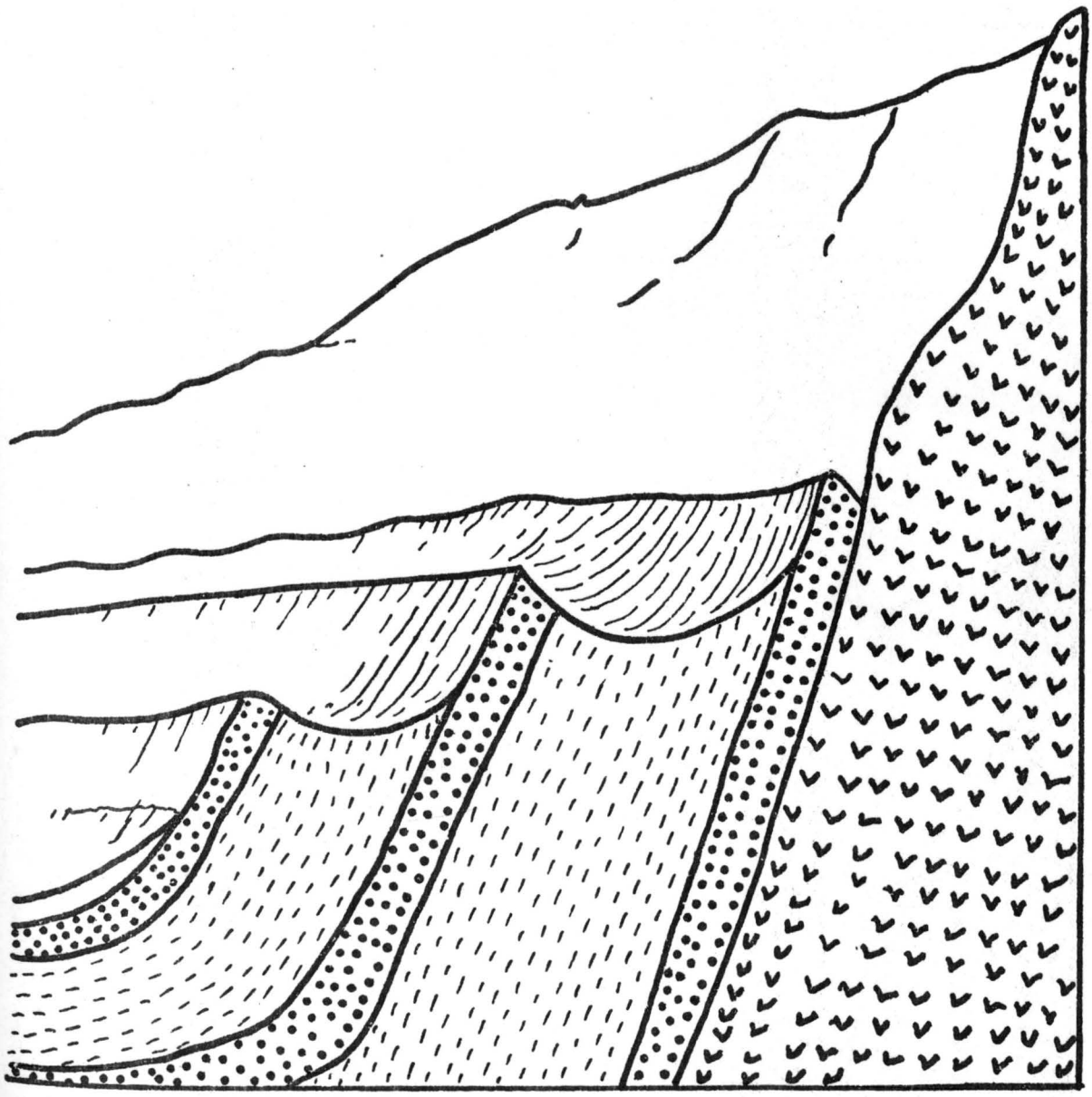


Figure 4. The hogbacks of the Rocky Mountains are the result of the resistant layers of rock being pushed up around the central core of the mountains (12:135).

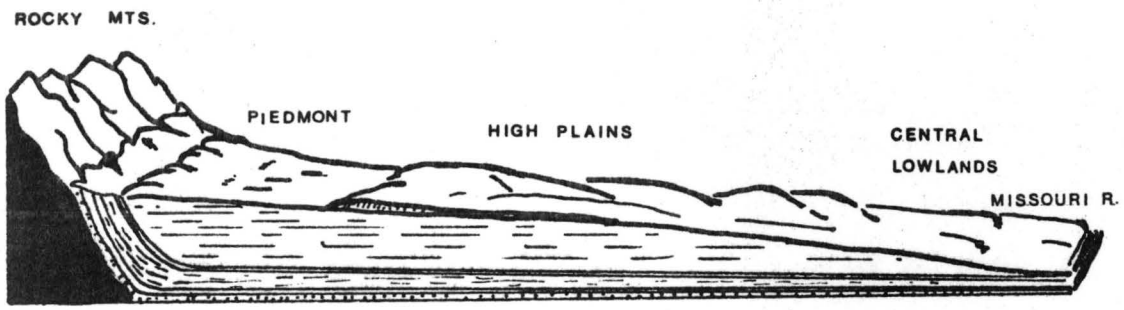


Figure 5. A cross section between the Rockies and the Missouri River shows the gentle rise from east to west.

Hydrology

Water is a critically important resource in the arid climate of Ft. Collins. Its significance to man and agriculture will be more completely explained under the topic water development. As a natural resource, the river is the prime factor in the lush vegetation along the stream and the wildlife which lives there. Its history of and present threat of flooding are factors which must be taken into account.

Floods. Flash floods were a more common occurence in the 1800's and early 1900's than today. Ft. Collins has not had a large flood on the Poudre River in the memory of most present residents of the city. Some of the larger floods are listed in the following table.

Flood Peak Discharges and Dates
Cache La Poudre River (29:13)

Year	Date	Peak Discharge (cfs)
1891	9 June	21,000
1901	21 May	12,000
1904	20 May	21,000 (greater than)
1930	31 May	10,200

Additionally, it is believed that the 1864 flood that caused the destruction of Camp Collins was approximately 21,000 cubic feet per second. In reviewing the above table, it should be kept in mind that 5,000 cfs begins to exceed the channel capacity of the Cache La Poudre River through Ft. Collins. Thus, the above floods could have quite a

destructive nature on today's development near the stream, if they were to occur again.

The flows in the Cache La Poudre fluctuate quite drastically throughout the year. The lowest usually occurs during late fall and winter months. Annual peak flows on the river normally occur when heavy rains are concurrent with snowmelt runoff.

The high mountain topography of the Poudre River watershed above Ft. Collins adds to any flood danger. The narrow V-shape of the Poudre Canyon and steep gradient of the stream causes the water from high mountain snowmelt and rains to descend quickly to the flood plains below.

There have been some dams built within the Cache La Poudre watershed which were not built specifically for flood control measures. These, however, may have contributed to a reduction in the number of floods in recent times. One, Halligan Reservoir, owned by the North Poudre Irrigation Company, was built in 1910 for irrigation storage. Another is the Seaman Reservoir built in 1947 by the city of Greeley for municipal water supply. Both of these reservoirs are located on the North Fork of the Cache La Poudre River.

The trail development along the river will be in the flood plain. This is good use for the land which is unsafe for many purposes. Due to the danger of flooding, however, recreational development should be constructed to withstand high waters.

Soil

Soil is a limited resource and requires long expanses of time for its replacement. It is a complex living body which can possess many characteristics often misunderstood by the public.

The soil along the Cache La Poudre has been washed down from the mountains and deposited along the stream. Soils which are formed in one place and then moved by streams to another location are called alluvial. Thus, the soils along the Poudre are alluvial soils, primarily composed of sand and gravel. Scientists identify soils according to their characteristics and then assign a distinctive name to them. The name for the predominate type of soil along the Poudre is Cass Series. The soil has a poor moisture holding capacity with fair air and root penetration. The land is good for plant growth which can withstand fluctuating moisture levels. However, because of its location in the floor plain, it is considered poor for building or agricultural uses (42:219-220).

Vegetation

The vegetation of the Cache La Poudre is more similar to plant life in the Eastern United States then the plains that it crosses. The dry soils of the plains have their own plants, mostly grasses, which have adapted to the physical conditions of high altitude and lack of precipitation.

The Poudre and other streams, however, provide the necessary moisture to support trees and broad leaf vegetation. Thus, the streams crossing the plains form natural ribbons of pleasant shade. Early settlers staked their claims close to the trees, not only for shade but also for protection from the wind and dust. These corridors were the natural gathering places for socials and picnics.

Trees are the outstanding vegetation. The riverbottom is the only place where trees grow naturally. Cottonwoods are the predominate tree species with willow, boxelder, ash, and alder in lesser amounts. The shade trees found in the yards of Ft. Collins' residents can only exist in the arid climate because they are watered by man. A more detailed discussion of the trees native to the Ft. Collins' area can be found on page 102 of the appendix.

Wildlife

A large variety of animals make their home along the Cache La Poudre River. A general undisturbed condition of the land provides the cover and food necessary to attract wildlife. Paul Gertler's study of the Poudre identified the wildlife and is an excellent source of wildlife information.

In these relatively undisturbed areas along the Poudre the ecological balance of nature may be studied and examined in detail. The observant visitor will become aware of the interdependence of plant and animal life as well

as the delicate balance that must exist if such life is to prevail.

In other areas of the Poudre, man has allowed his farm animals to graze along the river, or he has extended his crop land to the river bank. In these areas the wildlife is not as abundant because food and shelter have been taken away.

The proximity of these diverse areas can provide information that will give insight to the original uncorrupted characteristics of the land and an awareness of the disturbing influence of man and agricultural pursuits.

The distinct characteristics of various wildlife and the part played by each in the ecological balance would be of interest to many traveling along the river trail. Observing these in their natural setting could serve to motivate and stimulate scientific study and appreciation. A more detailed listing of wildlife that populates the areas along the trail is in the appendix pages 105 through 113

Cultural Resources

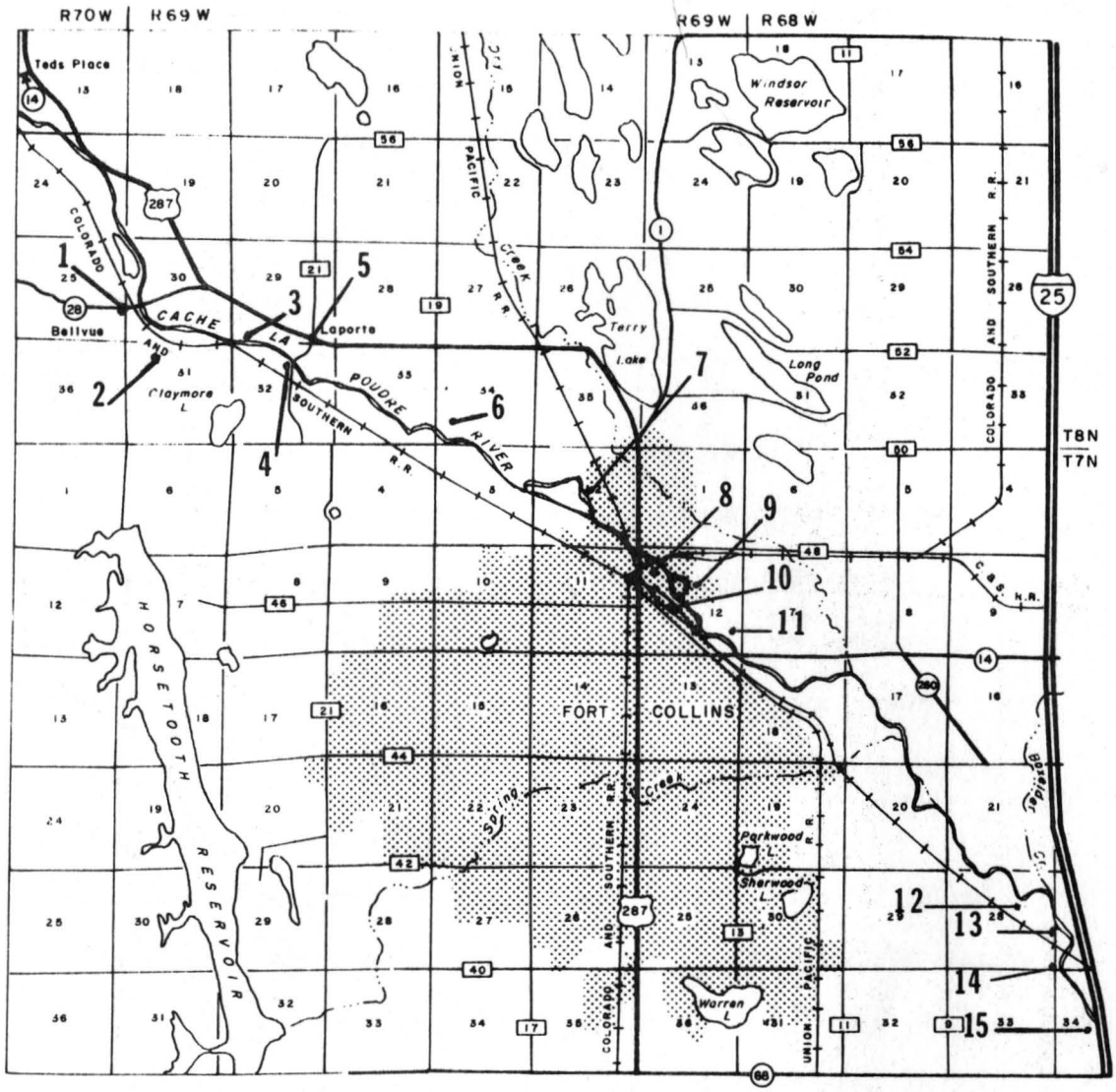
History

Early settlement of Larimer County occurred primarily in close proximity to the Cache La Poudre. The settlers made their home close to the river not only for a water supply, but also for the shade and protection of the trees. Figure 6 shows the location of interesting historical areas which are close to the Poudre. A description of these sites follows.

HISTORICAL SITES LEGEND

FOR FIGURE 6

1. Bellvue
2. Site of Cache
3. Antoine Janis's Claim and Site of Camp Collins
4. Overland Trail Bridge
5. Laporte
6. Mandeville Farm Site
7. Joe Mason's Farm Site
8. Fort Collins' Military Post Site
9. German Russian Community
10. Flour Mill and Henry C. Peterson's Workshop
11. Coy Farm Site
12. Sherwood Farm Site
13. Arapahoe Council Tree Site
14. Strauss Cabin
15. Buss Cabin



BASE LEGEND

- Interstate Highway
- US Highway
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- County Road
- Railroad
- Section Line
- City Area
- Town
- Perennial Stream
- Intermittent Stream
- Perennial Lake

N

SCALE IN MILES

0 1 2 3

Figure 6.

CACHE LA POUDRE RIVER
OPEN SPACE PROJECT

CITY OF FORT COLLINS
LARIMER COUNTY, COLORADO

Historical Sites

COLORADO STATE UNIVERSITY
Department of Recreation Resources
AUGUST 1975

Bellvue. The town of Bellvue was laid out and platted by B. F. Flowers in 1882. Flowers came west in 1872 in search of a location for a colony. He decided upon Pleasant Valley and returned to Kansas to bring others to the area. Mr. Flowers was a farmer and a merchant. He built the stone building adjacent to Rist Canyon Road for his general store (30:421).

Cache La Poudre--Naming. In November of 1863, a large party of trappers employed by the American Fur Company were on their way from St. Louis to Green River, Wyoming. They stopped and camped along the stream. Antoine Janis, the first white settler to this area, was with the party. At that time he was only a boy of twelve. Antoine's father was captain of the caravan.

A severe snow storm set in for several days. When the storm stopped, the trappers needed to lighten their load. Several rods south of the camp, all that could be stored was put in a large deep pit including a great deal of gun powder. The pit was then disguised by burning brush over it, to deceive the Indians. From this act the river was named Cache La Poudre--French for "where the powder was hidden". There are other stories, but this is believed to be the true account (17:1,2).

Antoine Janis' Claim. Antoine Janis is considered the first white settler in this area. He staked his claim in 1844, a short distance west of Laporte. His claim was the

first land patent recorded in Larimer County, issued May 1, 1867 (30:56).

Antoine was a trapper, a scout, a guide and interpreter for the military post (30:217). He lived on his claim until 1878, when he moved to the Pine Ridge Agency to join his wife's tribe of Indians. He was highly regarded by all the early settlers (30:44).

The story is told that Antoine Janis planted a willow tree on his land near his cabin as a symbol of friendship for the Indians (31). He related some of his dealings with Indians to Ansel Watrous:

> The gold fever broke out in 1858. Soon after locating my claim, I moved from Fort Larimie and settled on it. One hundred and fifty lodges of Arapahoe moved there with me at the same time. They asked me if I wanted to settle there. I told them I did. Bold Wolf, the chief, then called a council of braves, who finally gave us permission to locate, and donated to us all the lands from the foot of the mountains to the mouth of Boxelder Creek (30:44)

Camp Collins. In the fall of 1863, Company B of the First Colorado Volunteer Cavalry was sent to Laporte to patrol the Overland stage route from Indians. The soldiers established camp on Antoine Janis's claim near the river a few miles upstream from Laporte.

The next year Companies "B" and "F" of the Ohio Volunteer Cavalry came to take over the camp. They gave the camp the name Camp Collins to honor their Commanding Officer at Ft. Larimie, Lieutenant Colonel William O. Collins.

On June 9, 1864, a destructive flood washed away most of the camp. Tents, cabins, and most of the soldiers' personal property were carried away; fortunately, no lives were lost. Col. Collins sent word to find a new site for the camp out of the flood path. Their camp was then moved downstream to Ft. Collins where the camp became a fort (45).

Overland Stage and River Crossing. The first bridge crossing the Cache La Poudre was a toll bridge. It was located very close to the place where the present bridge on Overland Trail now stands. The first bridge was washed away in the 1864 flood. A ferry was then constructed and operated by Mr. John B. Provost.

The stage station was north of the bridge on the trail. It was called the Holliday Stage Station. The building was marked in 1916 by the Daughters of the American Revolution. The building burned in 1928, but the marker was rescued. The marker can now be seen on a slab of native stone on the highway just south of the original site of the station (31).

Laporte. Laporte has a long and interesting history. The first white men in the area had a settlement there about 1828. These were trappers with Indian wives, who migrated from place to place where the hunting was good (30:165).

In 1860, the Colona Town Company was organized to build a city on the banks of the river at the entrance to the mountains. The town grew rapidly. In 1861, it was

named the county seat for Larimer County, and it had aspirations of becoming the capital of the Territory.

In 1862, the name was changed to Laporte, meaning "the gate." Also that year, it was made headquarters for the Mountain Division of the Overland Stage Company (30:165).

Laporte, at that time, was considered the most important trading post in Colorado, north of Denver. A quote from an old newspaper article said, "Laporte in 1868 was a lusty, roistering settlement with 4 or 5 saloons, a brewery, wagon trains passing thru, a stage station on the trail, the first county courthouse, soldiers, Indians, trappers and "squaw men". (19)

In Laporte, along the Overland Trail not far from the river, are three other old buildings. The Baxter Store or Stover Store, the Stearly House and a log cabin built by Sam Deon.

The store was built in 1864 by Louis Philippe Orleans (6). It was a general store and the post office. It has had several owners but has been some type of commercial business for most of its years.

Next door to the store is the Stearly House, built in 1875. It is now an antique shop. It was built by Mr. George Stearly as a home for his bride to be, Barbara Bingham. Unfortunately, she died suddenly of nose bleed just before they were to marry. This was the first wood frame house in Laporte.

Just across the street is an old log cabin built in 1858 by Sam Deon. It was originally a saloon and at one

time had a billiard room. Then it became a store and finally a residence. The present owners use it as a guest house (34).

Jack Slade. One of the most notorious characters of this area in the 1860's was Joseph "Jack" Slade. He was the division superintendent of the Virginia Dale Stage Station. Jack had a reputation as a badman and his life was full of wild deeds. Most of his mean exploits occurred while he was drinking excessively.

Once, after warning the station agent and storekeeper at Laporte not to sell liquor to the stage drivers, he came to teach the agent a lesson. The agent had ignored Jack's warning. So Jack came to the station at Laporte and tied up the agent. Then he proceeded to terrorize him, shooting up his store and pouring all the molasses, vinegar, flour, and sugar on the floor. Later, Jack returned and paid for the damages but once again warned the agent not to ignore his wishes.

Later, Slade was dismissed by the stage company. His life finally caught up with him and he died at the end of a vigilante's rope in Montana in 1864 (17: 7,8).

Mandeville Farm. Not far from the river just off Taft Hill Road is the Mandeville Farm. John Mandeville was a Lieutenant in the New York Cavalry and came to Ft. Collins to put down Indian uprisings. He liked Ft. Collins and filed for land after the calvary was discharged. He brought his wife from New York.

John was a carpenter and they moved to Cheyenne for a while. They returned to Ft. Collins in 1869. He then bought the farm on Taft Hill Road. The house he built is still standing with a stone milk celler nearby (27).

Joe Mason's Farm. Joe Mason was a man of many talents. Watrous describes him "as one of the most enterprising and public spirited citizens the country ever had (29:320). Mason is considered responsible for influencing the soldiers to relocate Camp Collins at the present Ft. Collins' site, and later to move the county seat from Laporte to Ft. Collins.

Mason served as county commissioner, sheriff, and for many years as postmaster. He was a business man, running the post general store, at one time owning the Lindell Flour Mill,and engaging in other business ventures throughout his life.

Fort Collins. After the flooding of Camp Collins at the Laporte site, in 1864, a new location was sought downstream. Joseph Mason, a homesteader, convinced Lt. James Hanna that the camp should be situated at the present site which was next to Mason's land. The land was described as being high ground with good drainage and a good view of the surrounding area.

Col. Collins came to visit the site from Ft. Larimie. He gave orders to construct a permanent post and made a rough drawing showing the location and type of buildings to be constructed. The post was then called Fort Collins

because the Army expected it to become an important fort and to show that this was different from the old camp. President Lincoln designated it a military reservation on November 14, 1864.

The fort never became very important or large and probably never had more than two hundred troops working from it. The fort served its purpose well, guarding the stage route. After the Civil War ended the Indian problems diminished in Colorado. General William T. Sherman visited the post in September 1866. He wrote General Grant and recommended that the post be disbanded in March 1867.

Many of the buildings were dismantled and used for buildings in the community that was growing around the fort. The last building disappeared in 1886.

In 1872, the military post was made available to homesteaders. By 1873, the citizens had organized a town government.

Life at the Military Post. Life at Fort Collins was fairly routine; the daily schedule was:

Reveille, at sunrise.
Stable Call, immediately after.
Breakfast Call, at 6:30 o'clock a.m.
Sick Call, at 7 o'clock a.m.
Guard Mounting, at 8 o'clock a.m.
Fatigue Call, immediately after.
Water Call, at 9 o'clock a.m.
Fatigue Recall, at 11:30 o'clock a.m.
Dinner Call, at 12--noon
Orderly Call, at 1 o'clock p.m.
Fatigue Call, immediately after.
Water Call, at 3 o'clock p.m.
Fatigue Recall, at 4 o'clock p.m.
Stable Call, at 5:30 o'clock p.m.
Retreat, at sunset.
Tattoo, at 9:15 o'clock p.m.
Taps, at 9:15 o'clock p.m. (30:224)

The soldiers' main duties were escorting stage coaches and U.S. Paymasters, arresting deserters, wood cutting, hauling hay, and camp or guard duty.

Desertions were very frequent. The soldiers, penned up in military posts out on the frontier, were surrounded by danger. They were hundreds of miles from home and loved ones and subject to strict military life without the privileges to which they were accustomed. Under these circumstances it is easy to understand why many tried to get out of the service.

Apparently many tried to liberate themselves in other ways. The commander of the post ordered:

> In consequence of soldiers from this post returning from Laporte and that vicinity intoxicated due notice is hereby given to all vendors of liquor in the vicinity that they are prohibited from selling liquor of any kind, to any soldier or soldiers or giving in trade to them, either personally or through any citizen. For violation of this order, the party or parties so offending will without distinction of person be arrested and their stock confiscated (30:220).

Probably the most exciting or important event at the fort was in February 1867. The overland stage line into Denver had been closed by the Indians. Denver was cut off from communications with the East, trains were captured and robbed. The entire area was threatened by famine. Martial law was procalimed and Boulder, Larimer, and Weld counties were required to raise one company of 60 men to open the stage lines. Captain Evans at Fort Collins gave this address to the citizens of Fort Collins.

> Denizens of the wilderness! It becomes my duty as a United States Officer to address you. Do you see that flag? That flag is the emblem of my native country! And under the stars and stripes of that old banner, I proclaim martial law in your midst; and it also becomes my duty to inform you, as commander of this region, that in the future I will hold you firmly, as I would a wine glass, in the follow of my hand.
>
> War is now breaking out in all directions, and the various Indian tribes who inhabit these Western territories have shown marked degrees of rebelliousness by which the peace and safety of my country is greatly threatened. At this hour of my speaking part of my troups are doubtless under fire at Fremont Orchard. I therefore call you to arms as reserve militia to cooperate with my warriors in supressing the ruthless invaders, and any man who refuses to obey my commands, I will make wolf's bait of his carcass, by God, sir (30:223)

The troops were raised and the soldiers were absent about two months.

Andersonville and Buckingham. Andersonville and Buckingham were first settled in the early 1900's by German-Russians and then later by Spanish Americans. These people were recruited to the area to work with the sugar beets, when the Great Western Sugar Company operated its factory on Vine Drive (44).

Mills. "Auntie" Stone, the first white woman resident in Ft. Collins, was truly a remarkable pioneer woman. She conducted a hotel; cooked for the army officers; helped organize the Woman's Christian Temperance Union; and helped erect a flour mill. She accomplished all these things after coming to Ft. Collins at the age of 63 (30:291-293).

Mrs. Stone and H.C. Peterson, realizing the need for flour, decided to build a flour mill. The mill they

built stood where Ranch Way Feeds is today. Their original building was destroyed by fire in 1886.

The mill was run by a water wheel. A one and one-half mile mill race, a canal which conducted water in a more direct course, was constructed to turn the wheel (3).

The mill was burned twice, but always was rebuilt. It was remodeled and changed hands several times. In 1952 the mill became Ranch Way and began to manufacture feeds. Flour from the mill was sold under several names: Defiance, Jack Frost, Snow Drift, Queen of the West, Trader, Snow Flake, and Pride of Colorado (28).

Henry Clay Peterson's Workshop. Henry Clay Peterson was first employed as a gunsmith at the fort. His workshop is still standing not far from the mill on Lincoln Street (46).

Coy Farm . John G. Coy was a well respected farmer and early settler along the Poudre. Mr. Coy and his wife settled in 1862. Still standing on what was their farm is the old barn and a brick house (46).

Sherwood House. The Sherwood House was built by Jesse M. and Fredrick W. Sherwood, two brothers. They came to Colorado in search of gold. However, finding it was not plentiful, they built their ranch along the Cache La Poudre in 1850 (5).

The brothers raised horses as well as grains and vegetables, and were considered very successful. There

were two Overland Stage Stations on the Sherwood Ranch. One on the north side of the river served as a swing station during 1862-1863. The other was just opposite on the South side of the river. It was only used for a short time in 1863. Neither of the stations exist today (4).

In 1865 and 1866 Arapahoe Chief Friday and his band of Indians camped on the ranch. Fredrick Sherwood was appointed as an Indian Agent to supply the Indians with food and to oversee their welfare (30:399).

The original house still stands and is a private residence. However, the house does not show its age. It has been well maintained and remodeled so that it looks like a modern residence.

Arapahoe Council Tree. The Arapahoe Indians and Cheyennes held council meetings under an old cottonwood not far from the Strauss Cabin. The tree has died and the site is presently a farm field. Ansel Watrous noted that Robert Strauss saw the Indians hang a redskin enemy from the tree in 1862 (30:266). The Arapahoe were friendly neighbors to the settlers in the 1860's.

Strauss Cabin. George R. Strauss had planned to go to California but caught pneumonia and was robbed. He had seen the beauty of the Cache La Poudre Valley and returned here in 1860. There were only a few scattered settlers in the area at the time.

He had almost no money when he came, but with hard work and odd jobs he survived. Later he started farming, raising vegetables and cattle (29:277, 278). The cabin built in 1864, was his home until he died in 1904. The 1904 flood of the Cache La Poudre caused him to flee his home for higher ground. In doing so, he was caught against a fence in the rushing water and later died of exposure. He is recognized as one of the first pioneers of this area (46).

The cabin is unoccupied and run down, but the exterior has not been changed much over the years.

Buss House. George E. Buss was one of the soldiers, who after being stationed at Ft. Collins, returned to make it his home. In 1866, he brought his wife and daughter to his farm on the Poudre. His wife kept a diary of her journey to the west and her first year in Ft. Collins. In it she tells of the many hardships of pioneer life. The worst seemed to be the lack of neighbors and a church. Other problems she mentions include fear of Indians, not knowing which were friendly, the wind and dust, her husband's frequent two to three day trips to get wood in the mountains, and the lack of other conveniences. She was extremely happy when her husband finally built a privy. (46).

After his first wife's death in 1882, Mr. Buss married Hattie A. Treat. She was known throughout the area for her delicious cheese, which was so good that a creamery in Ft.

Collins asked her to market her product for a large territory. However, she continued to sell her cheese in Ft. Collins.

The original cabin is still standing where Mr. Buss had his farm (30).

Agriculture

This area of Colorado for many years was considered a part of the "Great American Desert". Agriculture was not of great importance until about 1870.

Agriculture in Larimer County began with small vegetable gardens close to the river and grazing on the upland grasses. Primarily, only what was needed for local residents and travelers was produced. In the 1860's stock raising was most important. Cattle, sheep and horses grazed upon the pasture lands. At one time Larimer county ranked second in the state in livestook raising (30:53).

The influx of gold seekers, though, caused a tremendous demand for food and prices became exorbitant. The settlers experimented with irrigation and found the land to be fertile. In 1867, wheat was successfully introduced. Agriculture then became a leading industry. Lindell Flour Mill was built in 1867 in Ft. Collins. This stimulated the wheat market. Wheat was eventually raised in such quantity that the price dropped and the land became less productive. Alfalfa was then introduced and helped rebuild the soil.

Purebred sheep raising was also popular, although finding enough range created some problems. Hay being cheap, fattening sheep in feedlots gradually became more popular. This eventually led the way to cattle feeding (30:53-58).

Early settlers found many wild fruits and this encouraged residents to try fruit growing. Sour cherries became the most important fruit although many other types were grown.

In 1879, the first county fair was held to celebrate the rapid agricultural development. Fairs were continued yearly until 1926. The 1909 fair held a Lamb Day at which time approximately 9,000 people were served free barbecued lamb on Oak Street (30:145-146).

In 1888, the Agricultural College helped introduce the sugar beet. The opening of the Great Western sugar factory on Vine Drive in 1903 made this a very valuable crop.

Today, the principal agricultural industries are farming, livestock feeding and dairying. The three major crops are corn, sugar beets, and alfalfa. However, many other crops grow well and are profitable.

Public Works

The citizens of Fort Collins rely upon the Poudre River for many things but water may be the most important. The first water works plant was built in 1883 on Overland Trail just south of Laporte. The water was carried from

the upper Poudre to the plant by a canal. Today water comes from the plant in upper Poudre Canyon built in 1904 and Horsetooth Reservoir.

Four sewage treatment facilities are also located along the river. The North College Sanitation District owned the abandoned plant located on the east side of the river across from the power plant. This facility was independent of the City of Ft. Collins serving families outside the city limits. However, the plant is now closed and its customers are served by the city plants.

Sewage plant #1 for Fort Collins is located west of the river just north of Highway 14. This plant was built in 1948, with a capacity of one-half million gallons a day. It has been expanded to a capacity of four and one-half million gallons a day. The demand on it now greatly exceeds this and it is planned to enlarge the facility to a six million gallon capacity. This plant treats sewage on a secondary level with activated sludge.

The new sewage plant, located at Drake Road, was built in 1966. This plant is presently being enlarged to process 18 million gallons per day. It also treats sewage to a secondary level.

Secondary treatment returns liquid to the Poudre which is acceptable to maintain a class B stream. Class B streams are capable of maintaing warm water fish.

Sewage, though not a pleasant subject, is an important problem for any city to solve. In Ft. Collins the 1974 average amount of sewage produced was 11 million gallons a day. The rapid growth of the city will continue to make sewage disposal a problem.

The organic content of sewage decomposes readily with the production of unpleasant odors. This makes the collection and removal or treatment of sewage from populated areas necessary. Another important factor is the high bacterial content of the sewage and the presence of pathogenic organisms such as those producing intestinal diseases. If the sewage is to be discharged into a stream acting as a source of water supply, these pathogenic bacteria will be a public health menace.

Perhaps the most important of the chemical components of sewage is its oxygen content. Oxygen in the water is used up in the biochemical decomposition of unstable matter in the sewage. The amount of oxygen required to stabilize the oxidizable matter present is called the biochemical oxygen demand (BOD). Discharge of water having a high BOD content into a stream will subsequently lower the dissolved oxygen content downstream. Low dissolved oxygen content is detrimental to fish and other aquatic life in the stream. Treatment of sewage removes much of the BOD and pathogenic organisms present in raw sewage.

Box Elder Sanitation District also has a treatment plant completed in early 1975 on the East side of the Poudre near Box Elder Creek. This is a small district not associated with the city of Ft. Collins. It services the area just east of the city.

The Ft. Collins Power Plant is located on the Poudre River at College Street. This plant generated electricity for the city from 1937 to 1974. The plant was closed when the city discovered it could purchase electricity cheaper than it could produce it.

The building is now empty and plans for its future are uncertain (37).

Watson Lake and Fish Rearing Unit

Watson Lake and the Fish Rearing Unit are operated by the Colorado Department of Game, Fish and Parks. The fish rearing unit is only one part of the Bellvue Watson Complex. At this unit Rainbow trout are raised from a 4" or 5" size to "catchable" or about 9".

Trout from here are then used to stock lakes and streams throughout northeastern Colorado. The majority, however, are put in lakes. Approximately 600,000 catchable fish from this rearing unit are stocked yearly.

Rainbow trout are reared because they are easy to raise in hatcheries. They will grow in size more quickly than other types of trout. These fish are grown to be caught. While at the rearing unit they are fed four times daily and are not fed before stocking.

Watson Lake just northwest of the rearing unit is open to public fishing. It is stocked every two weeks with about 350 lbs. of fish. The lake was made when the land was excavated for use in construction of Horsetooth Reservoir. The hole then filled in naturally. The fish rearing unit was not built until later years.

Water generally flows into the lake from the Poudre River; then it goes into the rearing units, nurse ponds and raceways; finally returning to the Poudre. However, in the winter and when necessary the water can be cycled from the lake to the raceways and back to the lake.

Concentrated populations of fish just like concentrations of people have waste products. The water returned to the Poudre River is somewhat polluted with fish waste, food stuff, and other waste. Colorado laws require that settling ponds be built by 1980 to settle out these wastes before returning the water to the river.

Watson Lake is open 8:00 a.m. to 8:00 p.m. daily for fishing. The rearing unit is open to visitors from 8:00 a.m. to 5:00 p.m. daily. Tours can be arranged by telephoning in advance (39).

Irrigation

The development of irrigation in Colorado began along the Cache La Poudre in the 1860's. The first crops were raised at Laporte and small ditches irrigated the lands close to the river. The Union Colony in Greeley under Nathan Meeker's leadership and Horace Greeley's

patronage developed the first large canal along the Poudre. It carried water beyond the river to prove that the plains could be cultivated. This was the Greeley No. 2 now known as the New Cache La Poudre Irrigation Company.

A multitude of ditches and canals were constructed which now traverse the valley. As more canals were built, many problems were encountered--use priority, storage and eventually lack of water.

Simply, water is first used for irrigation. When additional water is available, it may be stored in reservoirs. Canals receive water according to a priority system based upon their date of completion. Many have been enlarged and additional water has a priority based upon the date of completion of the enlargement. Water canal companies then sell water rights or stock in their company to the farmers along their canals. Water companies irrigate the lands below their canals.

The natural water of the Cache La Poudre comes from snow melt and rain in the mountains. As irrigated land proved to be fertile and agriculture profitable, the demand upon the natural water exceeded the supply.

Foreign water was then brought in from other watersheds. The Colorado Big Thompson Project is the largest importer of foreign water to the Poudre. It brings water from the Colorado River on the western slope to the eastern slope. The Cache La Poudre River, North

Poudre Ditch, Big Thompson River, Little Thompson River, St. Vrain Creek, Boulder Creek, and the South Platte River all receive water from the Project.

It took 19 years to construct all the reservoirs, power plants, and diversion facilities of the project. The idea of diverting water from the Colorado River to the eastern slope dates back to 1881 when the state engineer made preliminary surveys. The Big Thompson Project began construction in 1937 and completed the project in 1956. However, studies and background work began in the early 1930's.

The project is designed to deliver 310,000 acre feet of water to the eastern slope; of that, 149,723 acre feet are allocated to the Cache La Poudre. Water from the Big Thompson Project did not bring additional land under irrigation, but made the water supply to the existing ditches more reliable.

Irrigation is a complex subject. More information may be found in Consolidation of Irrigation Systems: Phase 1 Engineering, Legal,and Sociological Constraints and/or Facilitators by Gaylord Skogerboe, George E. Radosevich, and Evan C. Vlachos (23).

Several ditches divert water from the Poudre in the study. Table 1 identifies these ditches, their priority, amounts in cubic feet per second, dates, and taxed irrigated acres. The location of the ditches can be seen in Figure 7.

TABLE 1

IRRIGATION SYSTEMS OF THE POUDRE, BELLVUE DOME TO INTERSTATE I-25 (23)

Canal Name	Priorities	Amount	Date (1800's)	Taxed Irrigated Acres
Jackson (cap. 60 cfs)	3	11.67	6-10-61	1235
	36	14.42	10-21-70	
	67	12.13	9-15-73	
	91	12.70	7-15-79	
Little Cache La Poudre (cap. 125 cfs)	31	62.08		1156
	58	20.42		
New Mercer (cap. 105 cfs)	25	7.03	10-1-67	3652
	33	4.17	9-3-69	
	47	8.33	10-10-71	
	49	15.00	7-1-72	
	98	136.00	2-15-80	
Larimer County #2 (cap. 180 cfs)	14	3.50	5-1-65	5186
	57	175.00	4-1-73	
Arthur Ditch (cap. 110 cfs)	2	0.72	6-1-61	2350
	19	2.165	7-1-66	
	29	2.165	6-1-68	
	32	1.67	6-1-69	
	38	31.67	4-1-71	
	52	18.33	7-20-72	
	66	52.28	4-1-73	
Larimer and Weld (cap. 850 cfs)	10	3.00	6-1-64	52,239
	16	1.47	4-1-66	
	21	16.67	4-1-67	
	45	75.00	9-20-71	
	73	54.33	1-15-75	
	88	571.00	9-18-78	
Josh Ames (cap. 20 cfs)	25	17.97	10-1-67	672
Lake Canal (cap. 165 cfs)	54	158.35	3-1-62	6547

TABLE 1--Continued

Canal Name	Priorities	Amount	Date (1800's)	Taxed Irrigated Acres
Coy (cap. 32 cfs)	13	31.63	4-10-65	290
Chaffee (cap. 22 cfs)	48	22.38	3-10-72	
Boxelder (cap. 60 cfs)	15	32.50	3-1-66	1570
	23	8.33	5-25-67	
	30	11.93	7-1-68	

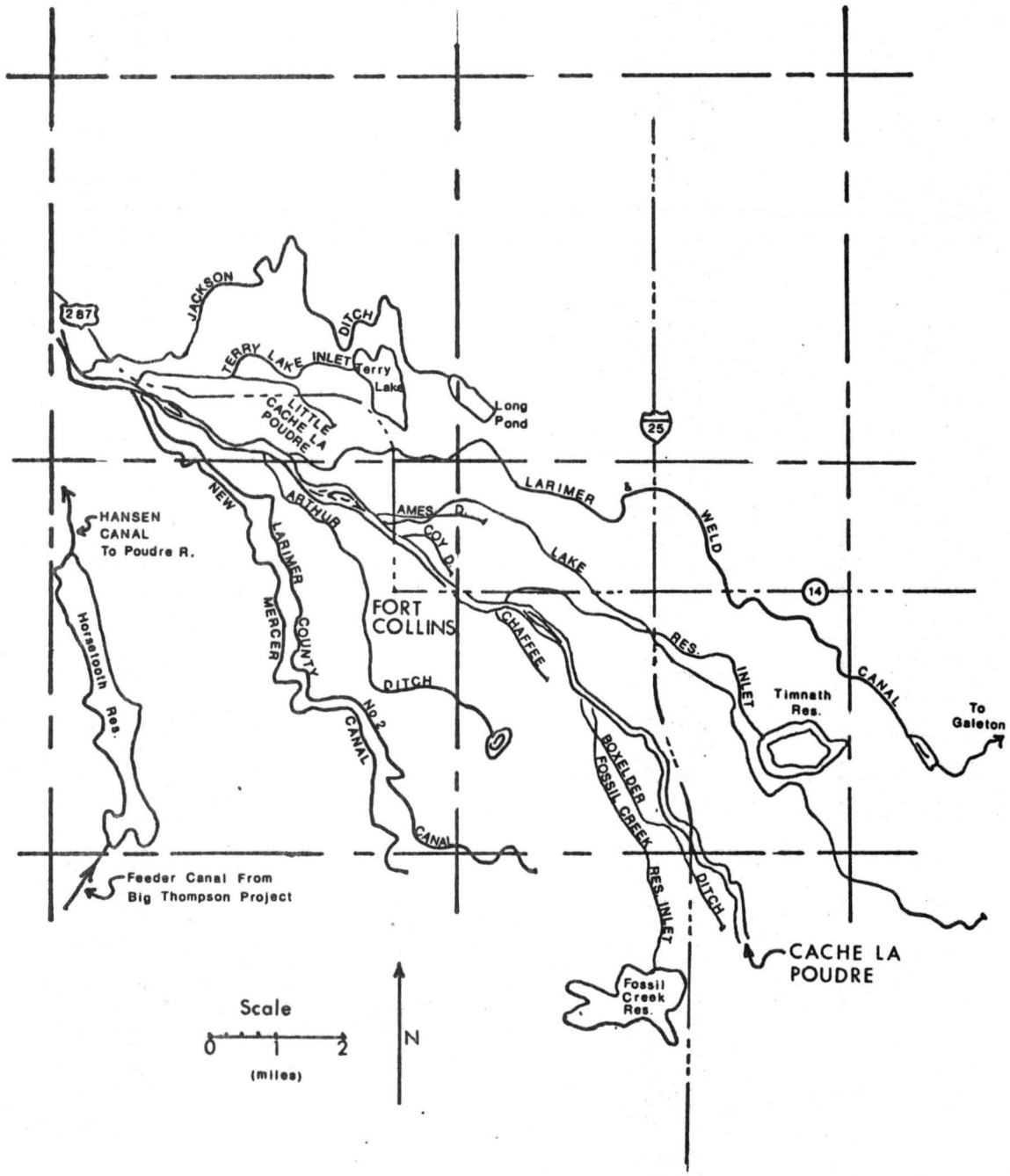


Figure 7. Here are the ditches of the study area from their diversion to their termination point.

Criteria

In determining how the resources should be interpreted it is important to establish a set of criteria. The criteria will be useful in determining significant interpretive aspects to be developed along the trail. The following criteria will be used to select significant resources for interpretation.

1. Resources which are prominent members of the landscape and likely to be noticed.
2. Resources which are unique or unusual.
3. Resources which explain the relation of the river to the community.
4. Resources which would be appreciated by visitors if they were told.
5. Resources which explain the natural and cultural development of the area.

CHAPTER IV

INTERPRETIVE PLAN

Principles of Interpretation

Interpreting Our Heritage written by Freeman Tilden is perhaps the basic guide book on interpretation. In it he identifies six principles of interpretation, these principles should be considered in preparing any interpretive program. Examples and a brief discussion of the principles follow.

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.

Man is primarily interested in the things which concern his life. He seeks to understand what affects him and why. Thus, for interpretation to capture his attention it must connect him to the subject or it must refer to his knowledge and experience. In interpreting the Cache site along the Poudre an example would be to ask visitors, "Can you find a better hiding place?", or "Where would you have hidden the powder?" or "What might you have done in a similar situation?"

2. Information, as such is not Interpretation. Interpretation is relevation based upon information. But they are entirely different things. However, all interpretation includes information.

Interpretation is not just a listing of numerous facts. It is based upon facts, but it tries to go beyond the facts and to tell the story. Dates relevant to historical buildings are more interesting if they can be combined with information about the people who used the building and their lives. Good interpretation will go beyond the factual information and try to present a total picture. Along the Cache La Poudre Trail, telling about the dates of military Fort Collins is even more interesting if visitors can learn about the daily activities or be given a feel for what it was like to live in that place at that time.

3. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical or architectural. Any art is in some degree teachable.

The interpreter must develop skills in the presentation of his subjects. He must ingeniously develop his message as a poet or advertizing man so that he can capture his audience and lead them to a discovery of his information.

As an example, the irrigation systems of the Poudre can be explained and their size and the amounts of water can be given, but developing the idea of man's great conquest of nature and his success in making the dry land highly productive is more exciting and interesting than basic facts.

4. The chief aim of Interpretation is not instruction, but provocation.

Interpretation seeks not just to inform an individual but endeavors to stimulate him to want to discover things for himself and to understand what he sees.

In interpreting the wildlife found along the trail individuals might be stimulated by indicating where to look for certain animals without actually showing them, or by asking leading questions about what they see. Information could be made available daily or weekly about birds sighted in the area plus, their habits and where and when they might be observed. Pictures and descriptions of different types of rock might be given to visitors then they could be asked to find them along the trail.

5. Interpretation should aim to present a whole rather than a part, and must address itself to the whole man rather than any phase.

Interpretive messages should develop a total feeling for the subject rather than over emphasize specific details. In explaining the effect of the climate on the plant life of the area, much detail about snow, rain and wind can be given. However, considering the difference in vegetation along the river and that in an adjacent field might better stimulate the visitor to ask, "Why?" and give a more comprehensive understanding.

6. Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program (26:).

Children and adults relate to things in a different manner. Children are less inhibited, more curious, and often more imaginative than adults. They enjoy adventure and activity, and interpreting things for them requires a special talent. An example along the trail would be

interpreting the history of the stage line at Laporte. Children could act out the story of Jack Slades visit to the stage station. Children also enjoy closing their eyes and identifying objects by feel, taste or smell.

Alternatives

The Cache La Poudre Trail holds tremendous potential for interpretive development due to the great variety of interesting resources. The trail should serve everyone in the community providing them opportunities to engage in wholesome activity. Children will delight in the wonders of nature and the chance for outdoor discovery. Adults will enjoy an opportunity for study and pursuit of hobbies. The entire family will be able to share in the revelation of the natural world and the development of their community.

The numerous techniques of interpreting the resources of any area are limited only by man's imagination. Individuals are motivated and stimulated in a variety of ways, and the more one encounters a subject the greater his understanding. The following alternatives to interpretation for the Cache La Poudre must not be considered definitive in any way, but rather a base for further contemplation and expansion of ideas.

Guided Field Trips. Personal communication is the best form of interpretation for any topic. Guided hikes lead by an interpreter, allow recreationist to ask questions and the interpreter can adjust his message to the visitor's experience and knowledge.

Regularly scheduled trips with various topics as their primary subject could be led along the Cache La Poudre during the summer or year round. Interpreters could be teachers, college students, or local citizens with special interest in an aspect of the trail. For example in 1976, during the bicentennial celebration, historic hikes could be held every Sunday afternoon. Hikes or field trips could concentrate on one particular area for an indepth study of the marsh community, the military, or Bellvue Dome. Field trips should be on different topics and aimed at different age groups or educational levels.

Self-guided Trails. Interpretive signs placed along the trail at significant resources or brochures keyed to markers at the resources allow recreationist to discover an area at their own pace. This method of interpretation does not allow the user to ask questions and pursue a topic in-depth. However, he is free to explore and choose those topics he finds most interesting.

Signs require little maintenance and when properly designed are easily read and enjoyed. Unfortunately, the initial cost is high and signs are often the target of vandalism.

Brochures keyed to markers are less expensive but require more attention in maintaining a supply for visitor use. Brochures can contain a more detailed message and may be changed more easily with seasons or changes in the resource. Brochures and signs combined to complement

each other are also extremely effective. Any signs should be of uniform design. Use of the Ft. Collins' logo or one developed for the trail would be aesthetically valuable and help establish continuity along the trail.

Other new innovations in self-guided trails are being developed continually. Tape recordings and other electronic media are just beginning to be explored. These methods are expensive and probably unrealistic for use along the Cache La Poudre at this time.

Interpretive Buildings. An interpretive building serves as a center for information, displays, classrooms and headquarters for staff. A building allows more flexibility in programs and provides a place for visitors to become orientated and engage in more complete study.

The Ft. Collins Military Fort, when reconstructed, could serve as a historic center along the Cache La Poudre Trail. Here classes on local history could be held. Displays and literature could also be kept in this building. The Lee Martinez Park Complex could perhaps serve as a nature center or some new facility could be found to serve as an interpretive building for the programs associated with the trail. This would give the project a focal point for visitors interested in using the trail.

Field Courses. Classes may be offered here for young and old. Nature study, edible plants, ornithology, rock geology and local history are just a few of the many topics which might be covered. Educational opportunities in natural settings with actual objects and observations are much more stimulating and exciting than classroom study.

Classes could be organized by the Ft. Collins' Recreation Department with fees charged and programs offered in a manner similar to that used for the existing recreational programs.

School Courses. Local schools will find the trail offers an uncommon opportunity for on sight learning and provides a great laboratory for the extension of the school room. Colorado State University as well as the city schools will find the trail helpful as a research area. Cooperation with schools and colleges could possibly result in experimental class and volunteer assistance in the development and maintenance of programs. The college would be an excellent place to find interpreters and at the same time assist students by giving them practical experience. Small school children might enjoy making displays, assisting with maintenance and presenting special programs on community history. The schools and recreation department as public organizations should work together in serving the community.

Hobby and Service Clubs. Those who share particular interest related to the trail will enjoy meeting here and may become interested in helping in the development of the trail. For example, the Audubon Society could not only use the trail for meetings or special programs but might help build bird observation blinds or conduct bird walks for the public.

Service clubs who enjoy contributing to the community might assist in special events or in constructing interpretive facilities along the trail. The entire community should be urged to contribute toward making the Cache La Poudre Trail a source of pride for the community.

Programs for the Handicapped. Special walks for blind, retarded, or other handicapped groups should be planned. The trail itself should be constructed to accomodate wheelchairs and a small curb would be helpful to the blind. Interpretive messages in braille would be excellent.

Displays. Displays along the trail or in an interpretive center can add to the visitors understanding of resources of the trail. A weather station with an explanation of the effects of climate, a station on animal tracks, geology walls to display rocks, photographic blinds, "Feely" boxes to promote use of all the senses, and many other displays are possible. Models showing the development of an area such as the Bellvue Dome, or actual objects such as guns used at the military fort constitute types of displays that are helpful in bringing a subject to life.

Temporary displays would be best in an area such as this where many visitors will return frequently. Schools, organizations, and interested individuals should be encouraged to be responsible for displays.

Special Events. Numerous special events should be held to encourage use of the trail. Photographic contest, living history, plays and reenactments of local history, night hikes, display contest, natural art contest, or natural food feast are a few examples. These should be well publicized and appeal to various interest.

Recommended Program

To initiate use of the trail a self-guided system would be best. Brochures keyed to markers would have several advantages. It would be fairly inexpensive and very flexible. The brochures or trail guide could be mimeographed on inexpensive paper or it could be a published booklet with pictures. In the beginning an inexpensive mimeographed pamphlet would serve well. After the trail is in use, the stops and messages could be evaluated and easily changed if necessary. Pamphlets could be produced for each type of resource, different age levels, and for the season of the year.

Markers could be made of railroad ties, cut telephone poles, or any type of wooden post. Such markers would hopefully be less inviting to vandalism than larger signs. After sinking these into the ground, numbers could be painted on them. Post numbers could be color keyed to the brochures or symbols could be used suggestive of the type of resource.

Pamphlets should be available at the trail entrances, and at Park and Recreation offices. Pamphlets should be developed for a variety of topics such as history, nature study, and geology. Pages 62 thru 93 are an example of this system. Sketches of marker locations and typical messages are shown along with other suggestions for trail furnishing.

This program could then be further developed as time permits. Interpretive centers, displays, and special classes should all be established to create a complete program of interpretation.

Implementation

The suggested self-guided trail should be implemented as soon as the trail is constructed. The simplicity of this program will allow easy installation of facilities. Interpretation along the new trail will acquaint visitors with the numerous resources to be found and stimulate their interest in further interpretive development. Interpretation will also serve in preservation of the community's resources.

This program will require regular maintenance and regular replacement of brochures. Perhaps, frequent policing by park staff or city police when the trail is first opened would establish proper use habits.

At least one Interpreter should be hired. His duties would include preparation of brochures, special events, and displays. Coordinating activities with schools and various community organizations as well as programming use of the area would be part of the Interpreter's job.

Use of the trail should be enthusiastically promoted; therefore, the person filling this position should be highly skilled in public relations. Promotional activities, newspaper articles, and radio spots will be essential in stimulating interest in the trail. The trail holds great potential, but it will require an energetic individual to assist the community in realizing its total merits.

Evaluation, is necessary to determine how satisfactorily the program is meeting the needs of the users. After the first year of use, the system should be thoroughly evaluated. The actual users and their desires can then be surveyed. Any problem should be apparent and the necessary adjustments made. Perhaps new stops could be added or old ones changed. Messages could also be revised.

Summary

The program recommended is not elaborate and it only begins to develop the interpretive potential which exists along the river. However, as an initial program it may be easily implemented with minimal expense and will give visitors a good introduction to the river.

After the trail is constructed and the recreational use more completely evaluated, changes can be made easily. More creative people will be motivated to develop new methods of telling the river's story. Interpretation is a form of education and as such it cannot be stagnate. Programs should be frequently reviewed and updated to meet current needs.

CACHE LA POUDRE TRAIL

Figure 8. A sturdy entrance sign could be made of logs bolted together and sunk in the ground. Lettering could be painted or plastic or metal letters nailed on the sign.

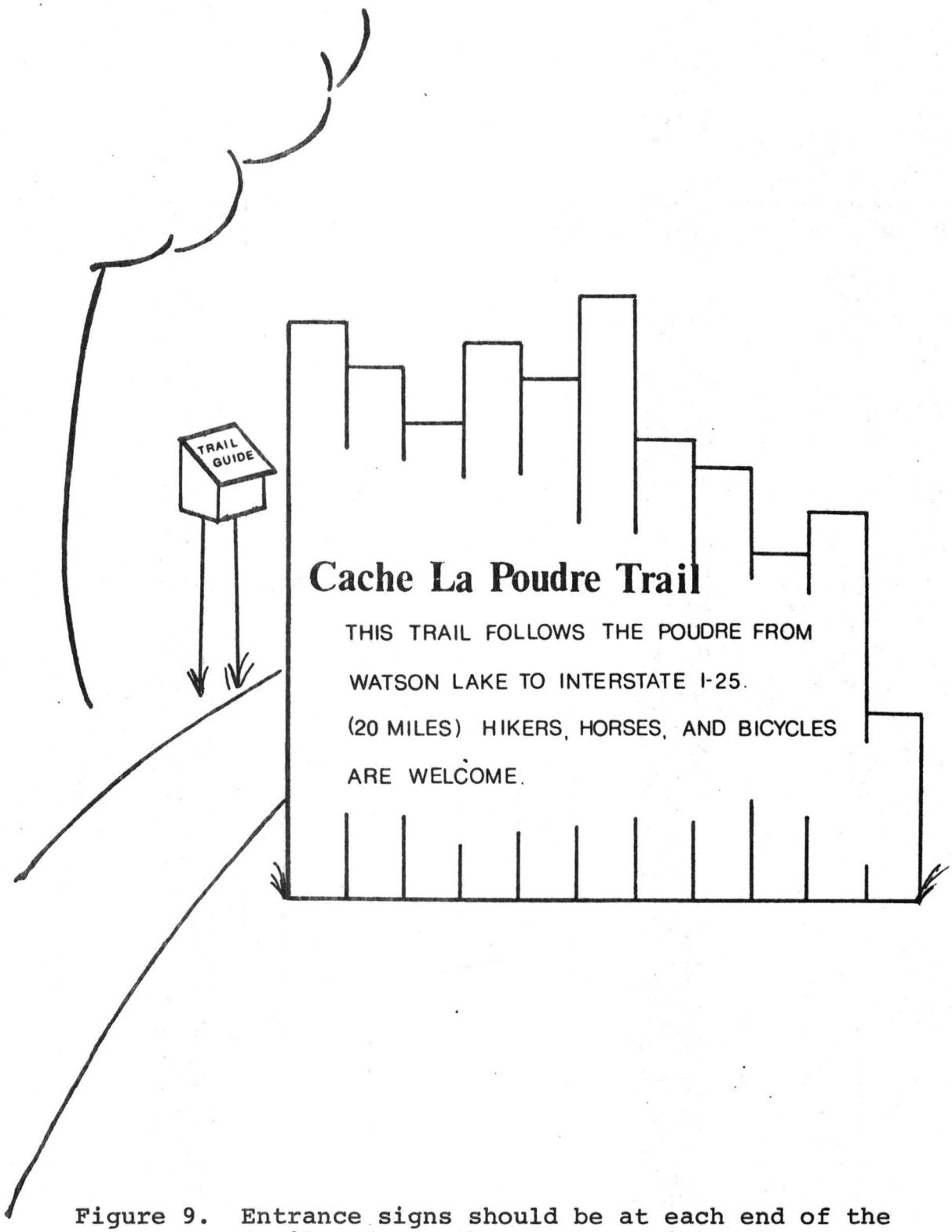


Figure 9. Entrance signs should be at each end of the trail and at other access points.

Figure 10. A typical stop along the trail might look like this.

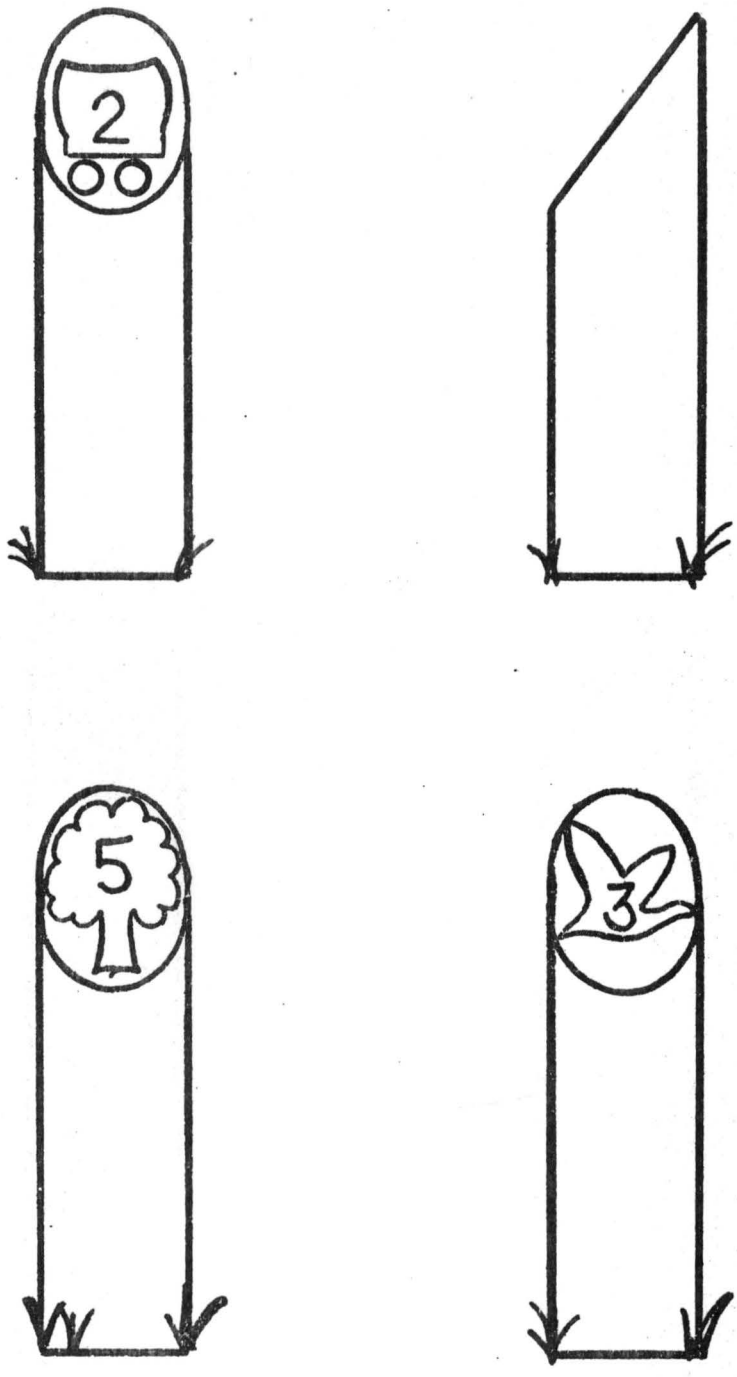


Figure 11. Markers for the stops could have symbols such as the covered wagon, tree, and goose to represent the resources or the numbers could be colored to make the markers more attractive.

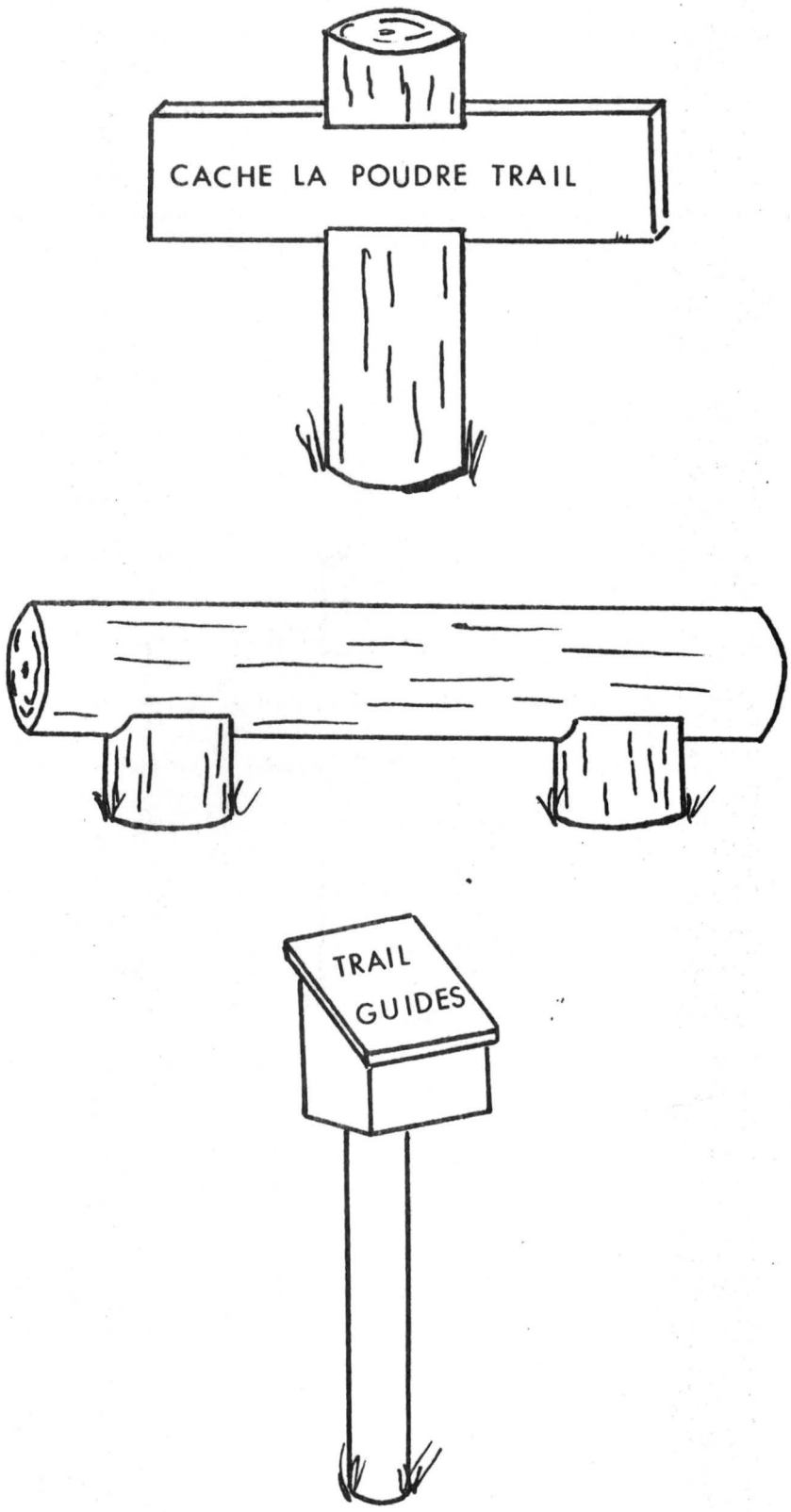


Figure 12. Trail markers and benches should be rustic. A simple box could be used for trail guides.

Figure 13. Stop 1. Bellvue Dome and Watson Lake.

Looking north you can see Watson Lake and the Fish Rearing Unit operated by the Colorado Department of Game, Fish, and Parks. Rainbow trout are raised here for stocking in Colorado's streams and lakes. Watson Lake is open for public fishing. You are welcome to visit both of these facilities.

On the right side of the lake is Bellvue Dome, which looks like a hill that has been cut in half. The dome was formed millions of years ago by the folding of the earth's crust. Later, after sediment washed down from the mountains and covered it, the Poudre established its course across the top of the dome. Then once again the earth began to change, going through a period of uplifts. While the land rose, the river continued to maintain its course and cut down through the dome. All thse processes happened so slowly that they would have been unnoticed by man. The earth's surface is slowly but constantly changing. Even now some mountains are being flattened while others are rising.

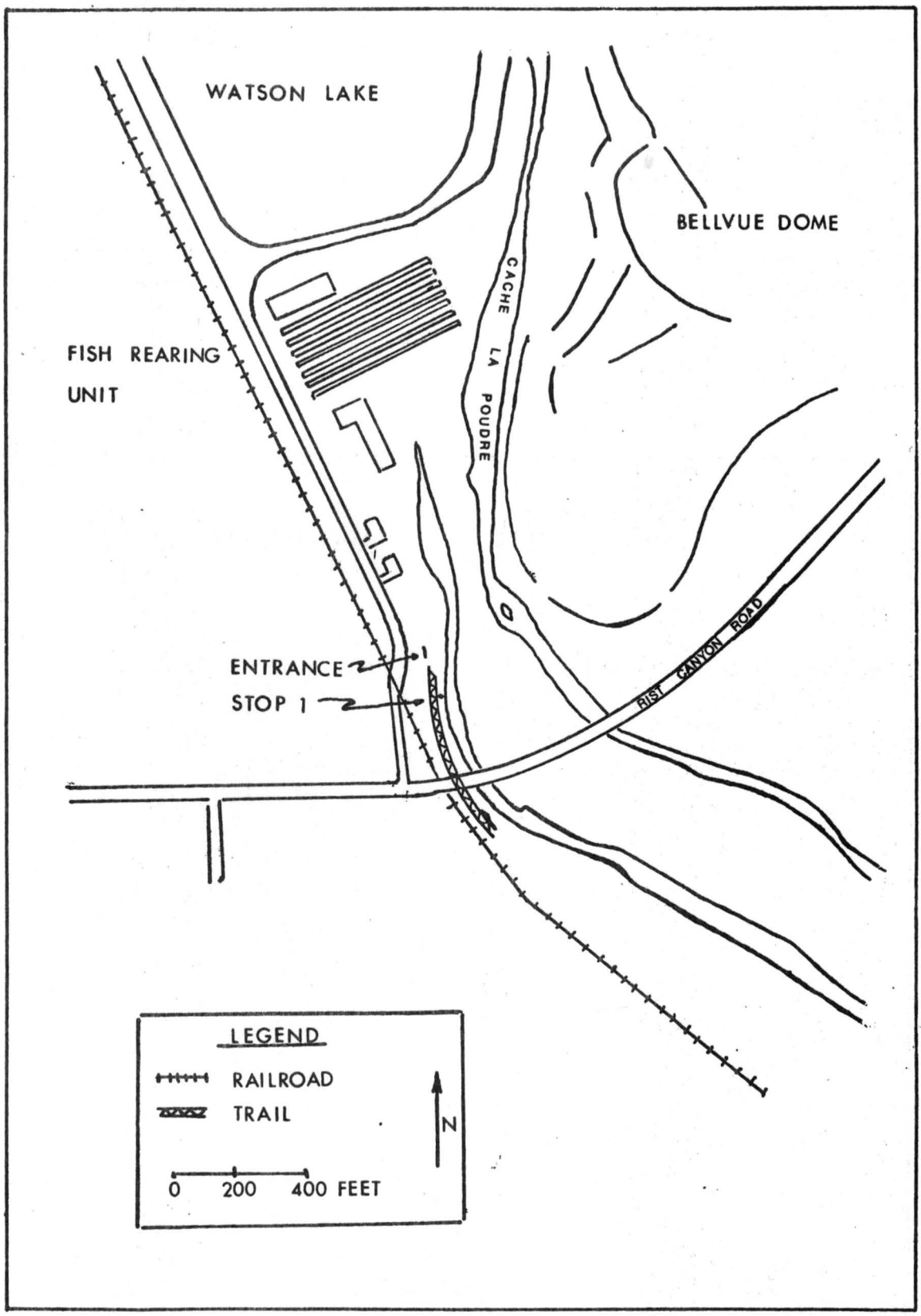

WATSON LAKE
BELLVUE DOME
CACHE LA POUDRE
FISH REARING UNIT
287
ENTRANCE
STOP 1
BIST CANYON ROAD
LEGEND
RAILROAD
TRAIL
N
0 200 400 FEET

Figure 14. Stop 2. Cache Site.

In November of 1863, a party of fur trappers on their way to Green River, Wyoming from St. Louis, Missouri stopped here for the evening. A severe snow storm set in while they were camped. Before traveling on, the trappers decided to lighten their load and leave some of their supplies and gun powder. They dug a deep pit and buried their supplies. Then they disguised it from the Indians by burning brush over it. Subsequently, in later reference to the river, the trappers coined the phrase Cache La Poudre, which is French for "where the powder is hidden".

The spot where the cache was hidden is to the west in a field directly across from the farm with the silo.

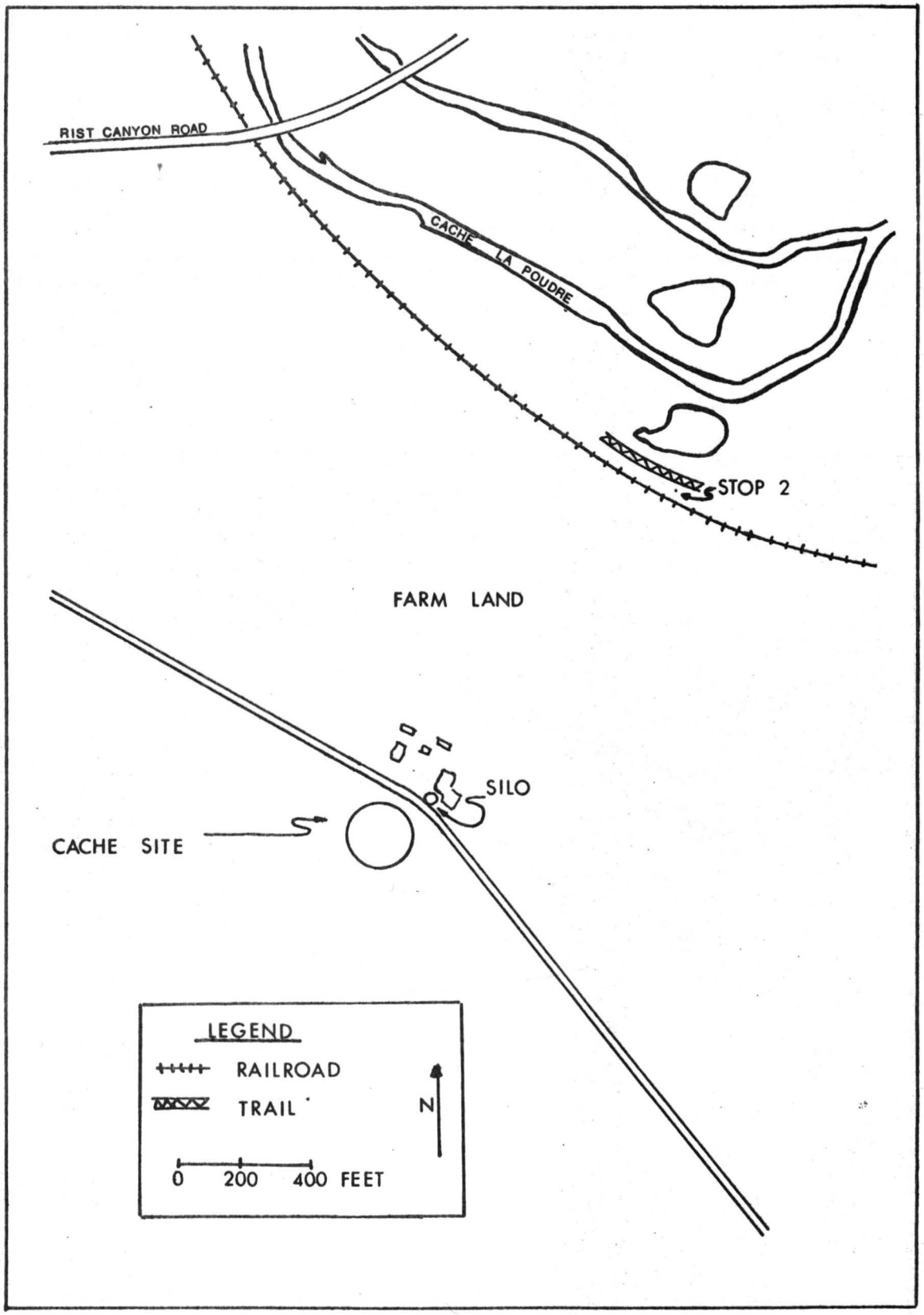

RIST CANYON ROAD
CACHE LA POUDRE
STOP 2
FARM LAND
SILO
CACHE SITE
LEGEND
RAILROAD
TRAIL
N
0 200 400 FEET

Figure 15. Stop 3. Janis Farm.

The subdivision on the north side of the river is located on Antoine Janis's claim. Antoine was the first white settler in the area and he staked his claim in 1844.

Antoine is reported to have been with the trappers who buried the powder and named the river. His father was a trapper and Antoine accompanied him as a child.

In 1863, he allowed the soldiers to establish their camp on his land. This was Company B of the First Colorado Volunteer Cavalry which had been sent to guard the Overland Trail. The camp was later named Camp Collins after the Commanding Officer of Ft. Laramie, Lt. Col. William O. Collins. In June of 1864, a destructive flood in the middle of the night destroyed the camp. Higher land was then sought and they moved their camp to the present site of Ft. Collins.

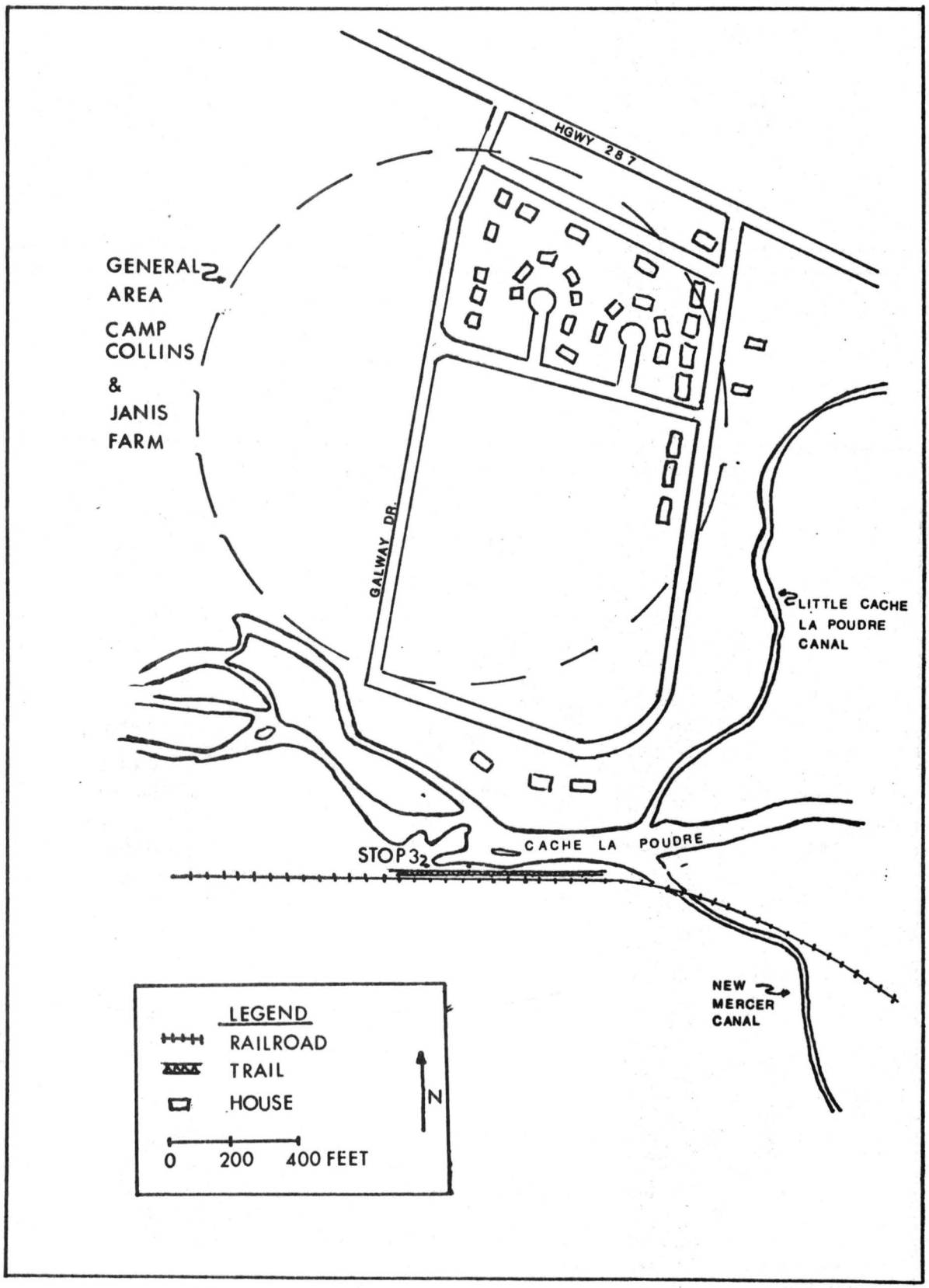

HGWY 287
GENERAL AREA
CAMP COLLINS & JANIS FARM
GALWAY DR.
LITTLE CACHE LA POUDRE CANAL
STOP 32
CACHE LA POUDRE
NEW MERCER CANAL
LEGEND
RAILROAD
TRAIL
HOUSE
N
0 200 400 FEET

Figure 16. Stop 4. Laporte.

The bridge to the east is located close to where the first bridge to cross the Cache La Poudre once stood. It was the crossing point for the stage route on the Overland Trail. Just up the road to the north is the town of Laporte, one of the most important early trading posts in Colorado. It was the first county seat for Larimer County from 1861 to 1868.

The Holliday Stage Station at Laporte was an important stop along the trail. An old newspaper article said "Laporte in 1868 was a lusty, roistering settlement with four to five saloons, a brewery, wagon trains passing through, a stage station on the trail, the first county court house, soldiers, Indians, trappers, and squaw men." (Margaret Ross Portner)

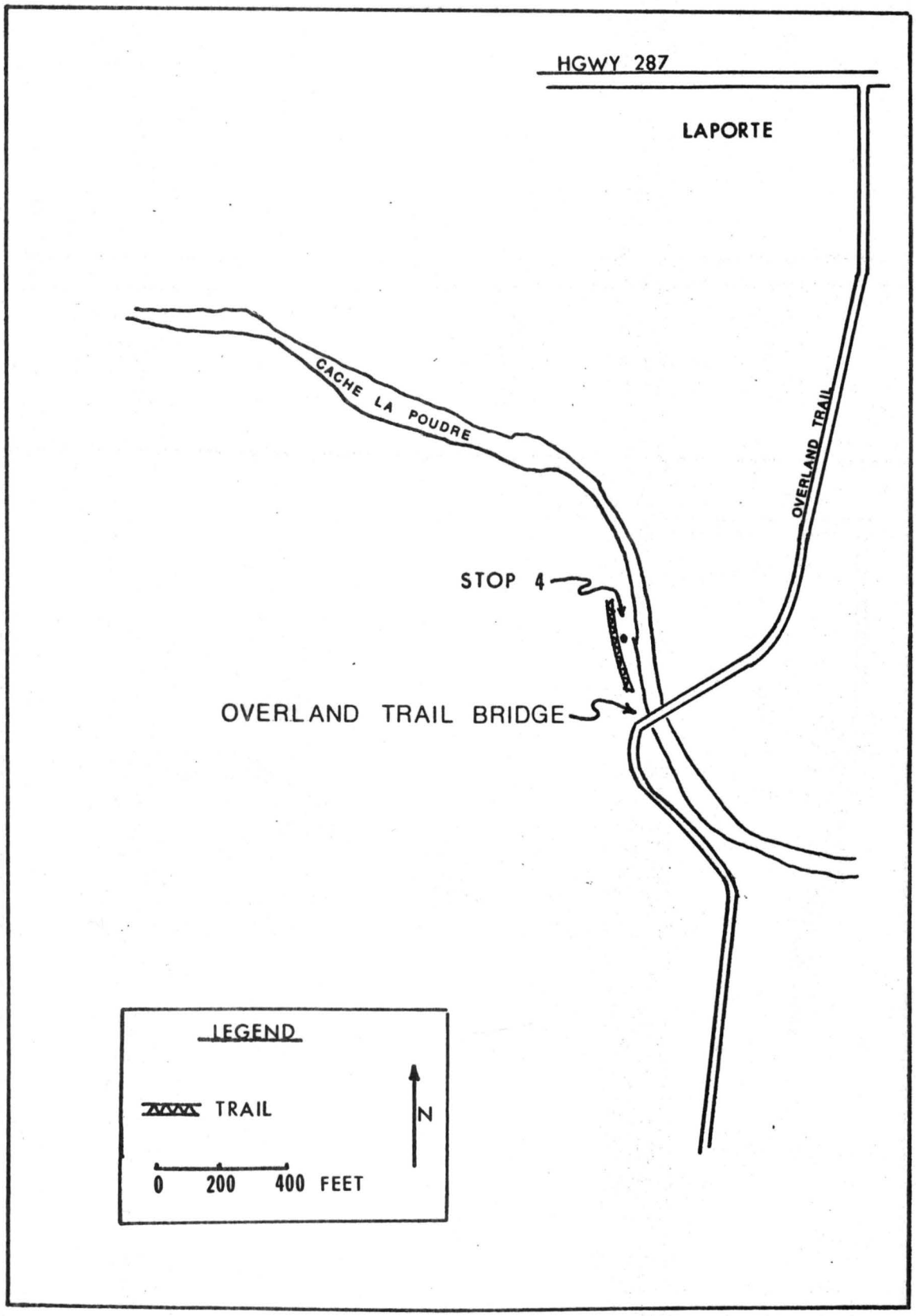

HGWY 287
LAPORTE
CACHE LA POUDRE
OVERLAND TRAIL
STOP 4
OVERLAND TRAIL BRIDGE
LEGEND
TRAIL
N
0 200 400 FEET

Figure 17. Stop 5. Larimer and Weld Canal.

Directly across the river you can see the diversion point for the Larimer and Weld Canal. This is one of the largest canals which diverts water from the Cache La Poudre River. It was first built in 1864 and called the Eaton Ditch after Colorado Governor Benjamin Eaton.

When first built, the canal had a capacity of only three cubic feet of water per second. After that it was enlarged five times between 1866 and 1878. It now carries over 720 cubic feet of water per second. This canal irrigates 52,239 acres of land south of the canal from here past Galeton, Colorado.

There are a multitude of ditches and canals which divert water from the river to irrgate the farmlands of the area. Most of the ditches were built before the 1900's.

The Colorado Big Thompson Project is an important development which brings water from the Western Slope of the Rockies to the east. The project, built between 1937 and 1956, assures an adequate water supply for the South Platte River Basin. This includes the area between the cities of Boulder, Longmont, Loveland, Ft. Collins, Greeley, Ft. Morgan, Sterling, and Julesburg.

Irrigation is extremely important to the economy of the area. It has changed the area from dry open plains suitable only for grazing, into rich agricultural lands valuable for raising crops.

You will see many diversions such as this along the stream. Caution! Water flows rapidly through the canals.

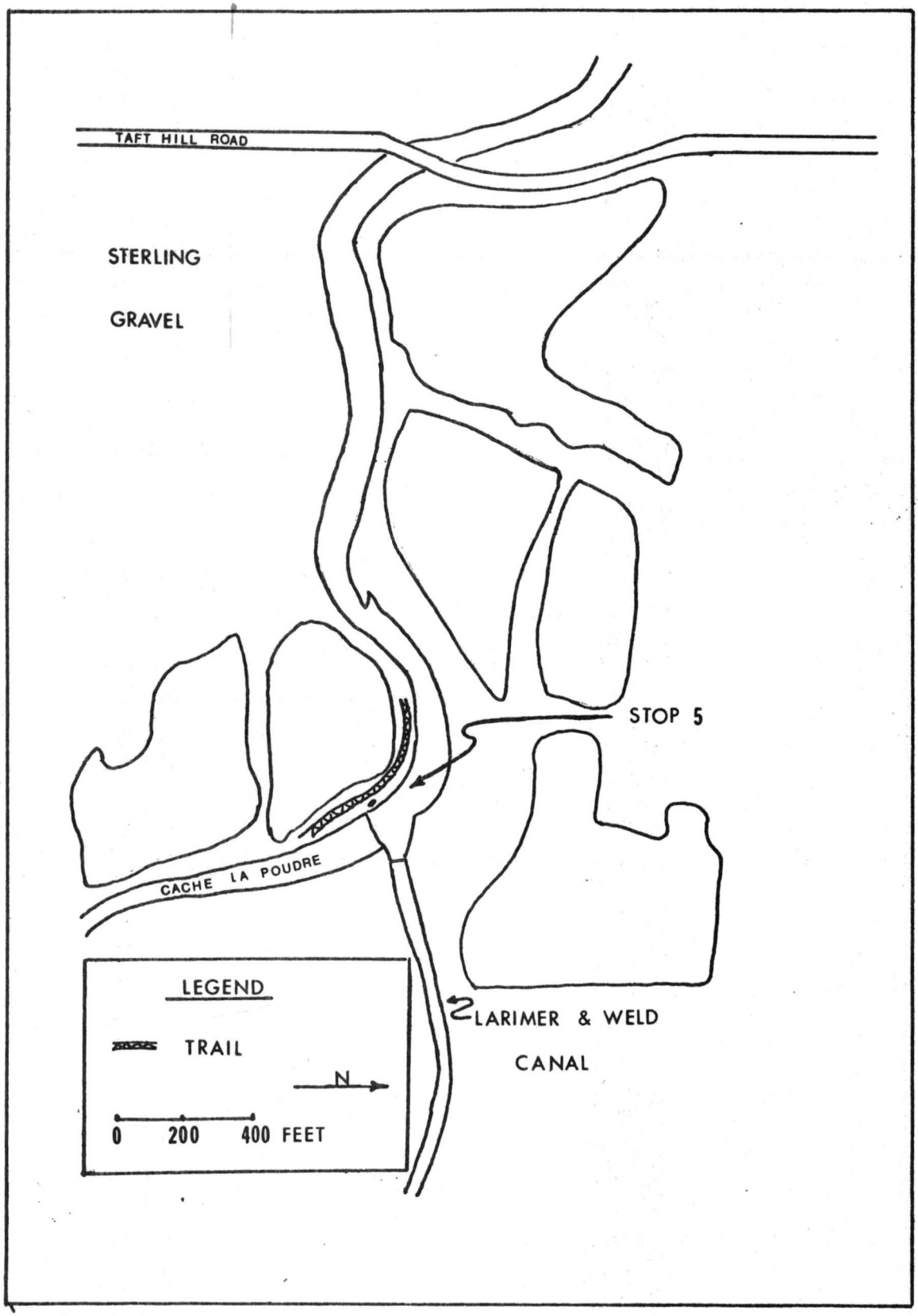

TAFT HILL ROAD
STERLING
GRAVEL
STOP 5
CACHE LA POUDRE
LARIMER & WELD
CANAL
LEGEND
TRAIL
N
0 200 400 FEET

Figure 18. Stop 6. Lee Martinez Park.

This is Lee Martinez Park operated by the Ft. Collins Parks and Recreation Department. The park has several interesting features, including a farm zoo, sports fields, observation blinds, picnic sites, nature trails, and an Arboretum located directly south of here.

We suggest you stop and enjoy these and other interesting facilities this park has to offer.

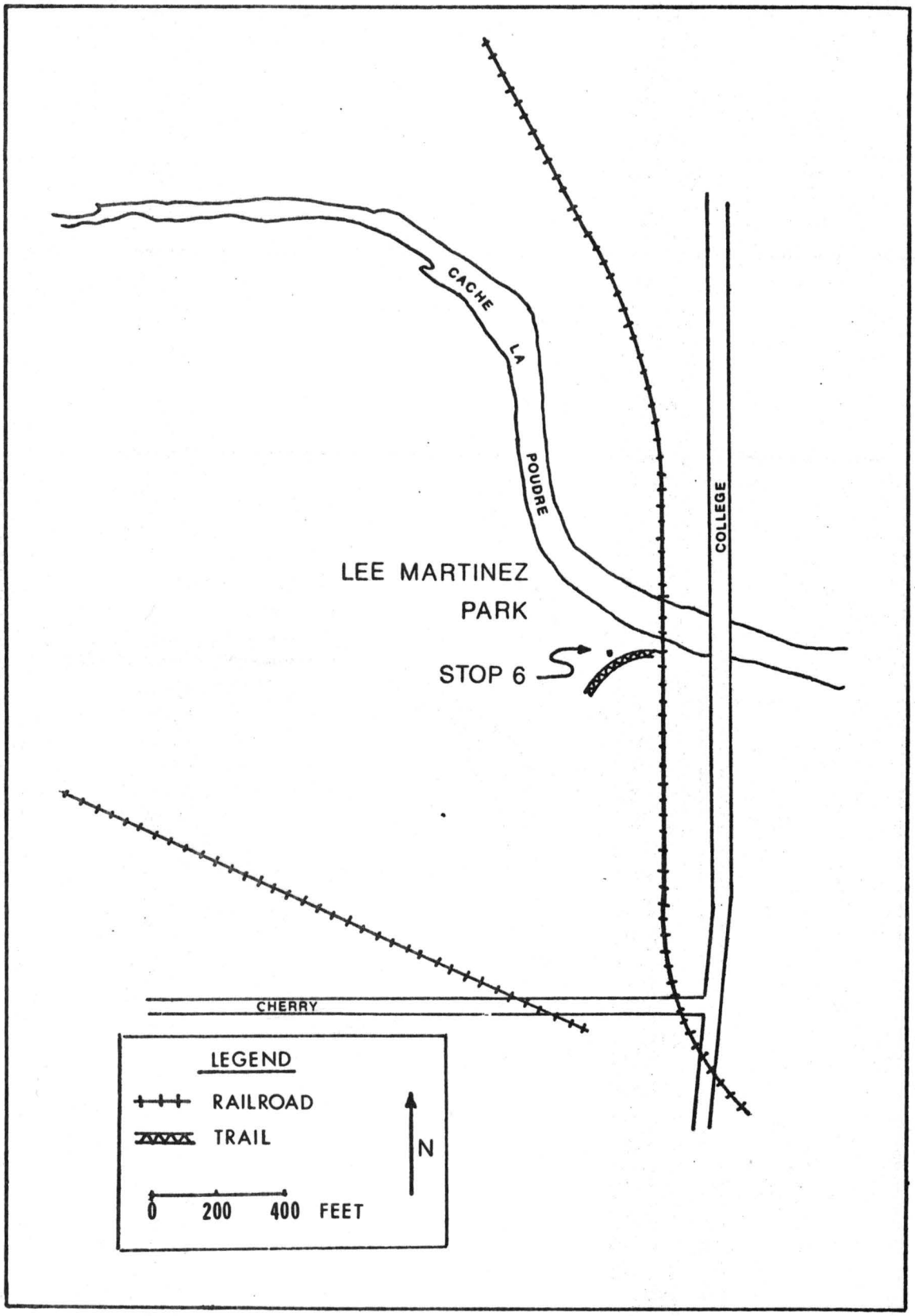

CACHE LA POUDRE
COLLEGE
LEE MARTINEZ PARK
STOP 6
CHERRY
LEGEND
RAILROAD
TRAIL
N
0 200 400 FEET

Figure 19. Stop 7. Fort Collins.

To your west is a replica of the original Ft. Collins. The fort was established here after the first camp near Laporte was demolished by a flood in 1864. The fort was established to guard the Overland Trail from Indians. It was expected to become an important western fort, but Indian problems diminished here and the fort was subsequently disbanded in 1867.

This military establishment marked the start of what today is the thriving City of Ft. Collins. The fort was reconstructed in 1976 as part of the Bicentennial Celebration. It is open to the public and you are welcome to visit and learn more about the post.

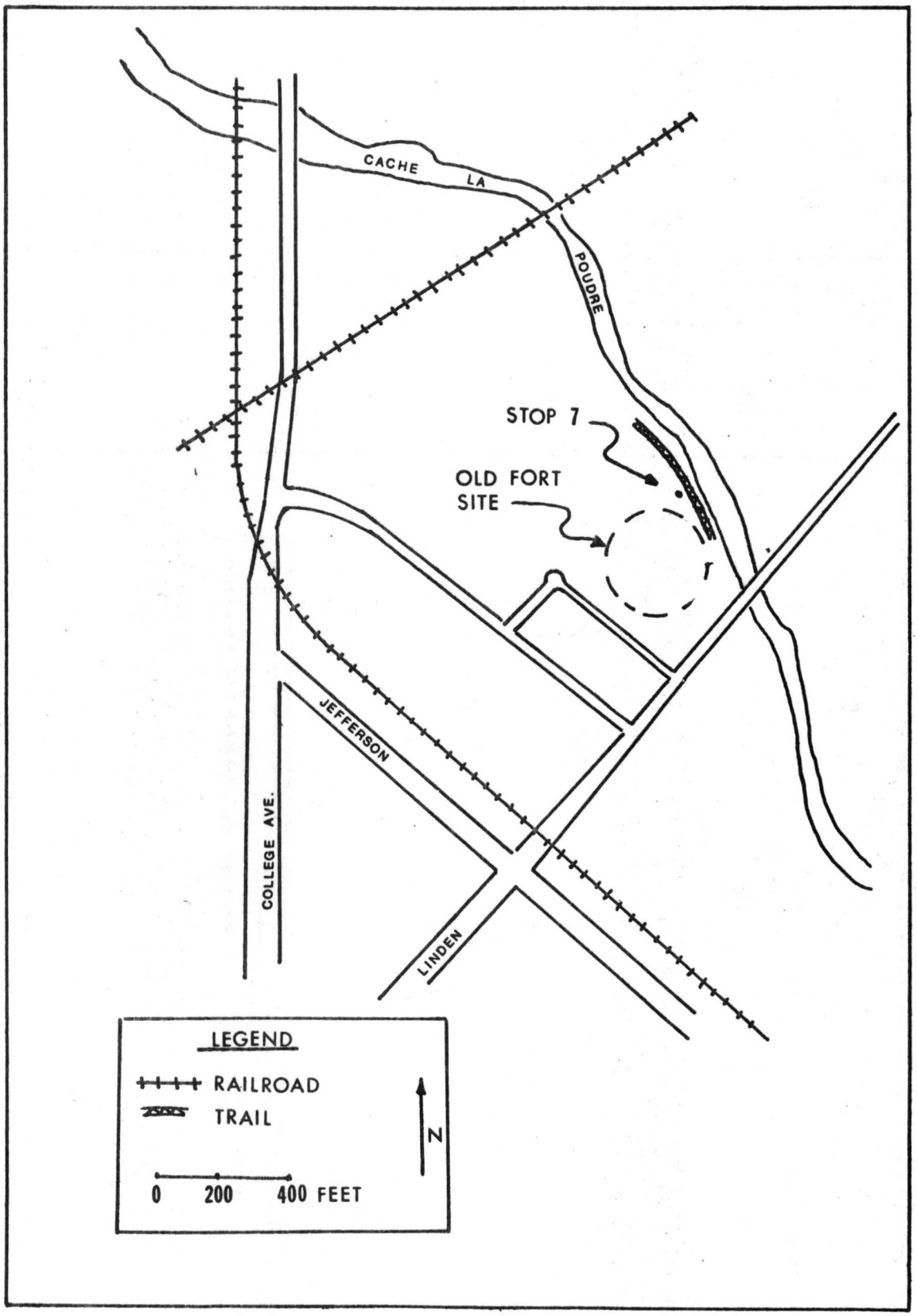

CACHE LA
POUDRE
STOP 7
OLD FORT SITE
JEFFERSON
COLLEGE AVE.
LINDEN
LEGEND
RAILROAD
TRAIL
N
0 200 400 FEET

Figure 20. Stop 8. Flour Mill.

On the west bank of the Poudre you can see one of Ft. Collins' oldest industries. Ranch-Way Feed stands where the city's first flour mill was built in 1868. The mill was built by Henry Clay Peterson and "Auntie" Stone, the first white woman resident in Ft. Collins.

Elizabeth "Auntie" Stone was a remarkable pioneer. She conducted a hotel; cooked for the army officers; helped organize the Women's Christian Temperance Union; built a brick kiln; and helped erect a flour mill. She accomplished all these things after she came to Ft. Collins at the age of 63.

The mill has changed hands many times and has burned down, but it was always rebuilt and remained a flour mill until 1952 when Ranch-Way began to manufacture feeds.

Flour from the mill has been sold under several names: Defiance, Jack Frost, Snow Drift, Queen of the West, Trader, Snow Flake, and Pride of Colorado.

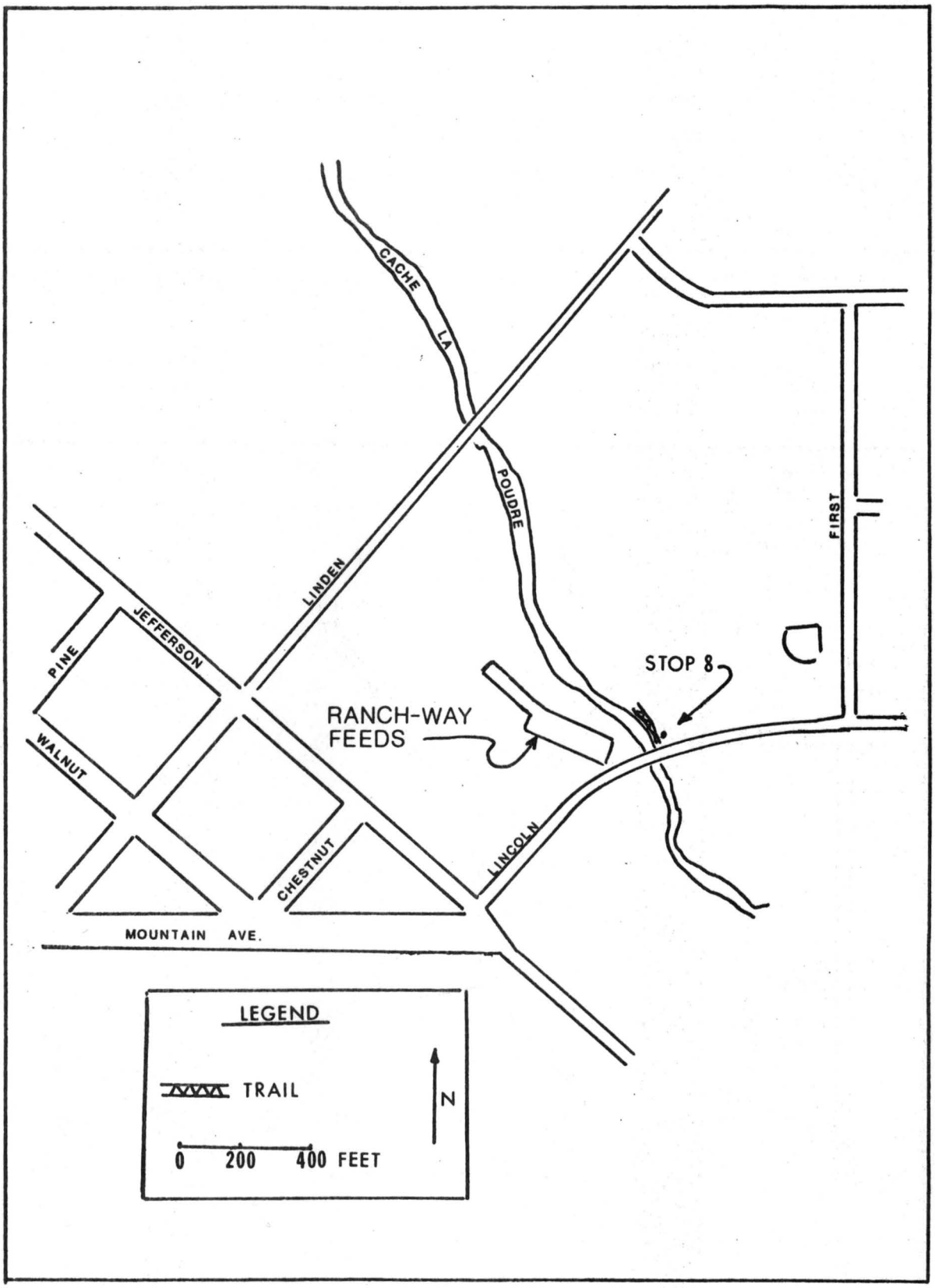

CACHE LA
POUDRE
FIRST
LINDEN
PINE
JEFFERSON
WALNUT
CHESTNUT
LINCOLN
MOUNTAIN AVE.
STOP 8
RANCH-WAY
FEEDS
LEGEND
TRAIL
N
0 200 400 FEET

Figure 21. Stop 9. The Marsh.

You are now in the middle of a small marsh. Look here for red-winged blackbirds, frogs, and snakes, that make their homes and hunt for food among the cattails.

The animals and plants that live together in the same area, and have an effect upon each other, make up a community. These organisms become dependent upon each other. For example, the frogs come to eat the insects which live among the cattails. Then in turn, the frogs serve as food for the snakes that live in the area. Each member of a community has its place.

The marsh is a very wet area which is slowly changing itself into a dry area. At one time the river flowed where the marsh stands. However, the river's course moved eastward and this area began to fill with sediment. Along the more shallow edges the cattails and other aquatic plants began to grow. Now, as these plants grow, their roots tie the soil together. These firmly rooted plants collect more sediment, and as they die, their matter decays and builds up the soil. Very slowly, the land is becoming higher and new plants that need less moisture will move in where the cattails now grow. Eventually the marsh will be gone with the area being drier, growing only trees and shrubs.

This is called succession. It is the natural sequence of communities which succeed and replace one another over time.

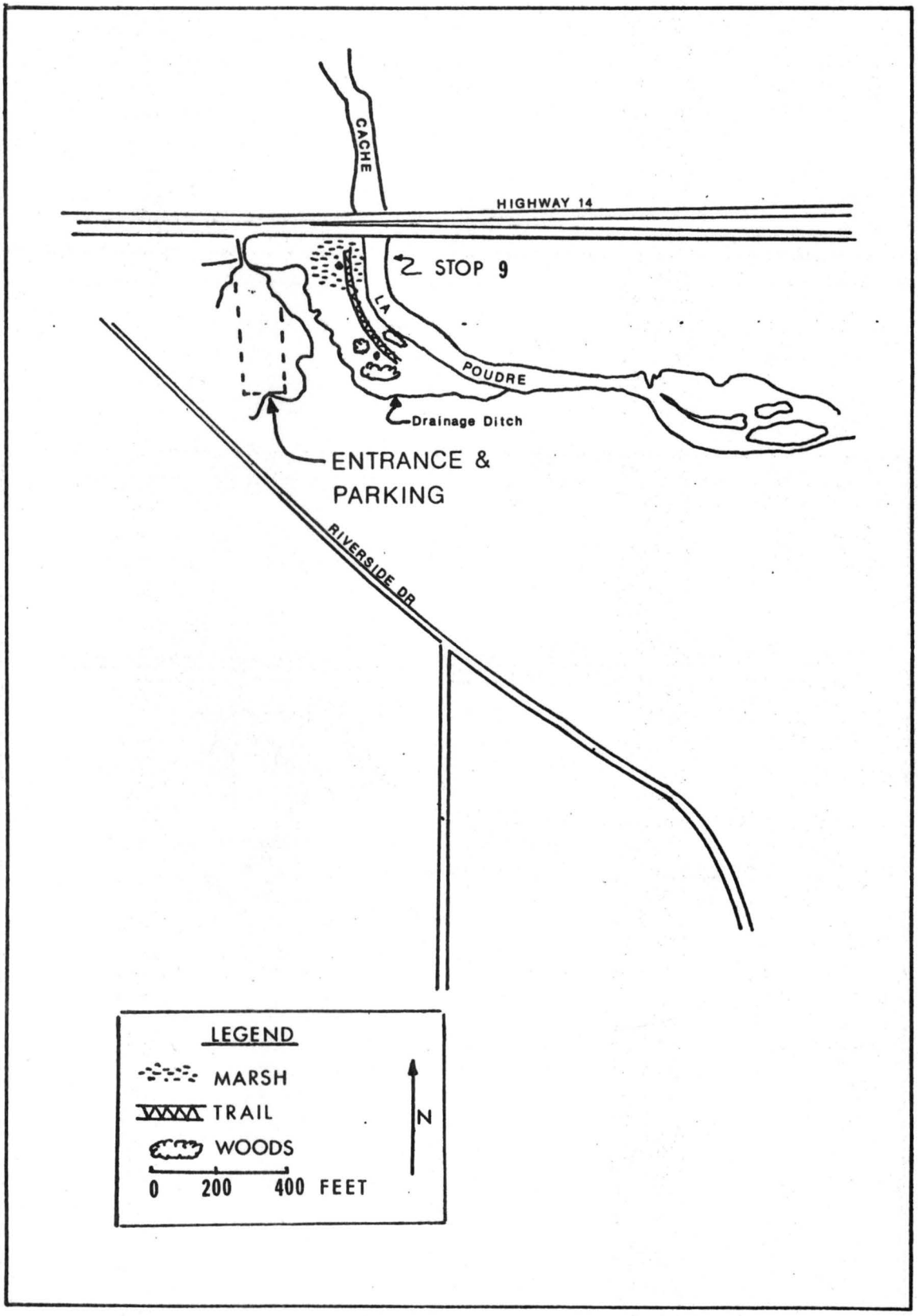

CACHE
HIGHWAY 14
STOP 9
LA
POUDRE
Drainage Ditch
ENTRANCE &
PARKING
RIVERSIDE DR
LEGEND
MARSH
TRAIL
WOODS
0 200 400 FEET
N

Figure 22. Stop 10. Trees of the River.

The cottonwood and willow trees you see around you and along the Cache La Poudre are unique to the river valley. Ft. Collins' dry climate is not suitable for natural tree growth except along the river corridor, where the soil is more moist. The trees in town can live only when watered by man.

The cottonwoods are famous for their seeds which have cotton-like hairs on them. The cottony hairs allow the seed to be carried for several miles by the wind. These are often an aggravation to people who find the cotton caught in their screens and in their yards.

The willows, like the cottonwoods, can tolerate extreme wetness. They grow very quickly, flourishing along the stream, and sometimes forming dense thickets.

Cottonwoods and willows can be seen throughout the United States around rivers, streams and ponds. There are many different species but all have similar characteristics.

Fox squirrels may be seen here scampering through the trees. They build their nest high in the tree limbs or inside hollow trunks. Also, many types of birds nest high in the trees. The great blue herons and black-crowned night heron build large platforms in the highest branches. Woodpeckers, magpies, and Bullock's orioles are other common tenants of the cottonwoods' tree tops.

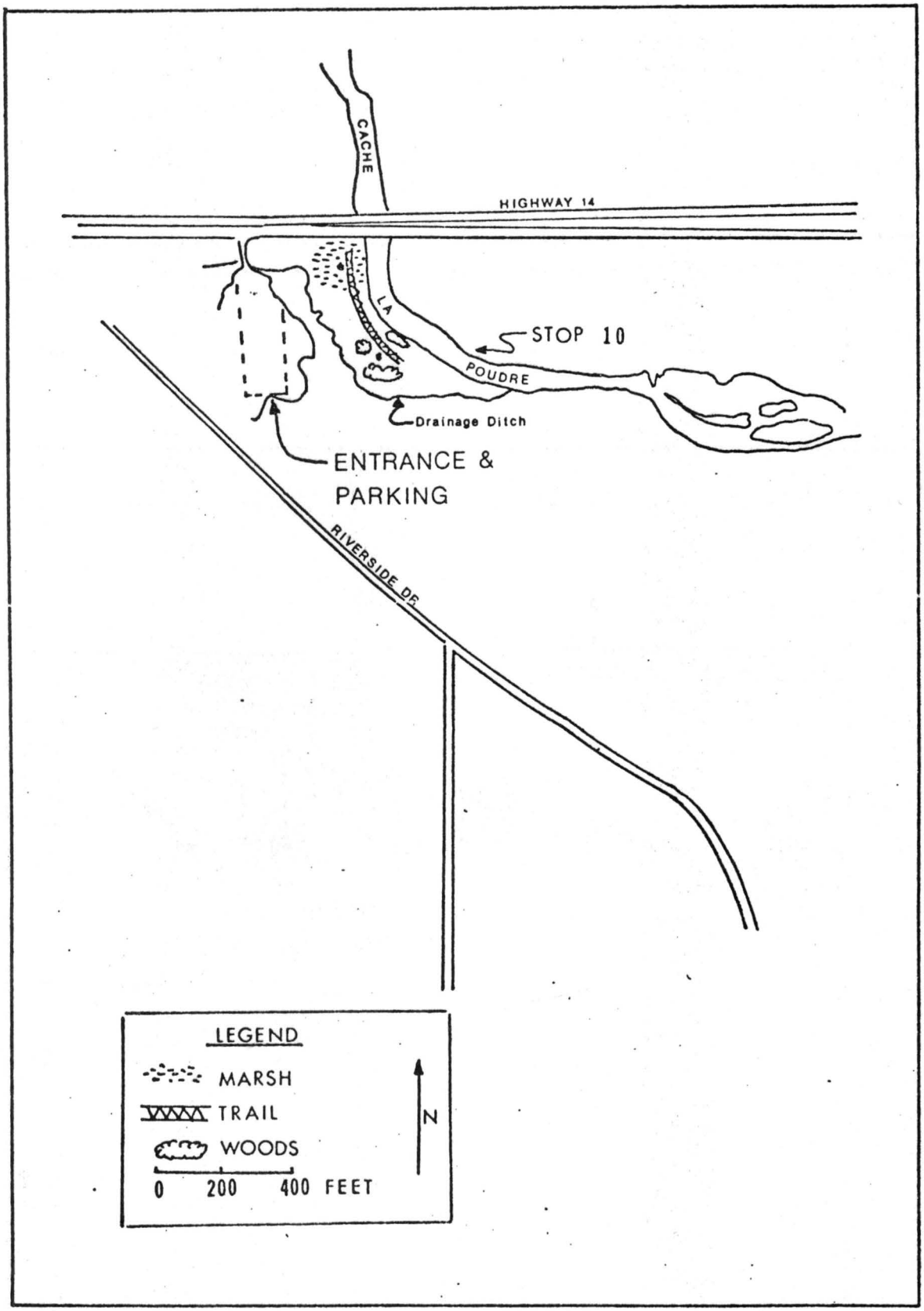

CACHE
HIGHWAY 14
LA
POUDRE
STOP 10
Drainage Ditch
ENTRANCE &
PARKING
RIVERSIDE DR.
LEGEND
MARSH
TRAIL
WOODS
0 200 400 FEET
N

Figure 23. Stop 11. Gravel Pit.

Gravel is a significant resource of the Cache La Poudre River valley. It is an essential material in the construction of roads and buildings. Gravel can be found along the entire course of the Poudre, deposited by glacial outwash many years ago.

Although gravel mining may be unsightly along a greenbelt, gravel is an important resource. In areas where the gravel supply has been covered or exhausted, rock must be quarried from the mountains and then crushed to make gravel. This process costs about twice as much as the mining method used along the Poudre.

Presently, Ft. Collins, Larimer County, Colorado State University, and Flatiron Gravel Company are coordinating their efforts to establish procedures whereby mined lands may be reclaimed for parks or other suitable uses.

(This area may be reclaimed by Flatiron in 1976. If so, the information could explain more about the process of reclamation.)

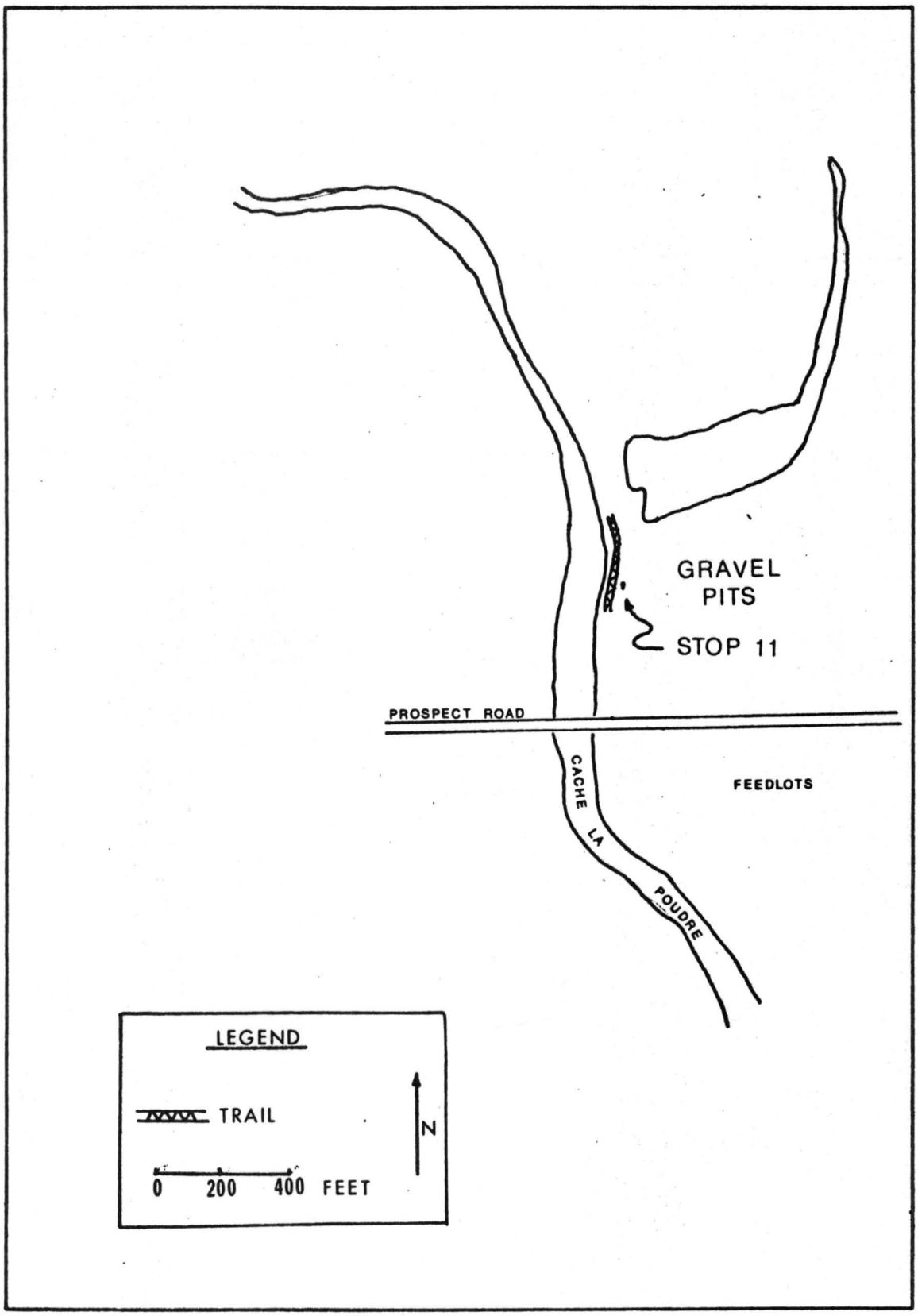

GRAVEL
PITS
STOP 11
PROSPECT ROAD
CACHE LA POUDRE
FEEDLOTS
LEGEND
TRAIL
N
0 200 400 FEET

Figure 24. Stop 12. C.S.U. Nature Center.

You are now at the Colorado State University Nature Center. There are many nature walks to take which explain the river bottom ecology and the flood plain. You are welcome to stop here and enjoy the trails, wildlife, and natural surroundings.

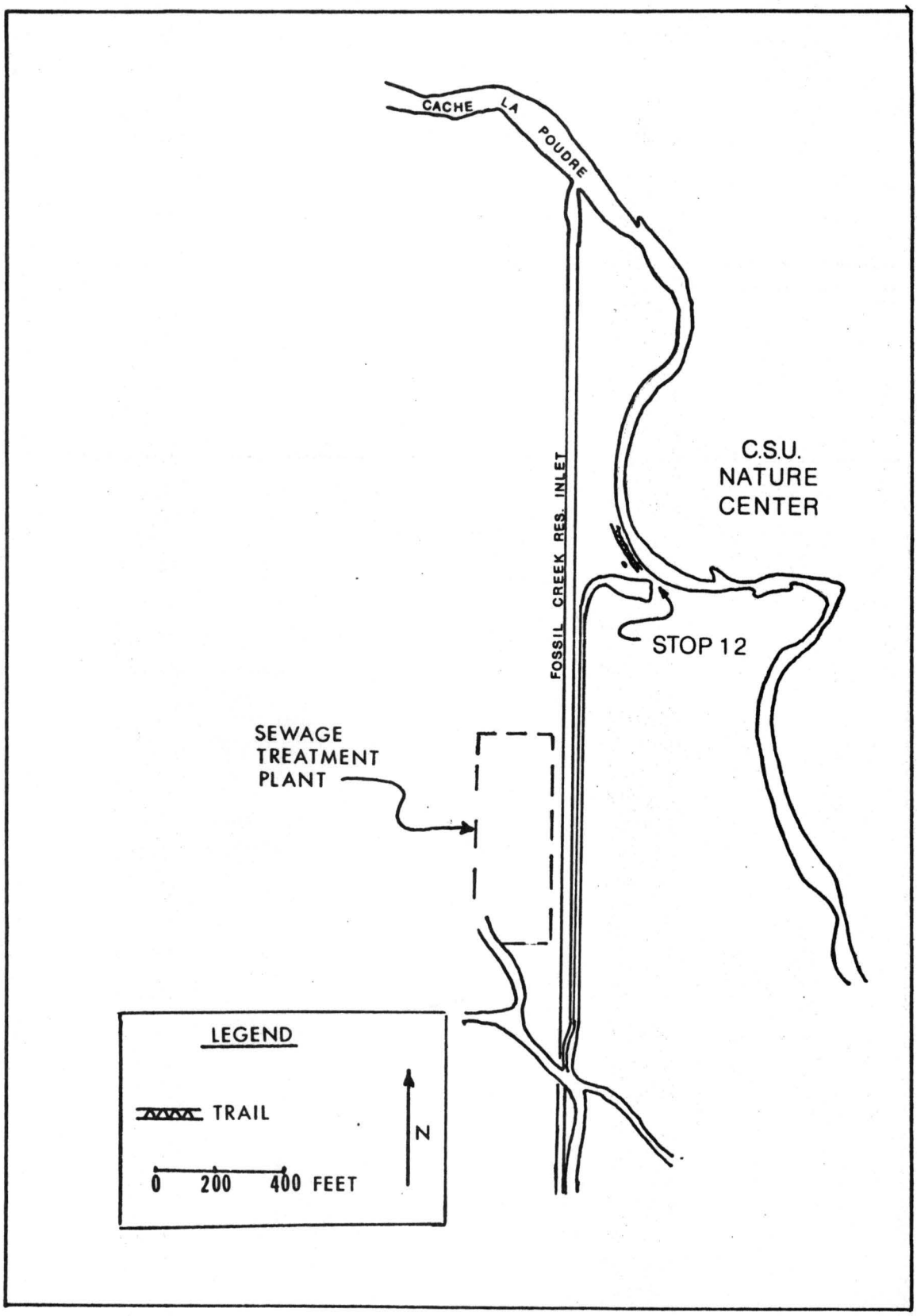
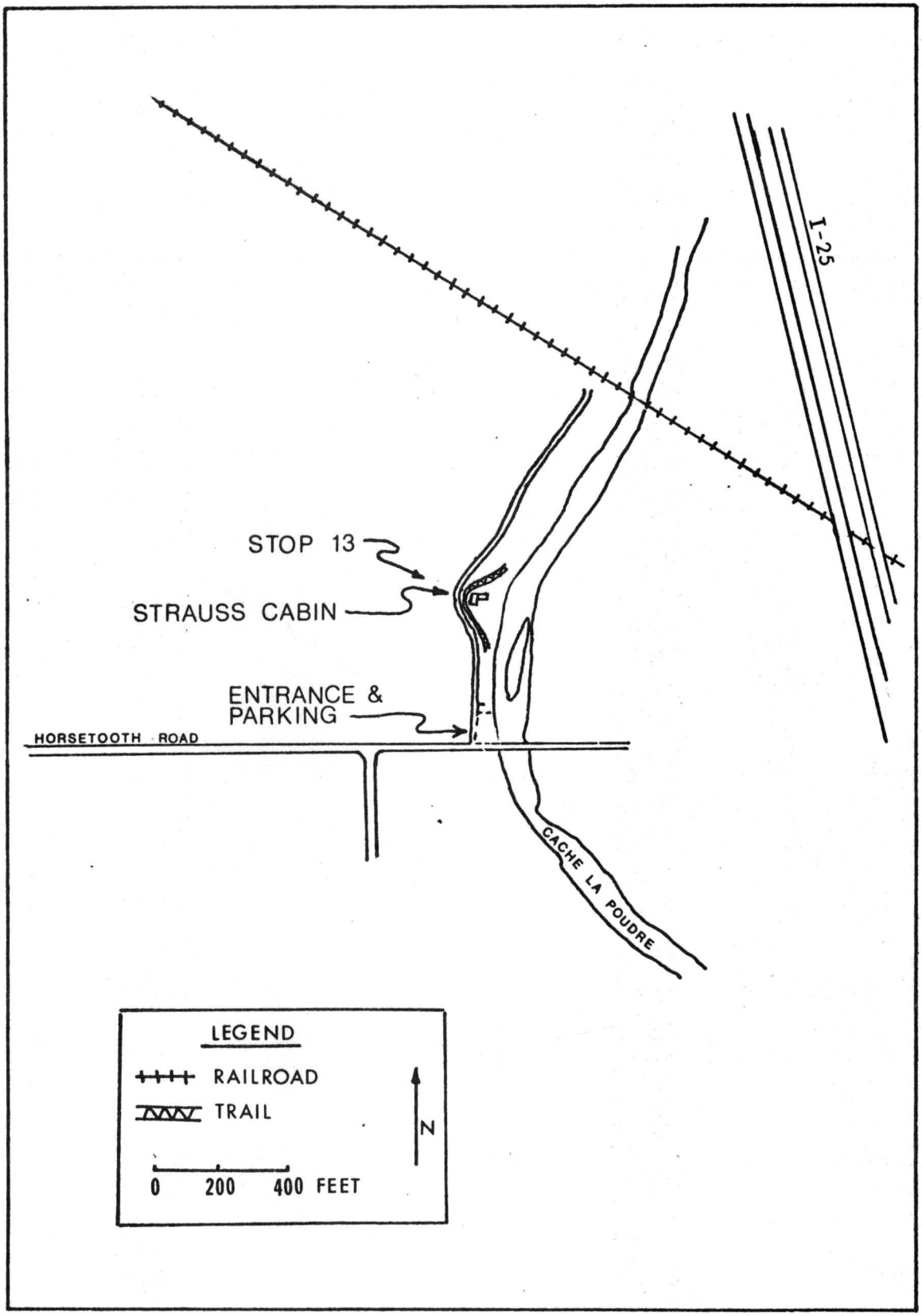

CACHE LA POUDRE
FOSSIL CREEK RES. INLET
C.S.U.
NATURE
CENTER
STOP 12
SEWAGE
TREATMENT
PLANT
LEGEND
TRAIL
N
0 200 400 FEET

Figure 25. Stop 13. Strauss Cabin.

George R. Strauss was one of the earliest settlers of this area coming to the Cache La Poudre Valley in 1860. He had little money, but he took odd jobs and raised vegetables, and later became a prominent member of the community.

This is his cabin built in 1864. Mr. Strauss lived here until 1904 when the river flooded. The flood forced him to flee his cabin. In doing so, he was caught against a fence in the rushing water and later died of exposure.

The exterior of the cabin has not changed much. The original hand hewn logs and square nails can still be seen.


I-25
STOP 13
STRAUSS CABIN
ENTRANCE &
PARKING
HORSETOOTH ROAD
CACHE LA POUDRE
LEGEND
RAILROAD
TRAIL
N
0 200 400 FEET

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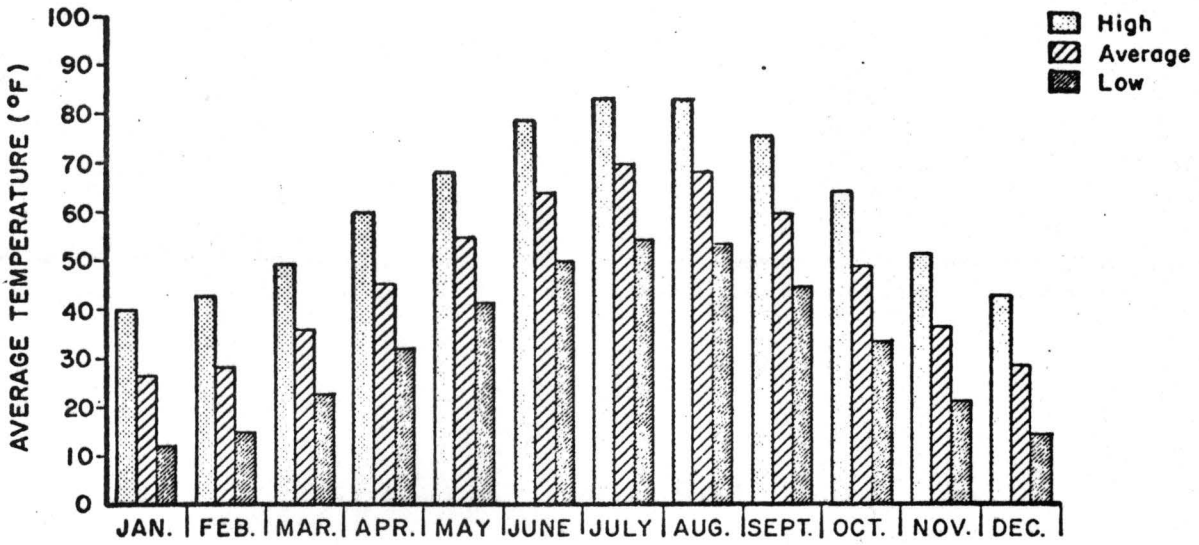
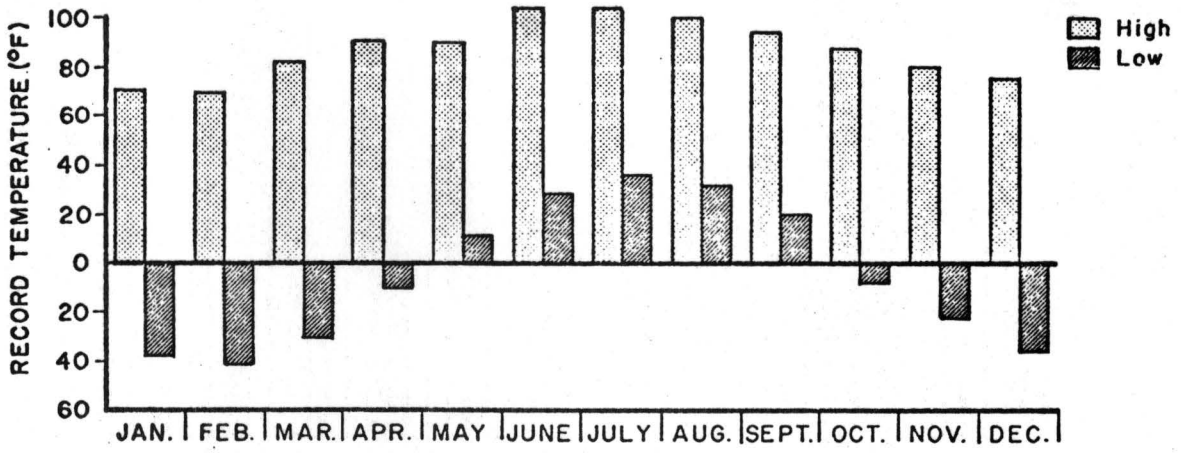
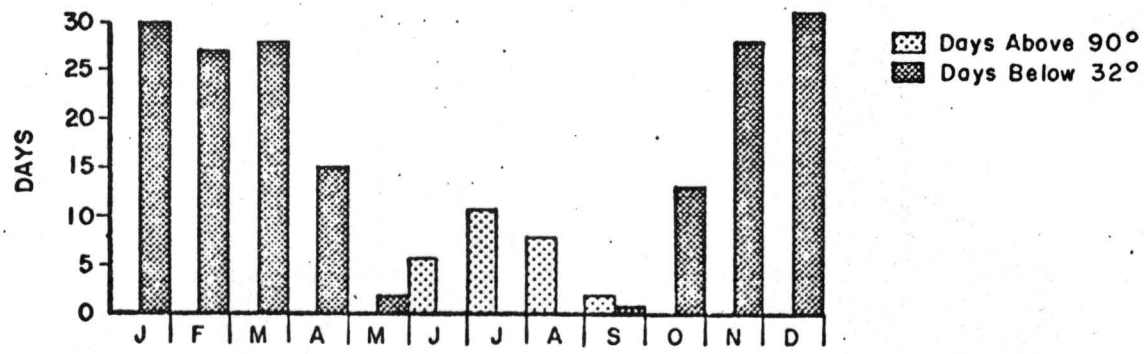
APPENDIX

FORT COLLINS TEMPERATURE DATA





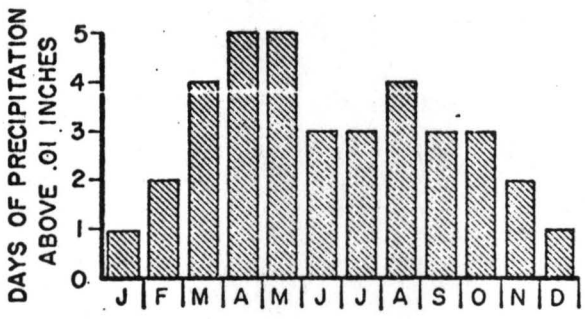


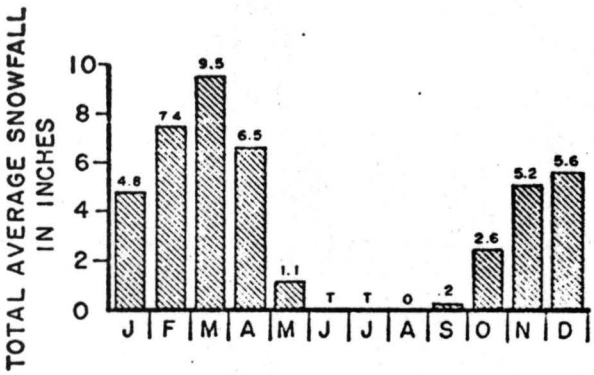
Information Source - US Department of Commerce, National Weather Service

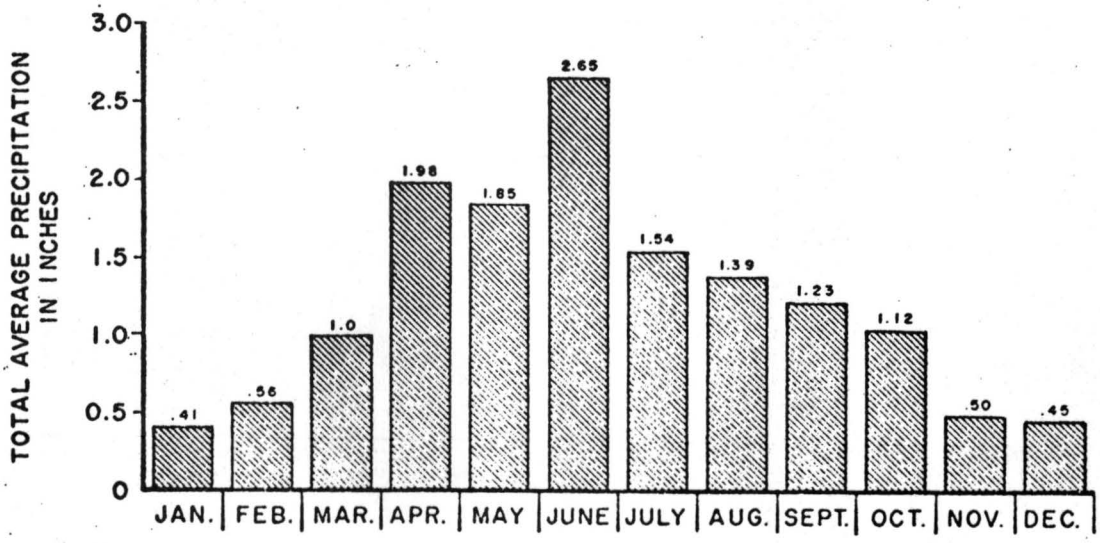
FORT COLLINS WIND DIRECTION AND VELOCITY DATA

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
VELOCITY (M.P.H.)	2.4	1.4	1.4	1.5	1.4	1.1	1.6	1.8	1.4	1.9	1.9	1.9
WIND DIRECTION	SW	SW	SE	SE	SE	SE	S	SE	SE	NW	SW	SW

FORT COLLINS PRECIPITATION DATA

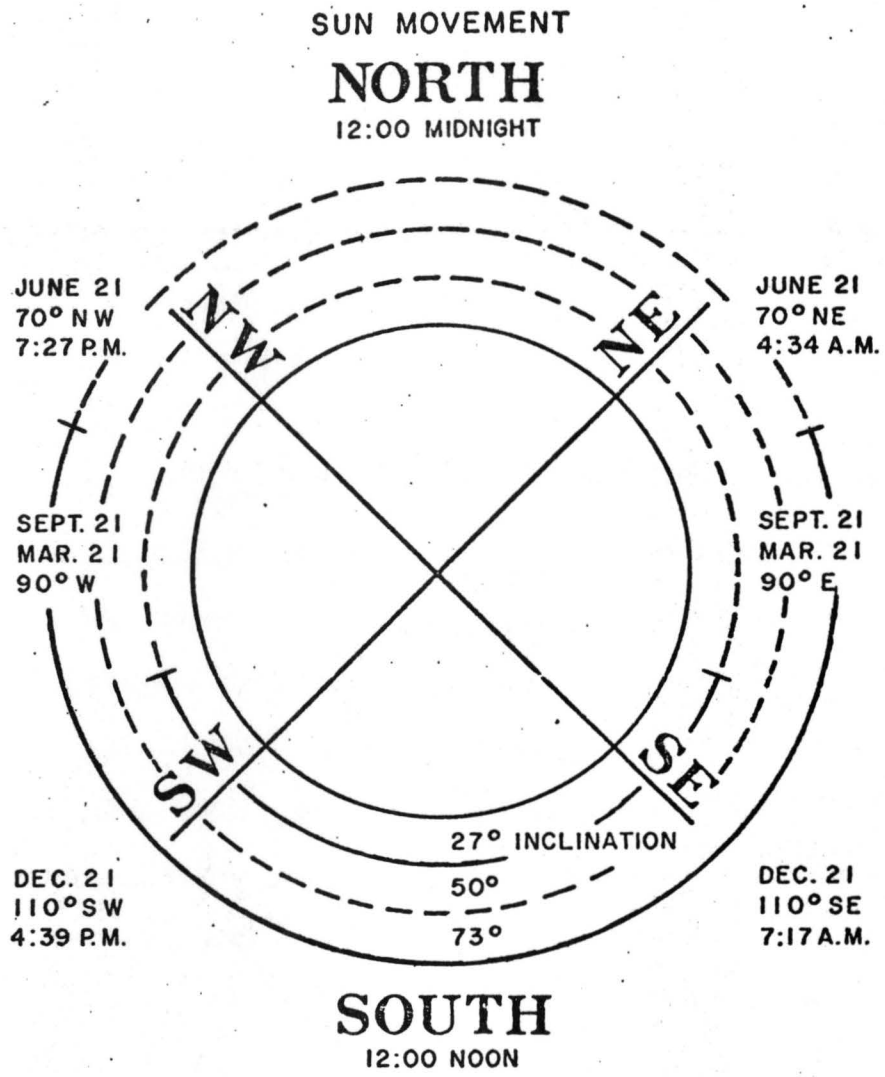


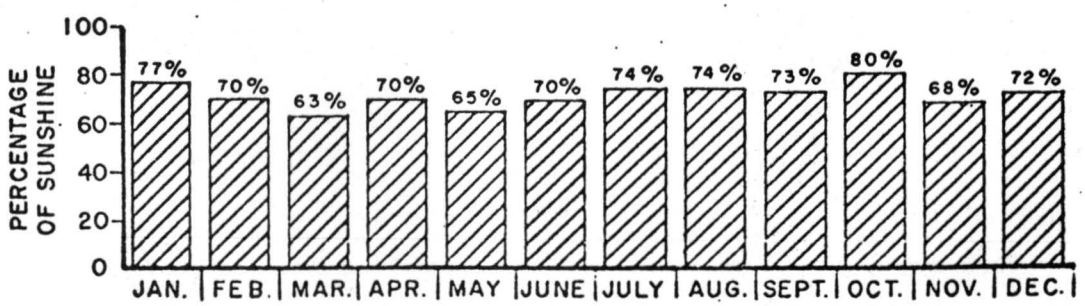




Information Source - US Department of Commerce, National Weather Service

FORT COLLINS SUNSHINE DATA





Information Source - US Department of Commerce, National Weather Service

VEGETATION

Trees

Three types of cottonwoods are found along the Cache La Poudre, plains cottonwood (Populus sargentii), narrowleaf cottonwood (Populus angustifolia), and lanceleaf cottonwood (Populus acuminata). The cottonwood is distinctive because of its seeds which are enclosed in cottony hairs. These hairs which resemble fine cotton allow the seed to be carried by the wind for long distances.

The cottonwoods and other trees along the river are quick growing and not long lasting. Thus, they are suitable to the unstable banks and meandering river. They can tolerate the extreme wetness, often associated with high water in spring, and the dryness at other times.

Other trees of the river bottom include willows, generally peachleaf willow (Salix amygdaloides), box elder (Acer negundo), green ash (Fraxinus pennsylvanica), and thinleaf alder (Alnus tenufolia).

Trees which are not predominate but can be found along the river include Russian olive (Elaeagnus angustifolia), American plum (Prunus americana), chokecherry (Prunus virginiana), hackberry (Celtis occidentalis), water birch (Betula occidentalis), rocky mountain juniper (Juniperus scopulorum) and common apples (Malus pumila) (42:236-244) (3,5,9,16,25,32,37).

In addition to the trees, open meadows, pastures, and marshes abound with a great variety of plant types. A list of commonly observed vegetation identified in Gertler's study follows:

Marsh

Broadleaf cattail--*Typha latifolia*
Narrowleaf cattail--*Typha angustifolia*
Horsetail--*Equisetum avense*
Baltic rush--*Juncus balticus*
Three square bulrush--*Scirpus americana*
Duck potato--*Sagittaria latifolia*
Widgeon grass--*Ruppia maritima*
Pond weed--*Potamageton*
Water cress--*Rorippa nasturtium aquaticum*
Hard stream bulrush--*Scirpus paludosus*
Water smart weed--*Polygonum amphibiun*

Open Areas

Prickly pear cactus--*Opuntia* sp.
Prickly poppy--*Argemone polyanthemos*
Purslane--*Portulaca oleracea*
Fescue--*Festuca* sp.
Blue grass--*Poa* sp.
Cheat grass--*Bromus tectorum*
Stern wheat grass--*Agropyron smithii*

Ground Cover

Burdock--*Arctium minus*
Milkweed--*Asclepeas speciosa*
Mulleen--*Verbascum thapsus*
Stinging nettle--*Urtica dioica*
Curly dock--*Rumex cripus*
Spearmint--*Mentha arvensis*
False solomon's seal--*Smilacina laciniata*
Meadow rue--*Thalictrum fendleri*
Snowberry--*Symphoricapos occidentalis*
Pin cherry--*Prunus pennsylvanica*
Squaw bush--*Rhus trilobata*
Fox grape--*Vitis riparia*
Virginia creeper--*Parthenossis quenquefolia*
Virginia bower--*Clematis liquaticifolia*
Rabbit brush--*Chrysothammus nauseosus*
Solomon's seal--*Smilacina stellata*
Goldenglow--*Rudbeckia laciniata*
Horsemint--*Monarda fistulosa*

Woundwort-- *Stachys palustris*
Wild mint-- *Mentha arvensis*
Selfheal--*Prunella vulgaris*
Catnip-- *Neptia cataria*
Vetch-- *Astragalus leptaleus*
Wavy-leaf thistle--*Cirsium undulatum*
Canada thistle-- *Cirsium arvense*
Bull thistle--*Cirsium vulgare*
Hounds tongue--*Cyoglassum officinalis*

WILDLIFE

Birds

In Colorado, more birds are found along the cottonwoods' riverbottom habitat than in any other type of habitat. Gertler in his study recorded 187 species in his five areas along the Poudre. The following information was taken from his study. The most species were seen during the month of September. Forty species were determined to be nesters along the Poudre. Abundant nesters were house wrens, starling, mourning doves, western wood pewee, yellow warbler, northern oriole, black-billed magpie, and common flicker.

Common permanent residents are the common flicker, downy woodpecker, black-billed magpie, black-capped chickadee, belted kingfish, Canadian geese, killdeer, song sparrows, and starlings.

Winter species include brown creepers, tree sparrows, and dark eye juncos. Severe winters bring Steller's jays, mountain chickadees, white breasted nuthatches, and red breasted nuthatches.

Raptors seen in winter include bald eagles, rough-legged hawks, sharp-shinned hawks, and Cooper's hawks. The great horned owl is common in late winter and early spring.

During spring and fall a great number of species migrate through the area. This is a good time to observe unusual species for this area.

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Great blue heron	X	X	X			X	?	X			
Black-crowned night heron	X	X	X			X		X			
American bittern			X			X			X	X	
Least bittern	X					X					X
Canada goose	X		X	X		X	X		X		
Mallard	X	X	X	X	X	X	X	X			
Pintail	X		X			X				X	
Gadwall	X		X			X			X		
American wigeon	X		X			X				X	
Northern shoveler	X		X			X				X	
Blue-winged teal	X		X		X	X			X		
Cinnamon teal	X	X	X			X			X		
Green-winged teal	X		X	X		X			X		
Redhead	X		X			X				X	
Canvasback	X		X			X				X	
Ring-necked duck	X		X			X				X	
Lesser scaup	X		X			X			X		
Common goldeneye			X	X		X				X	
Bufflehead	X		X	X		X				X	
Common merganser	X	X	X	X			X		X		
Turkey vulture	X	X	X			X				X	
Goshawk				X		X				X	X
Cooper's hawk			X	X		X				X	X

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Sharp-shinned hawk				X		X				X	
Marsh hawk	X	X	X	X					X		
Rough-legged hawk				X		X				X	
Ferruginous hawk	X		X			X				X	
Red-tailed hawk	X	X	X	X			X			X	
Swainson's hawk			X	?		X				X	
Golden eagle			X	X		X				X	
Bald eagle				X		X				X	
Osprey			X			X				X	
Prairie falcon		X	X	X						X	
Peregrine falcon				X		X					X
Merlin				X		X				X	
American kestrel	X	X	X	X	X	X	X	X			
Ring-necked pheasant	X	X	X	X	X		X			X	
Virginia rail	X	X	X		X	X			X		
Sora	X	X	X		X	X			X		
American coot			X			X				X	
American avocet	X	X	X			X			X		
Semipalmated plover			X			X				X	
Killdeer	X	X	X	X	X	X	X	X			
Solitary sandpiper	X		X			X			X		
Spotted sandpiper	X	X	X			X			X		
Willet			X			X				X	

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Greater yellowlegs	X		X			X			X		
Lesser yellowlegs			X			X				X	
Least sandpiper	X					X				X	
American woodcock		X				X					X
Common snipe	X		X	X		X			X		
Herring gull			X	X		X			X		
California gull	X	X	X			X			X		
Ring-billed gull	X	X	X	X		X			X		
Franklin's gull	X	X	X			X		X			
Bonaparte's gull			X			X				X	
Rock dove	X	X	X	X	X		X	X			
Mourning dove	X	X	X		X	X		X			
Great horned owl	X	X	X	X	X		X		X		
Common nighthawk		X			X	X				X	
White-throated swift	X	X	X			X			X		
Broad-tailed hummingbird			X			X				X	
Belted kingfisher	X	X	X	X	X		X		X		
Common flicker	X	X	X	X	X		X	X			
Red-headed woodpecker	X	X	X		X	X			X		
Lewis' woodpecker			X			X				X	
Hairy woodpecker	X		X	X		X				X	
Downy woodpecker	X	X	X	X	X		X		X		
Eastern kingbird	X	X	X		X	X			X		

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Western kingbird	X	X	X		X	X			X		
Western wood pewee	X	X	X		X	X			X		
Olive-sided flycatcher	X		X			X			X		
Horned lark			X	X		X				X	
Barn swallow	X	X	X		X	X		X			
Cliff swallow	X	X	X		X	X			X		
Violet-green swallow	X	X	X			X			X		
Tree swallow			X			X				X	
Bank swallow		X			X	X			X		
Rough-winged swallow	X	X	X			X			X		
Blue jay	X	X	X	X	X		X		X		
Steller's jay				X		X				X	
Black-billed magpie	X	X	X	X	X		X	X			
Common crow	X		X	X	X			X			
Black-capped chickadee	X	X	X	X	X		X	X			
Mountain chickadee				X		X				X	
Dipper				X		X				X	
White-breasted nuthatch				X		X				X	
Brown creeper				X		X		X			
House wren	X	X	X		X	X		X			
Winter wren				X		X				X	
Long-billed marsh wren			X			X				X	
Gray catbird			X			X				X	

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Brown thrasher	X	X	X		X	X				X	
Sage thrasher			X			X					X
American robin	X	X	X	X	X	X	X	X			
Townsend's solitaire			X	X		X				X	
Hermit thrush	X		X			X				X	
Swainson's thrush	X		X			X			X		
Mountain bluebird	X					X				X	
Golden-crowned kinglet	X		X	X		X			X		
Ruby-crowned kinglet	X		X	X		X			X		
Water pipit	X		X			X			X		
Bohemian waxwing	X					X				X	
Cedar waxwing	X			X		X				X	
Northern shrike				X		X				X	
Loggerhead shrike	X	X	X			X				X	
Starling	X	X	X	X	X		X	X			
Solitary vireo			X			X			X		
Bell's vireo			X			X					X
Red-eyed vireo			X			X			X		
Tennessee warbler	X		X			X				X	
Orange-crowned warbler	X		X			X			X		
Nashville warbler			X								X
Yellow warbler	X	X	X		X	X		X			
Magnolia warbler	X		X			X				X	

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Yellow-rumped warbler	X		X			X		X			
Townsend's warbler			X			X				X	
Black-throated blue warbler			X			X					X
Black-throated gray warbler			X			X					X
Common yellowthroat	X	X	X		X	X		X			
MacGillivray's warbler	X		X			X			X		
Wilson's warbler	X		X			X		X			
American redstart	X		X			X				X	
House sparrow	X	X	X	X	X		X	X			
Western meadowlark	X	X	X	X	X		X		X		
Yellow-headed blackbird	X	X	X			X				X	
Red-winged blackbird	X	X	X	X	X	X	X	X			
Brewer's blackbird	X	X	X	X		X		X			
Common grackle	X	X	X		X	X		X			
Brown-headed cowbird	X	X	X		X	X			X	X	
Northern oriole		X	X		X	X			X		
Western tanager	X		X			X			X		
Summer tanager			X			X					X
Rose-breasted grosbeak			X			X					X
Black-headed grosbeak	X		X			X				X	
Evening grosbeak			X			X				X	
Blue grosbeak		X				X				X	
Lazuli bunting	X	X	X		X	X			X		

Common name	Status										
	Spring	Summer	Fall	Winter	Nesting	Migrant	Resident	Abundant	Common	Uncommon	Rare
Purple Finch				X		X					X
Cassin's finch	X			X		X				X	
House finch	X	X	X	X	X		X		X		
Pine siskin	X		X	X		X			X		
American goldfinch	X	X	X	X	X				X		
Lesser goldfinch	X	X	X		X	X				X	
Green-tailed towhee	X		X			X				X	
Rufous-sided towhee	X	X	X	X	X	X			X		
Vesper sparrow			X			X				X	
Lark sparrow	X		X			X				X	
Dark-eyed junco	X		X	X		X		X			
Gray-headed junco	X		X	X		X			X		
Tree sparrow			X					X			
Chipping sparrow	X	X	X			X		X			
Clay-colored sparrow	X					X				X	
Harris' sparrow	X			X		X				X	
White-crowned sparrow	X		X	X		X		X			
White-throated sparrow	X		X	X		X				X	
Fox sparrow			X	X		X				X	
Lincoln's sparrow			X			X				X	
Swamp sparrow				X		X					X
Song sparrow	X	X	X	X	X		X	X			

Insects

A great variety of insects may be found along the Poudre. Some of the more common ones are: mosquitos, dragonflies, damselflies, mayflies, and grasshoppers.

In summer the mosquito will be very noticeable to humans. However, only the female bites, needing the blood for her eggs to develop properly. The male mosquito eats flower nectar and ripe fruit. The female lays her eggs on the surface of the water where the first stages of development, larvae and pupae, are spent. Mosquitoes provide food for many animals including fish, frogs, dragonflies, and swallows. (11:73, 74).

The dragonfly spends most of its adult life airborne. It may catch and eat food, mate and lay eggs in flight. Also, it has an enormous appetite, eating large quantities of mosquitoes, midges, and flies. If imprisoned without food, it will become a self-cannibal eating its tail. The dragonfly lays its eggs by washing them off the tip of its abdomen while flying over water. The nymph lives in water for one to ten years, depending upon species, before emerging to adult life.

The damselfly appears more slender bodied and delicate than the dragonfly. Although the damselfly may mature more quickly, its living habits closely resemble those of the dragonfly. Damselflies may be distinguished from dragonflies by the position of their wings when at rest--a damselfly folds its wings together over its back while a dragonfly holds its outstretched like the wings of an airplane (11:40-47).

Mayflies are another common insect. The nymph stage is spent under water where many are eaten by fish, turtles, and other aquatic insects. When mature, they climb out of the water and molt. The winged adult has no mouth parts and cannot eat. Thus, they live only long enough to mate and drop their eggs in the water. Ironically, after taking nearly three years to develop from nymph to adult, their adult life may be as short as a few hours. (11:87).

Grasshoppers, common to almost any area, have big appetites for plants. Great numbers massed together have caused much damage to crops all over the world. The male courts a female by rubbing the spines of his hind legs against the thickened edges of his front wings. The female lays her eggs in the ground, where the eggs remain all winter and will not hatch unless the ground has been frozen.

There are many other insects too numerous to mention. This large insect population provides food for the numerous birds and animals .

Reptiles and Amphibians

Two snakes are common to the Poudre--the bull and the garter. The bull is a large snake that lives on the flood plain. He has large squarish blotches of black, brown, or reddish brown on his body and tail.

Bull snakes are not poisonous and are very beneficial to man. Their diet consists mostly of small rodents which are pests to farmers. They will also eat squirrels, rabbits, birds, and bird eggs. Generally they kill their prey by constriction (21:163, 164).

Garter snakes are abundant all over North America and there are many species. There are nonpoisonous, brownish or black in color with light stripes. Usually, they live in a moist environment where they feed on earthworms and amphibians, especially frogs and toads (21:236-51).

Rattlesnakes, preferring drier areas, are not common along the river. Nevertheless, they are close by and may be encountered. Rattlesnakes are poisonous, and prey upon small rodents. They are well known for the rattle on the tip of their tail which they shake when nervous or angry. While the rattling sound serves as a warning to intruders, the rattlesnake is deaf and cannot hear its own rattle (21:293).

Other reptiles and amphibians are salamanders, frogs and turtles. Salamanders may be found living in soft moist humus or leaf litter but they return to the water to lay eggs (20:131).

The leopard frog is the most common frog or toad. They live near the water but will travel considerable distances from home over arid terrain in summer. They are green, gray, or brown in color and have rounded dark spots on their body. They eat great quantities of insects and some worms. Eggs are laid in shallow water where the frog will spend the first phase of his life as a tadpole (9:171-85).

Additionally, turtles of various types are found along the river corridor. The snapping turtle is very common. He eats both plants and animals and can often be found buried in the mud.

Fisheries

The fish found along the shady area of the Poudre vary according to the water quality. In the upper reaches above the Ft. Collins' sewage treatment plants, the water is good with high dissolved oxygen content and low dissolved solids. Trout, which can live only in a high quality water area, can be found in the river above Ft. Collins.

However, below the city sewage treatment plants only suckers and carp are present. The sewage input removes dissolved oxygen from the water as it decomposes and also adds particulate matter. These water conditions cannot be tolerated by trout. Only the pollution tolerant species, such as the previously mentioned suckers and carp, can survive.

The fluctuating water level is another factor which limits the amount of fish. In the late summer when water is

constantly being diverted for irrigation the water level drops. As the water level drops the number of fish that can be supported by the stream also declines (44).

Common Mammals

Rabbits. Rabbits, especially the cottontail, are very common. They make their homes in brushy places among the dense weeds. They are mostly nocturnal but often seen in late evening or early morning feeding on their main diet, grasses and shrubs.

Fox Squirrel. Fox squirrels are common in Colorado only along the streams or in the cities where deciduous trees are found. This squirrel depends upon the deciduous trees for food and shelter. In the wild riparian situation, grains (corn and wheat) planted near their dens are a primary food source. Additionally, buds, seeds, fruits, and berries and other important food sources. Their homes are built high in the treelimbs or inside hollow trunks of cottonwoods, willows, and box elders (13:107,108).

Muskrats. Muskrats are aquatic mammals which live in streams, lakes,or ponds. They may live in dens constructed of aquatic vegetation such as cattails and rushes, or they may burrow into the soft mud of the banks to form their living quarters. Entrances are underwater and may begin some distance from the home.

Muskrats are nocturnal but may be seen early mornings or late evenings. They commonly eat roots or aquatic plants but will sometimes eat crops or animal matter.

Raccoons. Raccoons are abundant in moist areas along rivers, lakes and ponds. They are most active at night and not frequently seen. However, evidence of their presence in the form of tracks, which resemble tiny human hands, are easily found in the soft mud or sand along the stream.

The raccoon is an excellent climber and often lives in hollow treetrunks. Holes in the ground, rock crevices, or fallen logs may also serve as its home. The raccoon eats a large variety of foods--plant and animal. Corn, fruits,crayfish, and insects are generally part of its diet (13:183-185) .

Striped Skunks. Skunks live in burrows in the ground which they dig themselves or take from other animals. They are nocturnal animals but may occasionally be seen in daylight hours.

They are omniverous and eat almost anything. Their diet consists mostly of carrion, insects, amphibians, reptiles, birds, eggs, small mammals, and fruits.

They are well known for their scent which they use only for protection from predators, such as a coyote or man (13:200,201).

Deer Mouse. Deer Mice are nocturnal and nest in burrows in the ground, trees, logs, or other protected locations. They eat mostly seeds with some insects and green vegetation. They are very abundant but short lived, being preyed upon by parasites and susceptible to many diseases.

Voles. Voles are rodents that make their home below ground or under roots and debris. They are most active at dusk or night, feeding on green vegetation, seeds, and bark.

Other Mammals

Red Fox. Red Foxes are fairly common but yet are seldom seen since they are generally active at night. Their dens are located in rock crevices, hollow logs, caves, or holes in the ground. In Colorado, they inhabit mountain areas as well as river bottoms. They eat animals and plants including mammals, reptiles, amphibians, birds, insects, worms, berries, and grasses.

Mule Deer and White Tail Deer Deer are not common in the study area although they have been seen in the Northern section. Mule deer are browsers which live on the shoots of shrubs, but will graze on forbes and grasses at certain times of the year. They are nocturnal and spend the day sleeping or resting at the base of a tree, rock, or other protective structures (13:216-217).

White-tail deer are active at night and are very secretive, sneaking quietly through the brush. They are also browsers but will eat some grasses and forbes.

Bats. Bats are commonly seen in the evening sky. They are very interesting, being the only true mammals that fly. However, there are many superstitions surrounding them and Lechleitner states that little is actually known about their habits when compared to the amount of fact known about other mammals.

Bats are most commonly found during the summer in this region. After resting during the day in trees, buildings, caves, or crevices, they become active in the evening when they feed on insects.

Bats navigate by their own type of radar. They emit supersonic cries and listen for echoes reflecting off of solid objects. The pattern of the echoes indicates their surroundings to them and distances (13:47,48).

Shrews. Shrews are little animals which spend their lives in shallow tunnels under the ground where they are active anytime during the day and any season of the year. They eat any animal matter, but insects and worms are their most common food. Their life span is only about one year. Although they are known to exist and are common, the only evidence of the shrew is an occasionaly runway or tunnel (13:35,44,45).

Pocket Gopher. Pocket gophers are medium sized rodents that spend the majority of their time in tunnels underground. They eat a wide variety of plants, the above ground part of the plant making up about 70 percent of their diet. They are the prey of foxes, skunks, owls,and hawks.