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# SWEETWATER WILD AND SCENIC RIVER STUDY REPORT

U. S. DEPARTMENT OF THE INTERIOR
Heritage Conservation and Recreation Service
Mid-Continent Region

March 1978

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has major responsibility for American Indian reservation communities and for people who live in Island Territories under United States administration.


Department of the Interior
*Cecil D. Andrus, Secretary*

Heritage Conservation and Recreation Service
*Chris T. Delaporte, Director*

This report was prepared pursuant to Public Law 90-542, the National Wild and Scenic Rivers Act. Publication of the findings herein should not be construed as representing either the approval or disapproval of the Secretary of the Interior. This report provides information for further consideration by the Heritage Conservation and Recreation Service, the Secretary of the Interior, other Federal and State agencies, and the public.

March 1978

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### Findings

In accordance with criteria set forth in the Wild and Scenic Rivers Act and in the U. S. Department of the Interior/U. S. Department of Agriculture "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas . . .," the 9.5-mile (15.3-km) segment of the Sweetwater River from Wilson Bar downstream to Spring Creek was determined to be ineligible for inclusion in the National Wild and Scenic Rivers System because of its failure to meet the minimum length criterion of 25 miles.

However, the study team found the segment possesses outstandingly remarkable historic and excellent fish and wildlife values and is therefore worthy of protection and preservation.

### Recommendations

Based on the above findings, the Sweetwater River from Wilson Bar downstream to Spring Creek is not recommended for designation as a component of the National Wild and Scenic Rivers System at this time.

Should a contiguous portion of the river be studied, found eligible, and recommended for inclusion, this segment would qualify as a "wild" river and is recommended for inclusion as such.[1]

Protection is recommended for the existing values of the Sweetwater Canyon by management as an "Outstanding Natural Area" by the Bureau of Land Management.

[1]See page I-5.

# CHAPTER I

# INTRODUCTION

## A. BACKGROUND

This report was prepared under the authority of the Wild and Scenic Rivers Act, P. L. 90-542, dated October 2, 1968. The Act preserves "certain selected rivers" that "possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values . . . in their free-flowing condition . . . for the benefit and enjoyment of present and future generations."

The Act named eight rivers as initial components of the National Wild and Scenic Rivers System. Twenty-seven others were listed as potential additions, and a procedure was framed for assessing their eligibility.

The Act defines three possible classifications for eligible rivers - wild, scenic, and recreational - and requires that consideration be given in the study report to land acquisition, right and use of occupancy, water resource developments, mining, and administration.

Since its passage, the Act has been amended six times. Seven more river segments have been added to the National System through Congressional action, and five others were added as State-administered components. Thirty-one have been added to the list of potential candidates, and procedures for evaluation were refined in 1970 by the joint USDI/USDA "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas Proposed for Inclusion in the National Wild and Scenic Rivers System under Section 2, Public Law 90-542." Figure I-1 shows the components of the National Wild and Scenic Rivers System.

One of the amendments, P. L. 93-621, dated January 3, 1975, listed 29 new "study rivers" in section 5(a). Among these was "(51) Sweetwater, Wyoming: The segment from Wilson Bar downstream to Spring Creek." The location is shown in figure I-2.

## B. THE STUDY

In February 1977, an interagency team was formed to conduct the Sweetwater River study. The Bureau of Outdoor Recreation led the study, and the Bureau of Land Management (BLM), as the principal land-management agency, contributed much data and shared an equal role in the decisionmaking process. Several other Federal and State agencies made significant contributions; a list of contributors appears in appendix A.

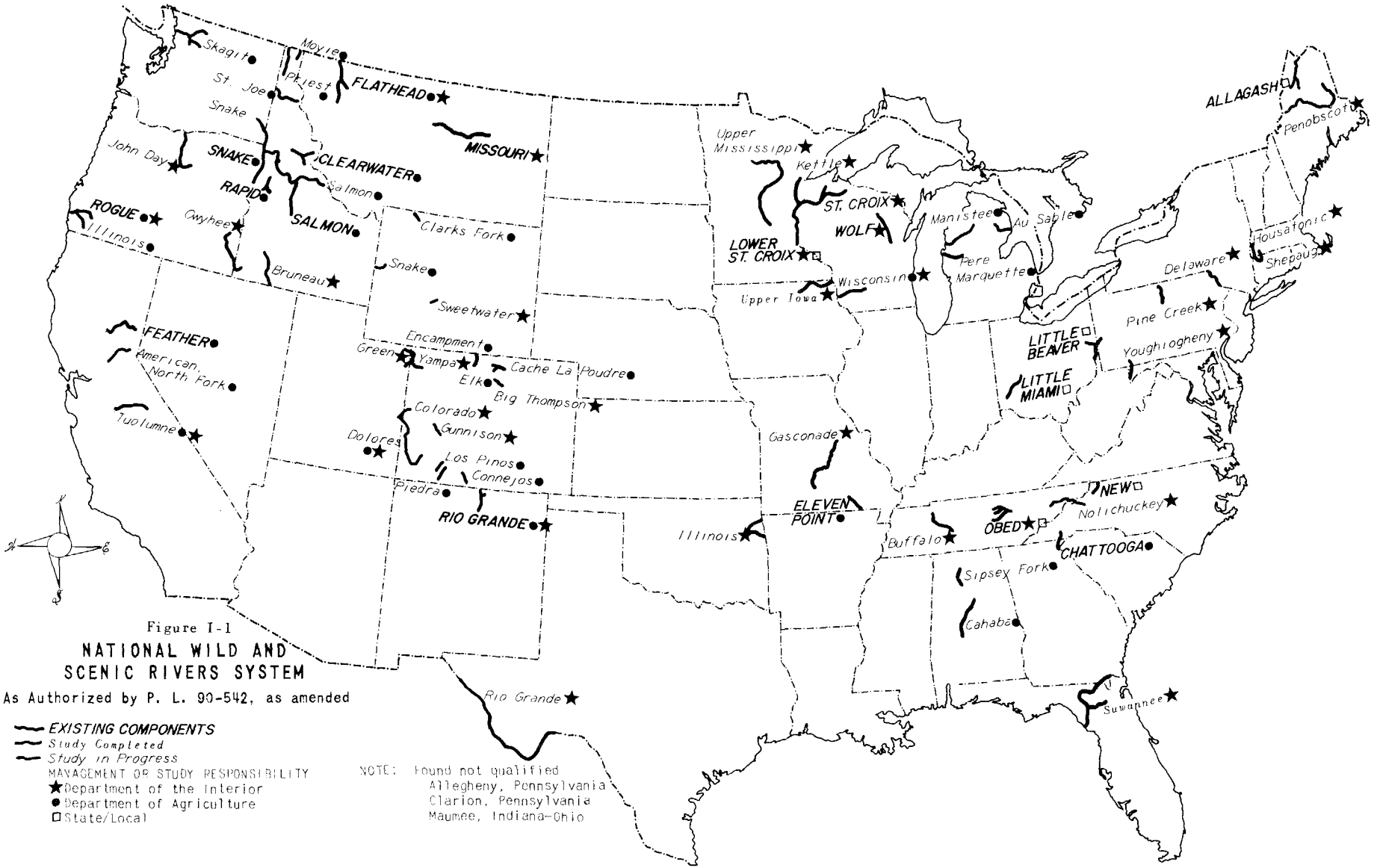



Figure I-1

## NATIONAL WILD AND SCENIC RIVERS SYSTEM

As Authorized by P. L. 90-542, as amended

*EXISTING COMPONENTS*
*Study Completed*
*Study in Progress*

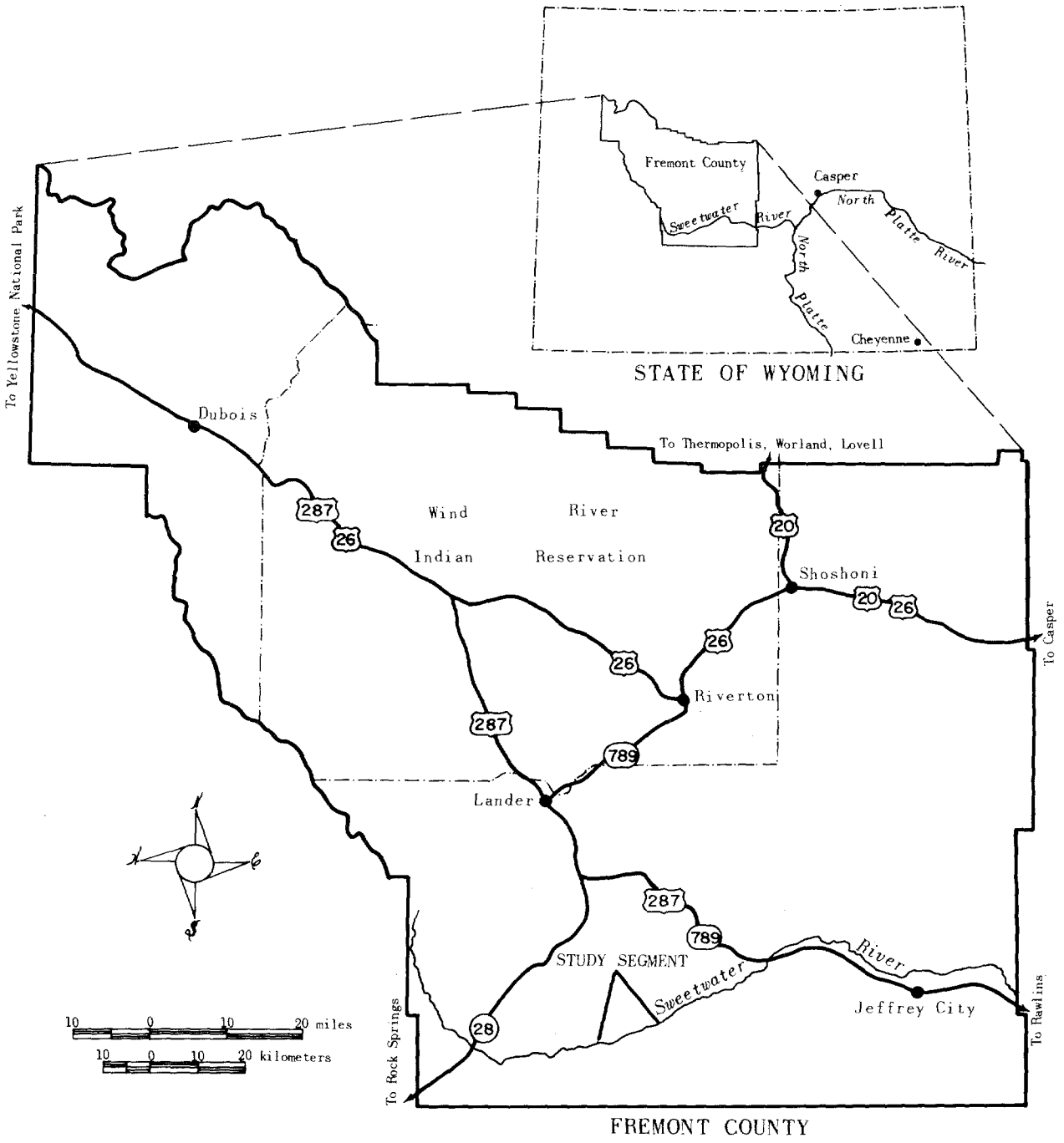
MANAGEMENT OR STUDY RESPONSIBILITY
★Department of the Interior
●Department of Agriculture
□State/Local

NOTE: Found not qualified
Allegheny, Pennsylvania
Clarion, Pennsylvania
Maumee, Indiana-Ohio

Figure I-2

SWEETWATER WILD AND SCENIC RIVER STUDY
FREMONT COUNTY, WYOMING

Study Area



The study proceeded in five basic phases:

Collection of Study Data. The team used existing data to full advantage, especially the BLM proposal for a "Natural Area" withdrawal for the Sweetwater Canyon area. The study region was Fremont County, Wyoming; the river corridor was generally the adjacent land within the line of sight or 1/4 mile on either side, whichever was least. Data were provided by Federal, State, and local agencies, citizen groups, and individuals.

The development of new data and a detailed inspection of the river were also required. The Sweetwater River was examined on foot, by motor vehicle, and from the air.

The basic information gathered on Fremont County and the Sweetwater River is presented in chapters II and III.

Determination of Eligibility. The Sweetwater River study segment was evaluated to determine its eligibility for inclusion in the National Wild and Scenic Rivers System. Direction for this phase was found in the Wild and Scenic Rivers Act and supplemented in "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas . . . ."

A two-step process for determining eligibility was used:

1) the study segment was evaluated for inclusion in the National System using the data presented in chapter III; and

2) all input from the public, including information obtained in letters and interviews, was utilized by the interagency team to review its eligibility determination.

Classification. Even though ineligible because of length, the river was found to be eligible in all other respects. The administration recently proposed a study of the remainder of the Sweetwater River upstream from Wilson Bar, which, if found eligible, could also render the current study segment eligible. Therefore, the classification criteria set forth in the Act and the Guidelines were applied to the study segment so that in the event it should become eligible, the classification process would be complete.

The results of the eligibility and classification determinations are presented in detail in chapter IV, "Eligibility and Classification."

Public Involvement. Public involvement and input were solicited through the BLM Rawlins District Advisory Board, talks to various other groups, news releases, interviews, and public information packets.

Most of the people who responded to the findings advocated maximum wild and scenic river designation and supported the President's proposal that the study be done on the entire river upstream from Wilson Bar.[1]

Conclusions and Recommendations. The final step was evaluation of data, public response, and selection criteria. The findings and recommendations presented at the beginning of the report and in chapter VI are the results of this evaluation.

[1]At the direction of the President, the Secretary of the Interior submitted proposed legislation to the Congress on May 26, 1977. This proposal would amend the Wild and Scenic Rivers Act by designating 46 miles of the Sweetwater River from its source downstream to Wilson Bar for study as a potential addition to the national system.

# CHAPTER II

# REGIONAL SETTING

## A. INTRODUCTION

For the purpose of this study, the region was defined as Fremont County, Wyoming. Information was derived from several sources: the 1975 Wyoming Statewide Comprehensive Outdoor Recreation Plan, the Bureau of Land Management's Moneta and Sweetwater Unit Resource Analysis and Management Framework Plans, Bureau of Land Management central files, various Fremont County planning documents, and input from numerous Federal and State agencies and private organizations and individuals.

## B. LANDSCAPE

### Location and Size

Fremont County is centrally located in Wyoming as shown in figure II-1. It covers about 9,200 square miles (24,000 $km^2$) or nearly 10 percent of the total land area of Wyoming and is approximately equivalent in size to the State of Vermont. It is the second largest county in Wyoming in land area and one of the largest in the country.

### General Landform

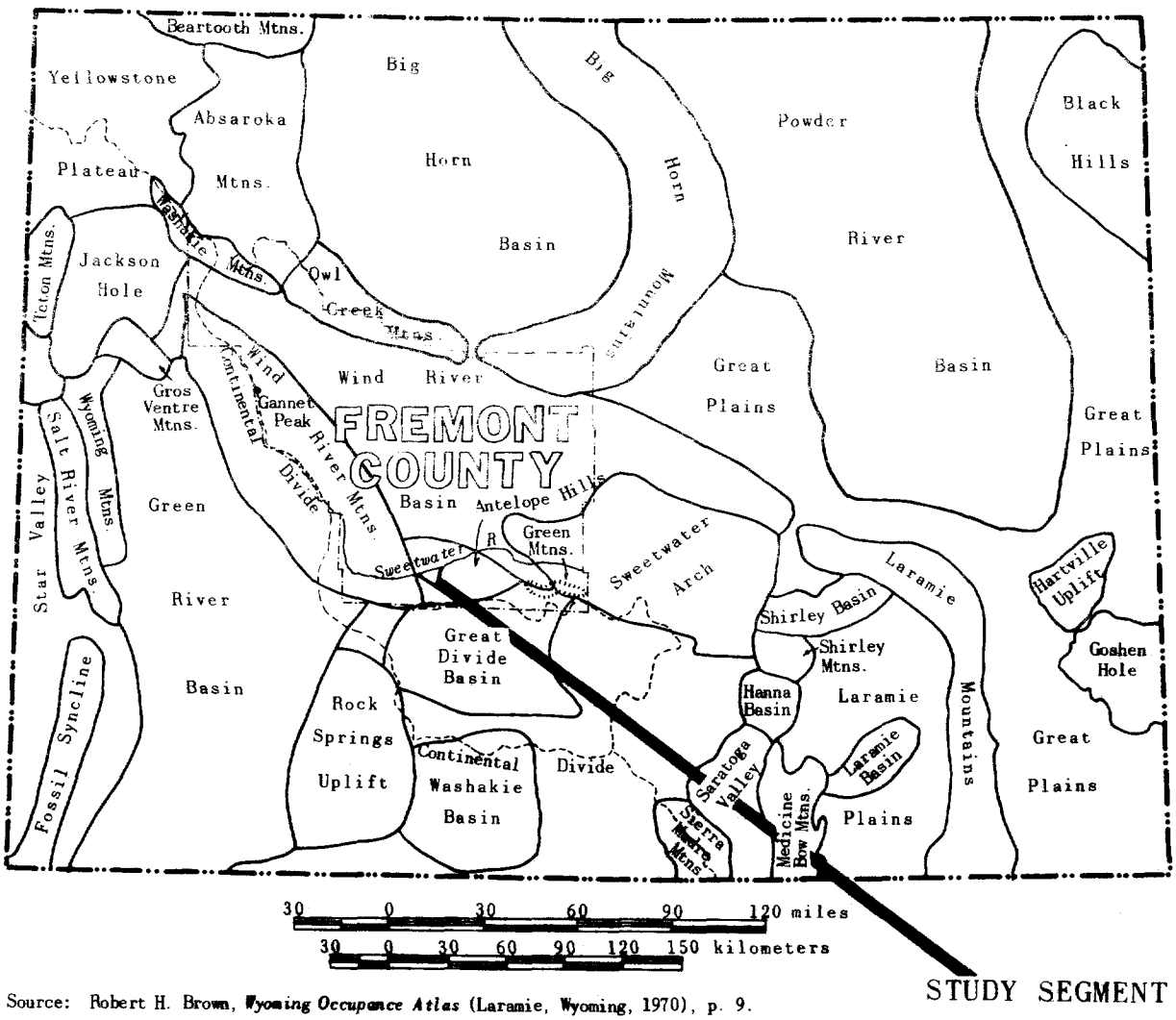
Fremont County is bounded on the west by the Wind River Range, which forms part of the Continental Divide. The southern and southeastern portions of the county contain a variety of topographic features, including high plains, buttes, points, large rock outcroppings, and mountains; e.g., Antelope Hills, the Great Divide Basin, and the Green Mountains, as shown in figure II-1. The northcentral portion of the county is flatter, and the eastern margin is a mixed grouping of lesser foothills, mountains, valleys, and flatlands. The northern and northwestern parts of the county are characterized by high, jagged mountain peaks and high mountain meadows.

The mountains surrounding the county have peaks reaching 13,000 feet (4,000 m) in elevation and contain great living glaciers. Gannett Peak, highest point in Wyoming at 13,783 feet (4,301 m), is located within this mountain range. These high mountains present a sharp contrast to the central part of Fremont County where the terrain slopes off to form a large basin floor with elevations between 4,500 and 6,000 feet (1,370 and 1,830 m). The elevation difference between the highest and lowest points within the county is nearly 9,000 feet (2,750 m).

Figure II-1

# SWEETWATER WILD AND SCENIC RIVER STUDY

## Wyoming Topographic Features




Source: Robert H. Brown, ***Wyoming Occupance Atlas*** (Laramie, Wyoming, 1970), p. 9.

## C. CLIMATE

Fremont County, due to the variation of elevation and surface features, exhibits a wide range of temperature and precipitation. Excluding the high mountain areas, the county has a semiarid climate with hot summers, cold winters, and an erratic precipitation of 10-20 inches (25-31 cm) annually, as shown in figures II-2 and II-3.

Wide daily and seasonal variations in temperature, low humidities, and high evaporation rates are characteristic of the area. Temperatures can range from as high as 100°F (38°C) in summer to -40°F (-40°C) in winter. Much of the annual precipitation falls as snow, usually from October through May. The frost-free growing season ranges from 2 to 4 months, decreasing in length with an increase in elevation.

December, January, and February are generally the coldest months, with the mean temperature for each below freezing. Snowstorms which occur during these months produce a snow cover of long duration, often lasting from late fall through spring.

In spring (March, April, and May), the county gets its heaviest snowstorms with the most snow in April. Wind speed, widely variable due to geographical location, elevation, and topography, is highest in the spring. The wind usually blows from the southwest throughout the year.

The typical summer weather pattern consists of cool, clear mornings followed by a cloud buildup in the early afternoon. The clouds are sometimes accompanied by widely scattered thundershowers which bring needed precipitation during this characteristically hot, dry period.

September and October bring dry, sunny days and clear, chilly nights. Periods of Indian summer days may be interspersed with cold spells. Maximum daily temperatures during these months are between 60°F (16°C) and 73°F (23°C).

November marks the onset of winter with snow flurries or light snows likely. The temperature often drops to freezing or below. Although the maximum daily temperature may occasionally reach 50°F (10°C) or 60°F (16°C), the mean is about 43°F (6°C).

The average annual wind speed at Riverton is 12 miles per hour (mph) (19 kilometers per hour; kph), and the Lander weather station reports an average wind speed of 7 mph (11 kph), one of the lowest in the nation. High wind speeds and cool to cold air temperatures sometimes combine to produce harsh weather conditions which can cause frostbite or hypothermia.

Figure II-2

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING

## Average Temperature (Degrees above zero Fahrenheit)

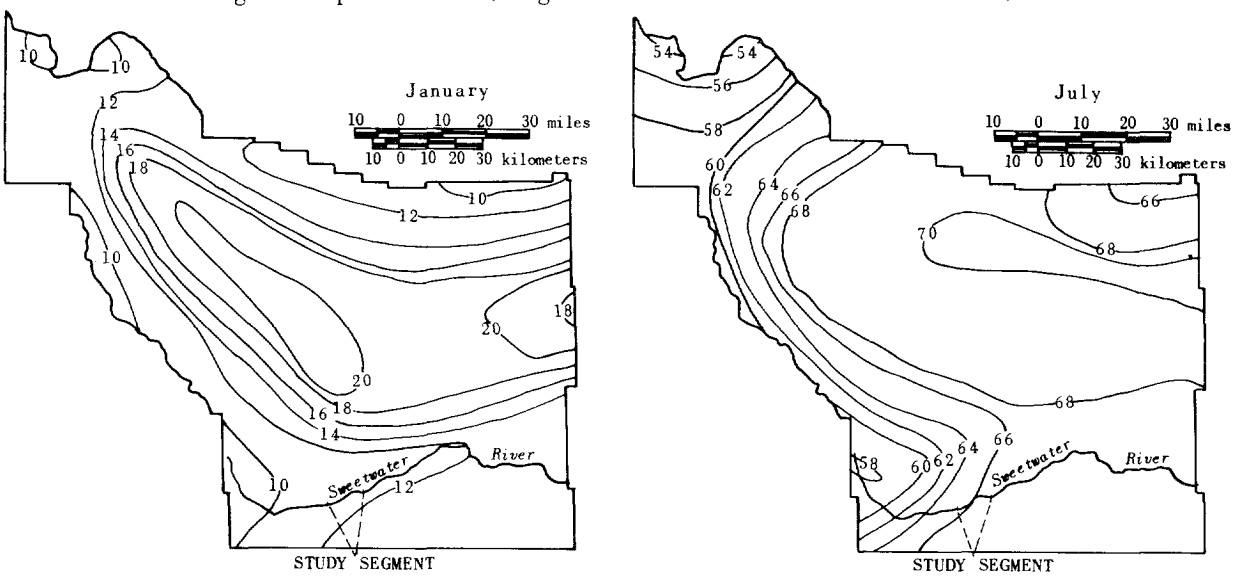
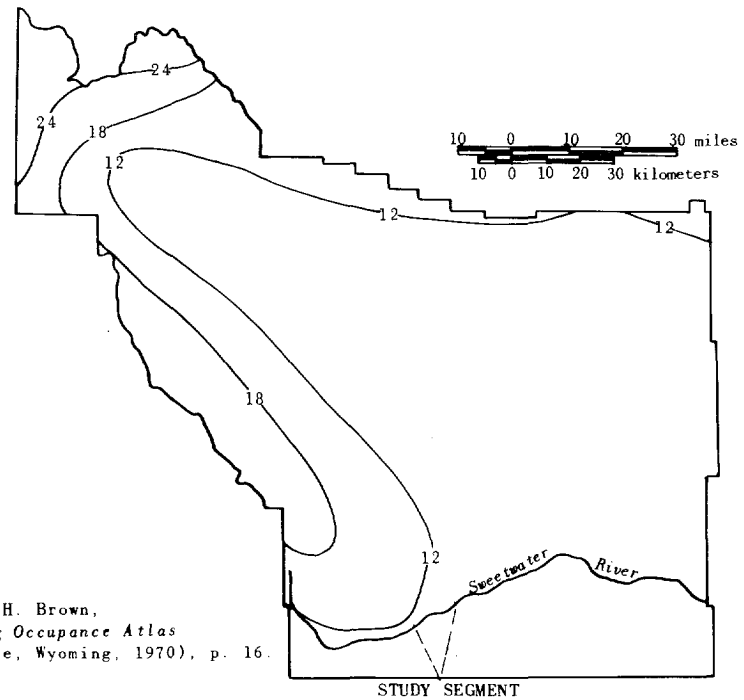



Figure II-3

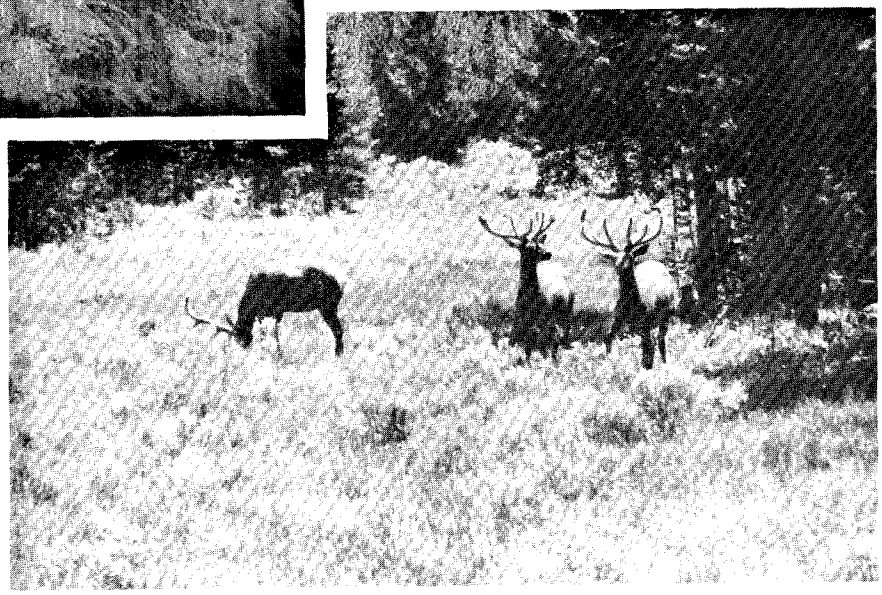
## Average Precipitation (inches per year)




SOURCES: Robert H. Brown,
*Wyoming Occupance Atlas*
(Laramie, Wyoming, 1970), p. 16.

Wild Horse Point Overlook in the Green Mountains.

An aerial view of the Sweetwater River with the Wind River Mountains in the background.



Large game such as these elk are abundant in Fremont County.

D. SOILS

Throughout Fremont County are portions of 20 major soil associations. These range from dark-colored soils and rock outcrops in the alpine region to grey-brown soils in the dry basin areas. The general discussion on soils that follows is based on a very broad survey. Figure II-4 defines the location and components of these soil units. The 20 soil associations are divided into two groups of mountain soils and two groups of basin soils as follows:

Mountain Soils

Soil associations 1-6 are dark- and light-colored moist soils of the high mountains. The topography varies from steep to sloping or rolling, and the soils are developing in residuum and transported materials from igneous, metamorphic, and sedimentary bedrocks. Some soils are developing in gravelly, cobbly, and stony glacial moraines and outwash. Vegetation is predominantly forest but includes grass-shrub parks. Logging, grazing, recreation, and wildlife habitat are the principal uses. These soils are present in the mountainous areas in the western and northwestern portions of Fremont County and in the northeastern corner.

Dark-colored soils of the mountains and valleys as represented by soil associations 7 and 8 are moist in some parts during the summer and are developing in residuum and transported materials from igneous and sedimentary bedrocks. Vegetation is predominantly grass-shrub and scattered patches of timber, with grazing and wildlife habitat as the principal uses. These soils are restricted to northeastern and southwestern areas of the county.

Basin Soils

Soil associations 9-16 are dominantly light-colored in basins, terraces, and fans and are usually dry but may be moist in some parts during the summer. Soil topography ranges from nearly level to steep, rolling, or undulating, and supports grass-shrubs as the predominant vegetation. The soils are developing in alluvium on stream terraces, alluvial fans, and flood plains or in residuum from soft sandstone, shale, or saltstone bedrock uplands, or glacial till on rolling moraines. Irrigated hayland and pasture, grazing, and wildlife habitat are the principal uses. The largest category, these soils extend throughout all but the northeastern corner of the county.

The dominantly light-colored soils of associations 17-20 are located in level to undulating basins, terraces, and fans which are usually dry. These soils are developing in alluvium wind-laid sands and residuum on alluvial fans, stream terraces, and bedrock-controlled uplands. Vegetation is grass-shrub; grazing, irrigated cropland, and wildlife habitat are the principal uses. These soils are present only in the northeastern portion of the county.

Figure II-4

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING

## Soil Associations

SOILS OF THE MOUNTAINS AND MOUNTAIN VALLEYS

Subgroup 1

1 Cryoborolls-Cryoboralfs association
2 Rock Outcrop-Cryoboralfs-Cryoborolls association
3 Cryoborolls-Rock Outcrop association
4 Cryochrepts-Cryumbrepts association
5 Cryoboralfs-Cryoborolls-Rock Outcrop association
6 Cryoboralfs, stony-Cryoborolls, stony association

Subgroup 2

7 Haploborolls-Argiborolls-Rock Outcrop association
8 Haploborolls, shallow association

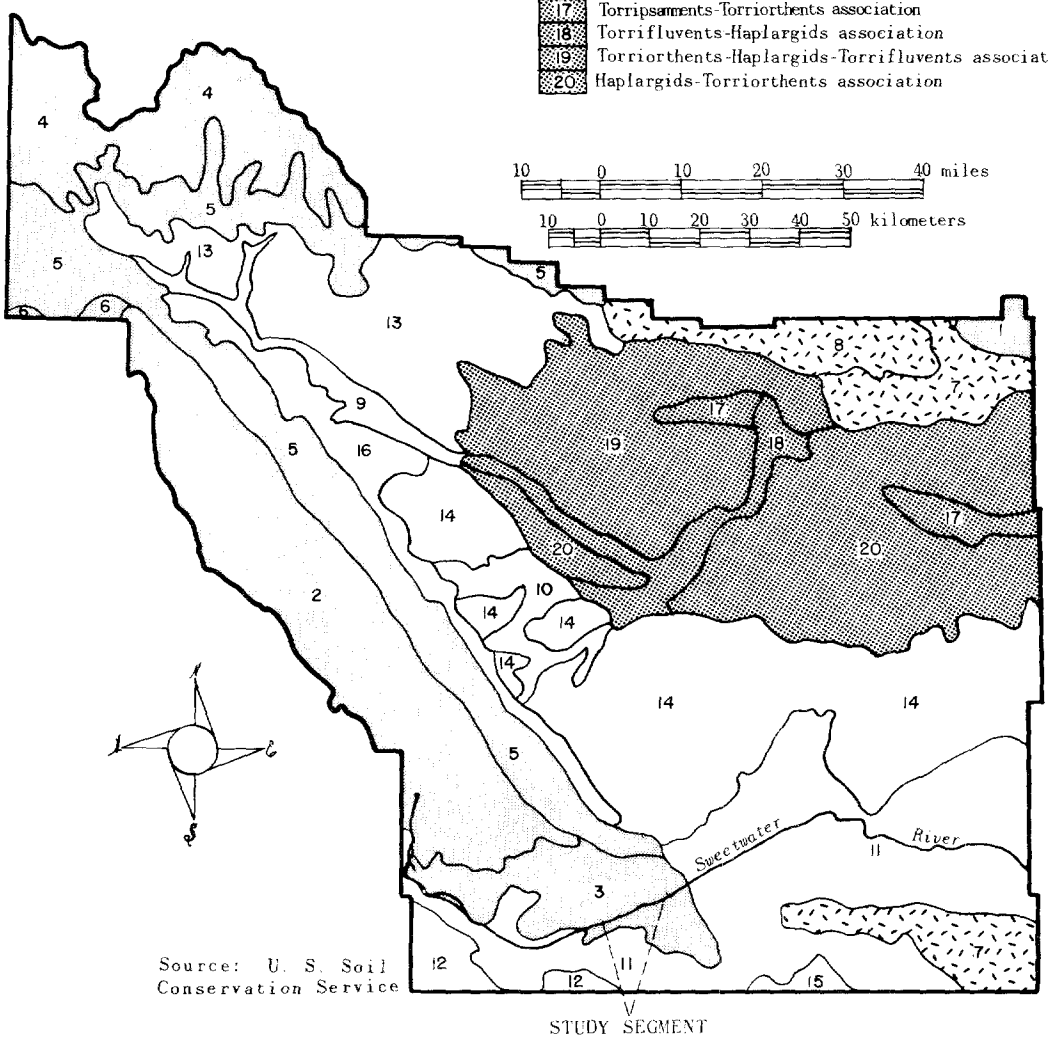
SOILS OF THE INTERMOUNTAIN BASINS AND FOOTHILLS

Subgroup 1

9 Haplargids-Haploborolls association
10 Haplargids association
11 Torriorthents-Haplargids-Rock Outcrop association
12 Torriorthents-Haplargids-Natrargids association
13 Torriorthents, shallow association
14 Haplargids-Torriorthents association
15 Torriorthents-Camborthids-Haplargids association
16 Torriorthents association

Subgroup 2

17 Torripsamments-Torriorthents association
18 Torrifluvents-Haplargids association
19 Torriorthents-Haplargids-Torrifluvents association
20 Haplargids-Torriorthents association




Source: U. S. Soil Conservation Service

## E. VEGETATION

Four main vegetation patterns predominate. The first includes barren ground supporting primitive plant climaxes, tundra, bare rock, and glacial ice in the high mountain areas, plus barren, shifting sand dunes, especially in the southern lowland desert areas. The second vegetative pattern consists of natural forest cover, primarily on mountain slopes and along streams. Dry basin forage areas, with a combination of grasses and desert scrub, cover well over half of Fremont County, as indicated in figure II-5. Agricultural land under irrigation is the fourth vegetative pattern.

The barren ground class varies the most widely and is probably the least important from an economic standpoint. Natural forested areas include unmixed stands of conifer trees (including dwarf pine at higher elevations), mixtures of conifer and deciduous trees in some locations, and pure stands of deciduous trees along lowland streams. Marketable timber covers a relatively small portion of the county, primarily in the northwest.

Brush and desert scrub predominate in nonirrigated lowland forage areas in the drier southern and eastern parts of the county, with grass predominating on the fringes of the high mountain areas. Agricultural crops and pasture are irrigated extensively where water is available. Soils, degree of slope, availability of moisture, temperature, catastrophic natural forces, and man's agricultural needs combine to produce everchanging vegetation patterns.

A list of plants known or thought to exist in Fremont County is included in appendix C. Included are five species under review or proposed for possible threatened or endangered species status.

## F. FISH AND WILDLIFE

Fish and wildlife are important resources, prized for their recreational, aesthetic, and economic values. Game species include both warm and cold water fish, waterfowl, small birds, and large and small mammals. Nongame species include fish, various fowl, small mammals, predators, and carrion eaters.

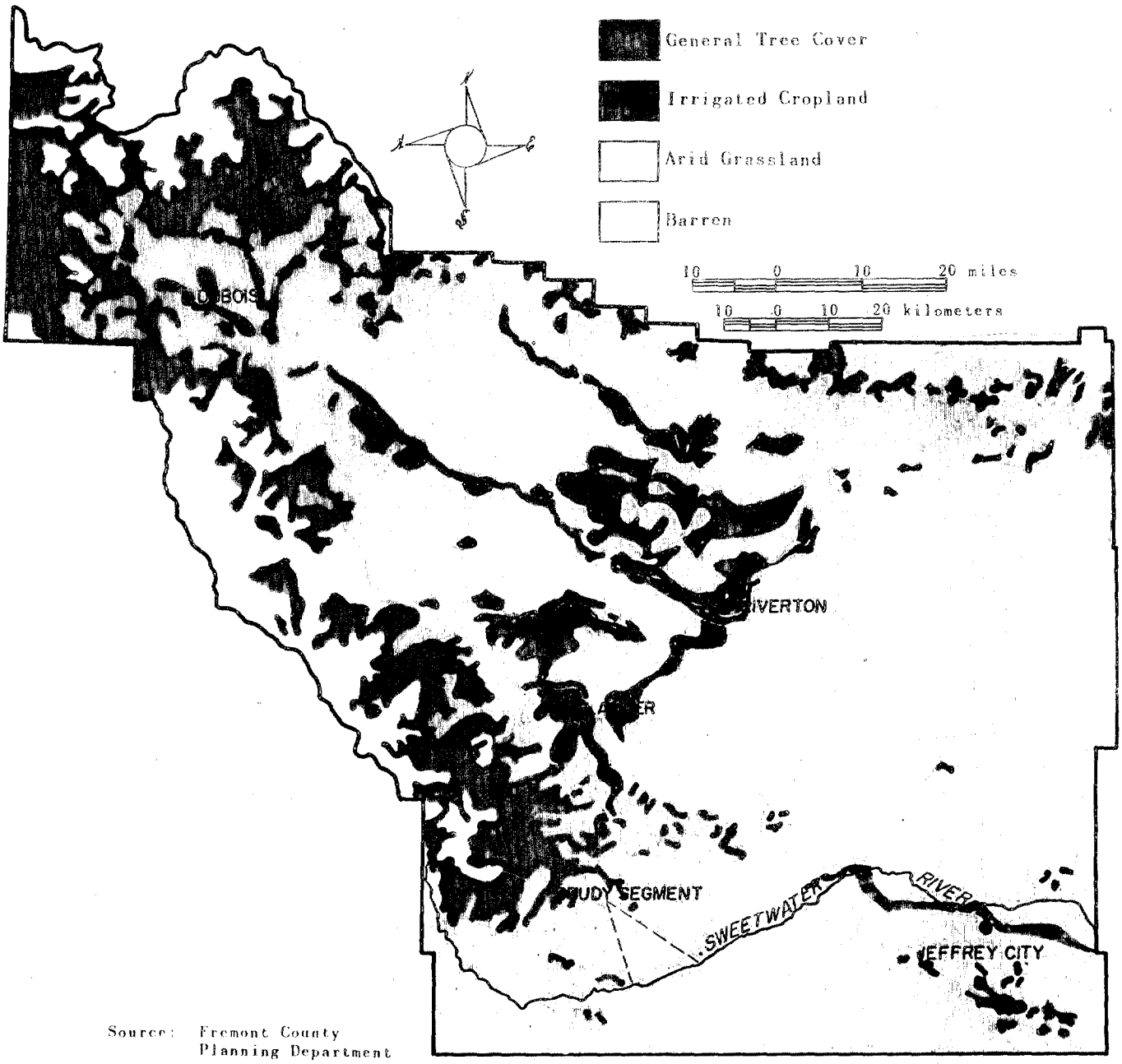
Species of trout include golden, cutthroat, rainbow, brown, brook, mackinaw, and splake. Warm water game fish are walleye, sauger, largemouth bass, black crappie, bluegill, channel catfish, stonecat, black bullhead, and yellow perch. Other species of fish are grayling, whitefish, and ling or burbot.

There are no threatened or endangered fish species known to inhabit Fremont County waters.

Figure II-5

# SWEETWATER WILD AND SCENIC RIVER STUDY
## FREMONT COUNTY, WYOMING

### Vegetation




Source: Fremont County
Planning Department

Sparrows, goldfinches, buntings, bluebirds, jays, blackbirds, ravens, and many other bird species are seen. Golden eagles, prairie falcons, great-horned owls, and red-tailed hawks, along with approximately 25 other species of birds of prey, dwell here as well. Canada geese, mallards, pintails, redheads, loons, and great blue herons are some of the approximately 30 species of waterbirds and waterfowl known to inhabit the county.

Sage grouse are common throughout the plains area, and chukar and Hungarian partridge are present throughout most of the central and northern portions. Pheasants inhabit irrigated cropland near Riverton. Blue and ruffed grouse dwell in parts of the Wind River and Absaroka Mountains.

Many small mammals such as the coyote, bobcat, mink, weasel, skunk, ground squirrel, beaver, muskrat, cottontail rabbit, jack rabbit, and prairie dog inhabit the county.

Indigenous large mammals include the pronghorn antelope, white-tailed deer, mule deer, elk, moose, bighorn sheep, and black bear. Selected big game ranges are shown in figure II-6.

Game animal and upland bird populations and annual hunting harvests are shown in table II-1.

Threatened or endangered wildlife species known or suspected to live in the county are the grizzly bear, black-footed ferret, American peregrine falcon, northern Rocky Mountain wolf, and bald eagle.

## G. WATER RESOURCES

Fremont County straddles the Continental Divide and encompasses lands which drain into several major river basins as shown in Figure II-1. A small part of the southwestern corner drains into the Green River, a tributary of the Colorado River, and part of the southern edge is drained by ephermeral and intermittent streams into the Great Divide basin (a closed basin). The major portion of surface water drains into the Sweetwater and Wind Rivers, both tributaries of the Missouri River System.

The county's contribution of surface water to the Snake River, Green River, and Great Divide basins is minimal. However, about 1,000,000 acre feet (1.23 billion $m^3$) annually flows from the Wind River, and according to U. S. Geological Survey readings taken at the Sweetwater River near Alcova, Wyoming, for water years 1914 to 1924 and 1939 to 1973, an average of about 91,000 acre feet (112 million $m^3$) flows from the Sweetwater River, as shown in figure II-7.

Figure II-6

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING

## Selected Big Game Ranges

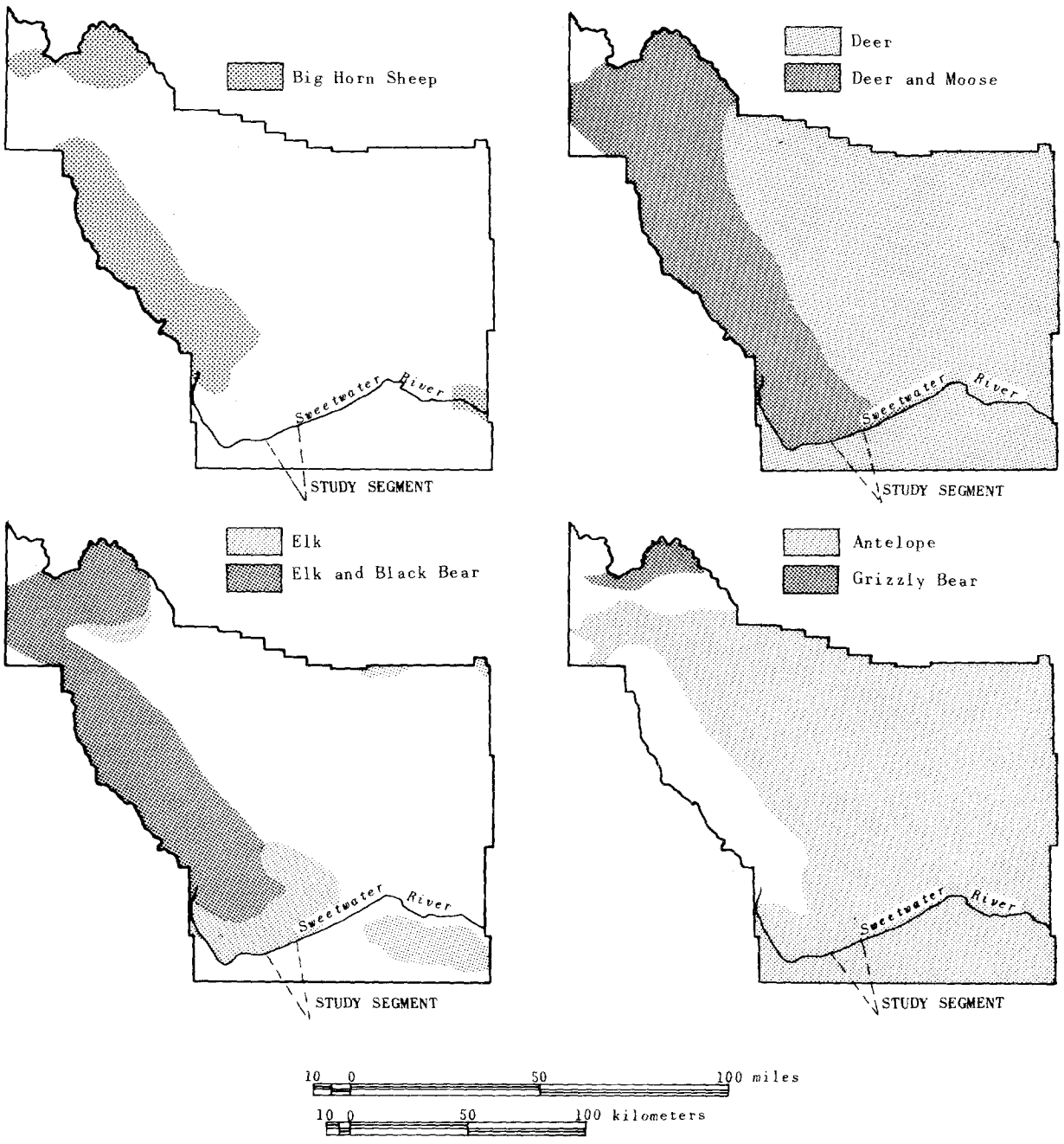


TABLE II-1

BIG AND SMALL GAME ANIMAL SPECIES
Fremont County, Wyoming

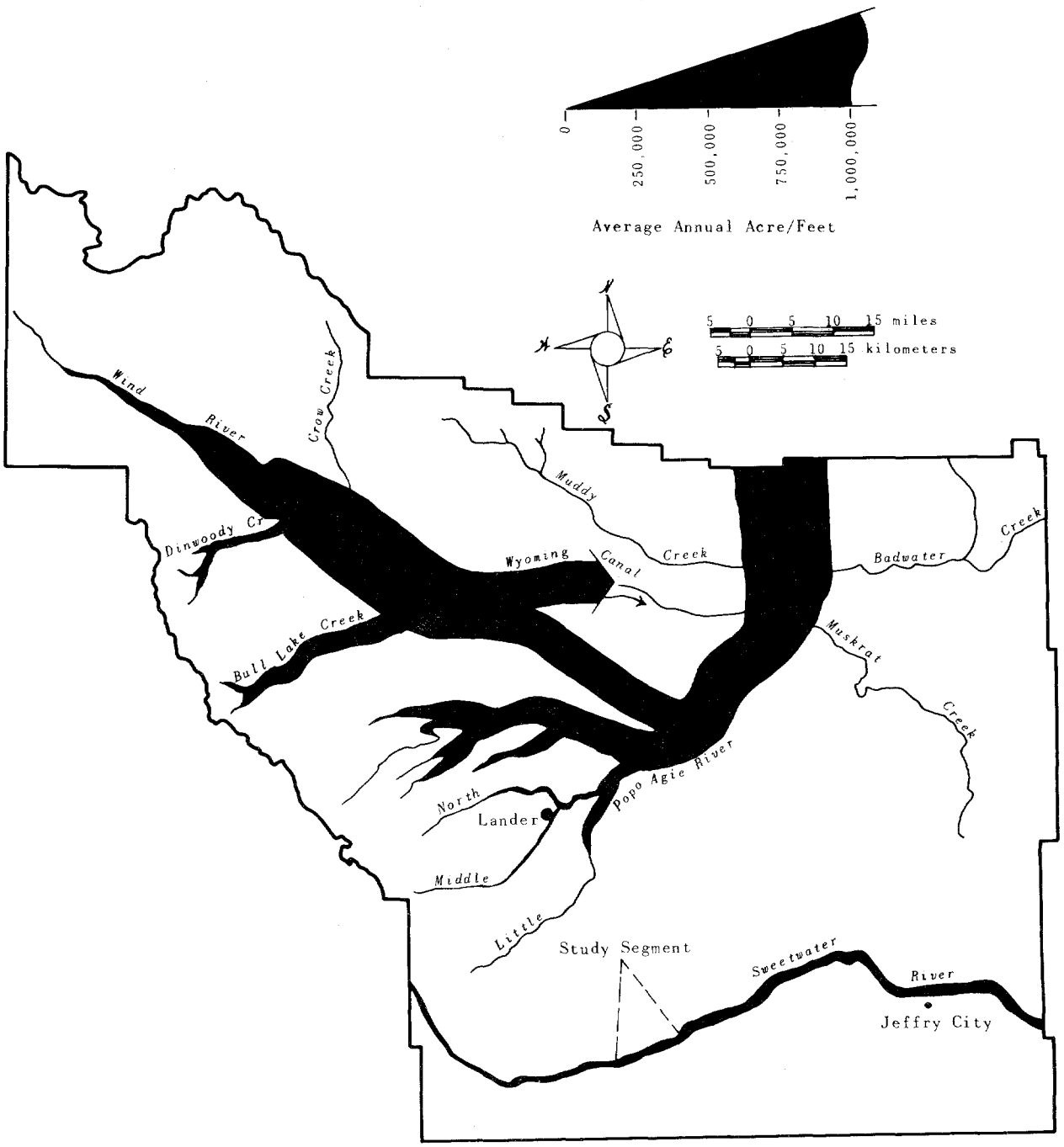
| Large Game | Estimated Population | 1975 Annual Harvest |
|---|---|---|
| Deer | 9,500 | 4,213 |
| Elk | 6,800 | 2,727 |
| Moose | 500 | 10 |
| Antelope | 7,350 | 1,592 |
| Bighorn Sheep | 1,800 | -0- |
| Black Bear | 200 | 39 |
| Grizzly Bear | 4 | -0- |
| **Small Game** | | |
| Sage Grouse | 29,000 | 7,281 |
| Chukar | 10,800 | 1,713 |
| Pheasant | 17,500 | 2,835 |
| Blue and Ruffed Grouse | 3,300 | 1,135 |
| Hungarian Partridge | 3,000 | 161 |
| Mourning Dove | * | 4,018 |
| Cottontail Rabbit | 70,500 | 12,365 |
| Snowshoe Hare | * | 75 |
| Duck | * | 8,628 |
| Geese | * | 228 |
| Squirrel | * | 75 |

*Estimates not available.

Figure II-7

# SWEETWATER RIVER STUDY
# FREMONT COUNTY, WYOMING

## Average Annual Streamflow



There is a large disparity of available surface water in the county due to the variations in precipitation between the mountains and the semiarid basins. Snow and rainfall which are often abundant in the high mountains are usually lacking in the lowlands during much of the year. As a result, natural lakes, which are numerous in the national forests at higher elevations, are almost nonexistent in the lower basins. However, two water projects have been constructed at lower elevations by the Bureau of Reclamation to offset this imbalance.

Boysen Reservoir, the largest body of water in the county, was constructed for hydroelectric power, irrigation, recreation, fish propagation, sediment retention, and flood control. The Riverton Project was built primarily for irrigation. Project features are Bull Lake Dam, Pilot Butte Dam, Wind River Diversion Dam, and approximately 730 miles of canals. In addition, the Bureau of Indian Affairs has constructed a series of small irrigation projects, including Washakie and Dinwoody Reservoirs and Ray Lake. The major water projects in Fremont County are shown in figure II-8.

## H. POPULATION AND LIFESTYLE

### Population

Fremont County's population has increased since 1930, but generally at a decreasing rate as shown in table II-2. The 1975 population was estimated by the Fremont County Planning Department to be 31,728. The department also estimated that the 1980 population will be over 36,000, the 1990 population over 47,000, and by 2000, it may exceed 61,000.

TABLE II-2

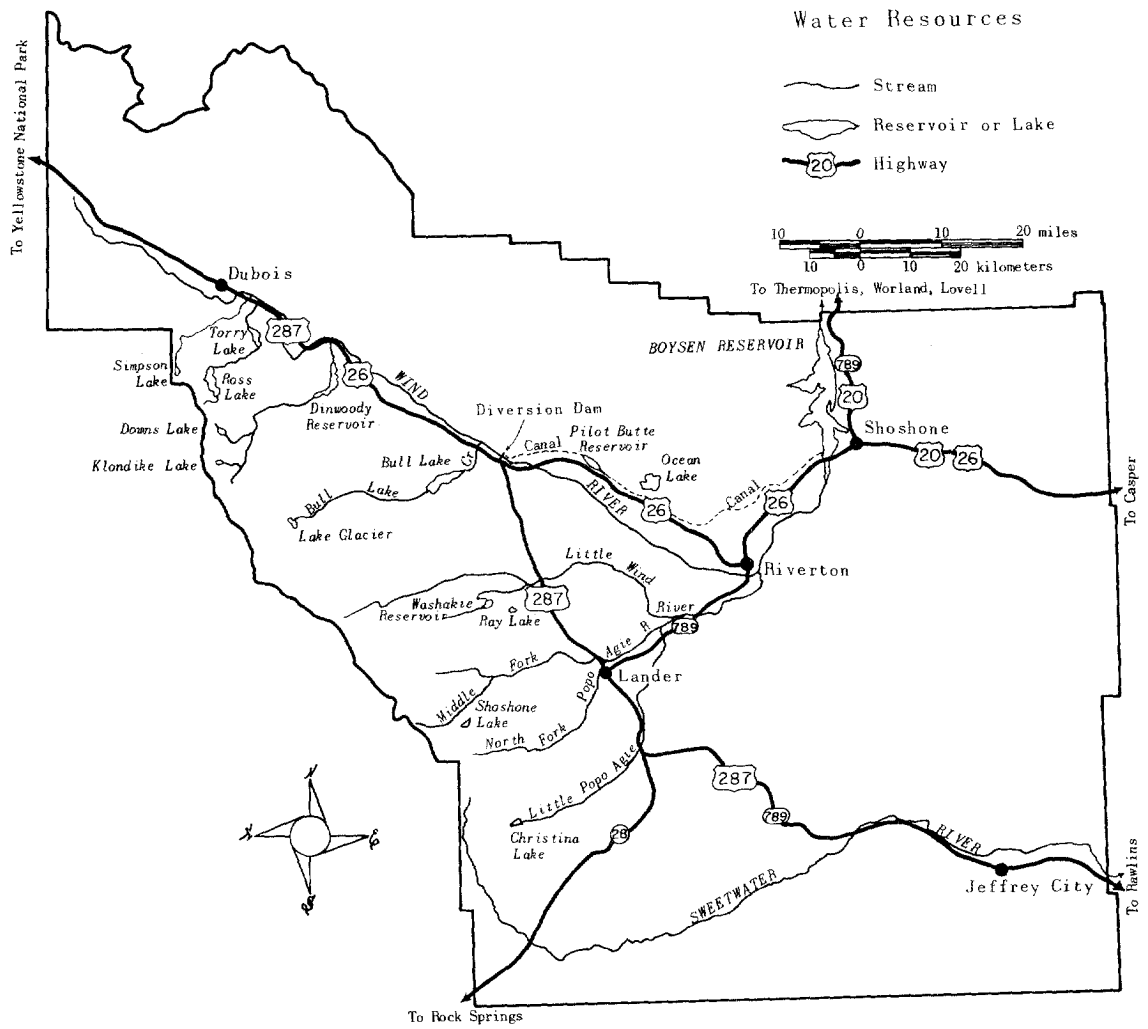
POPULATION
Fremont County, Wyoming

| Year | Population | Absolute Differences | Percent of Increase or Decrease |
|---|---|---|---|
| 1920 | 11,820 | - | - |
| 1930 | 10,490 | - 1,330 | - 11.25 |
| 1940 | 16,095 | + 5,604 | + 53.43 |
| 1950 | 19,580 | + 3,485 | + 21.65 |
| 1960 | 26,168 | + 6,588 | + 33.65 |
| 1970 | 28,352 | + 2,184 | + 8.35 |

Figure II-8

SWEETWATER WILD AND SCENIC RIVER STUDY
FREMONT COUNTY, WYOMING

Water Resources



More than half the population lives in seven of the county's cities and towns, as shown in figure II-9 and table II-3. This settlement pattern has held relatively constant since 1920, and urban and rural areas have shared equally in the expanding population. This can be explained, in part at least, by the continuing strength in agriculture and mining operations in the economy. In 1970, 47 percent of the residents were classified as rural (35 percent rural nonfarm and 12 percent rural farm), and 53 percent as urban.

TABLE II-3

POPULATION FOR SELECTED CITIES AND TOWNS
Fremont County, Wyoming

| City or Town | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 |
|---|---|---|---|---|---|---|
| Riverton | 2,023 | 1,608 | 2,540 | 4,142 | 6,845 | 7,995 |
| Lander | 2,133 | 1,826 | 2,594 | 3,349 | 4,182 | 7,125 |
| Shoshoni | 561 | 263 | 226 | 891 | 766 | 562 |
| Dubois | 243 | 177 | 412 | 279 | 574 | 898 |
| Hudson | 977 | 328 | 330 | 293 | 369 | 381 |
| Jeffrey City | -- | -- | -- | -- | -- | 574 |
| Pavillion | -- | -- | 176 | 241 | 190 | 181 |

Nine percent of the residents are 18 years of age or under, 75 percent are between 18 and 60, and the remaining 16 percent are over 60 years old. The median age is 25 years, as compared to the State average of 27 years and the national average of 29 years.

Median family income for Fremont County residents in 1970 was $8,932, while that for the State was $8,943 and that for the Nation was $9,590. In 1973 the per capita income was $3,496, compared with $4,696 for the State and $5,041 for the Nation.

Population characteristics differ markedly from those of the Nation. For example, the density of the county is only 3.2 persons per square mile (1.2 persons per $km^2$), as compared to the Nation with 57.8 persons per square mile (22.3 persons per $km^2$). Wyoming has 3.4 persons per square mile (1.3 persons per $km^2$).

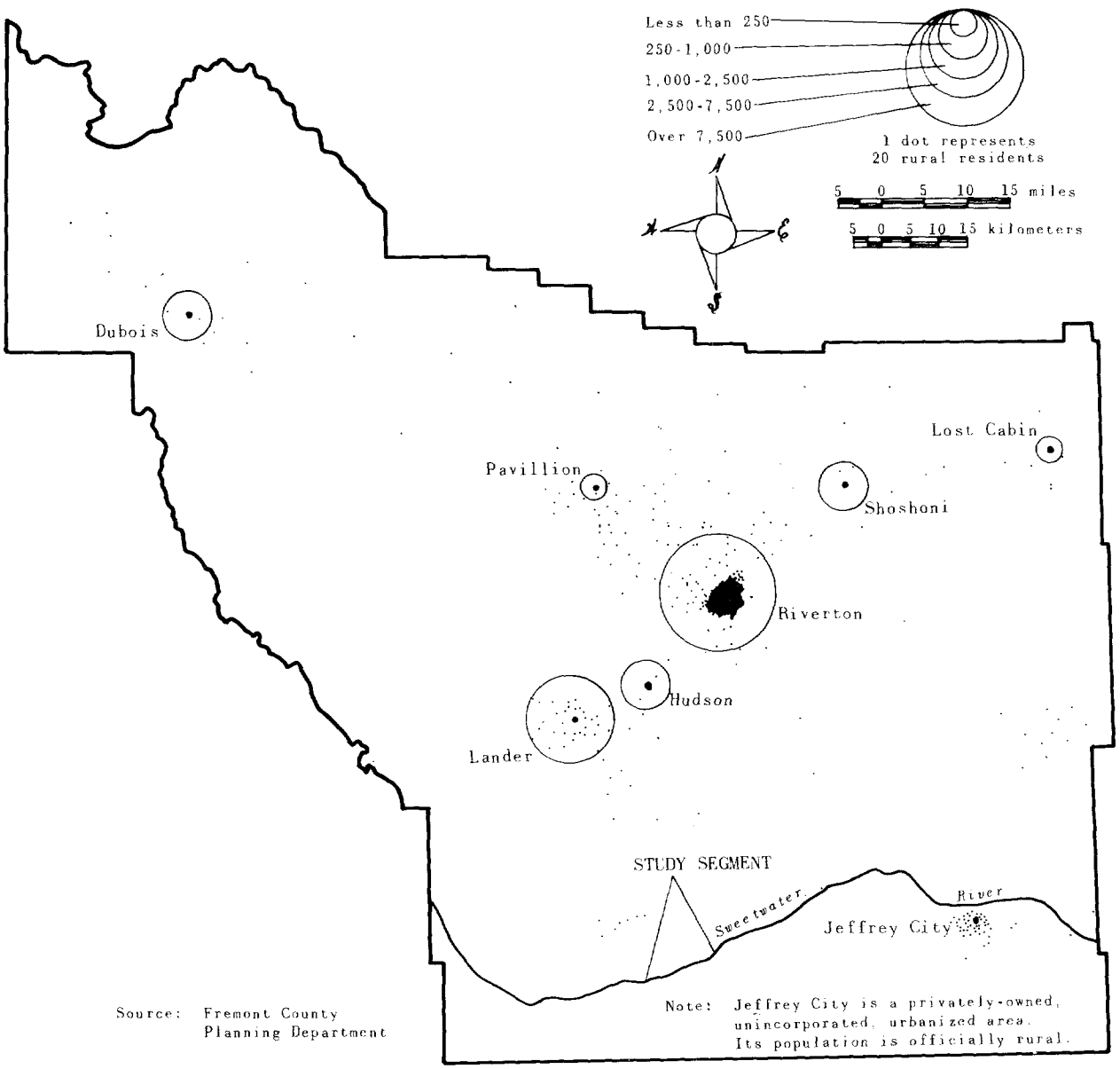
Lifestyle

Except for the two largest towns, Lander and Riverton, the county is basically rural in lifestyle. A distinct "small town" flavor and slower pace of life are prevalent. In each community, mining, agriculture (farming and ranching), and tourist-related services are the major employers.

Figure II-9

# SWEETWATER RIVER STUDY
# FREMONT COUNTY, WYOMING

## Population Distribution




Source: Fremont County
Planning Department

Note: Jeffrey City is a privately-owned, unincorporated, urbanized area. Its population is officially rural.

Many people have begun to move into the area because of energy-related jobs. A healthful climate and abundant outdoor recreational opportunities have attracted and will probably continue to attract people to the area as permanent residents.

## I. ECONOMY

The economy, although composed of many general types of industry, is supported most strongly by government, mining, agriculture, tourism, and retail trade.

### Mining

Mining is the largest industry and second largest employer, providing jobs for about 1,860 people; it has, however, the largest dollar payroll and produces the highest assessed value of products. The overall assessed value of minerals produced annually within the county has increased from approximately $53 million in 1970 to over $73 million in 1975. Of greatest importance are uranium and iron. Mineral locations are shown in figure II-10.

### Government

Government is the single largest employer. Current figures indicate that Federal, State, and local governmental agencies employ approximately 2,440 people. The current annual combined government payroll amounts to slightly over $21 million, second to mining's annual payroll. Education has the largest single payroll, followed by the State Government, Federal Government, and local agencies.

### Agriculture

The amount of land used for agricultural production, yield per acre, quantity of crops grown, and value of agricultural products have shown a steady increase. During the last decade the total annual value of agricultural products has increased from approximately $10 million to $20 million. As elsewhere, the number of farms and ranches has been decreasing, while the average size has been increasing.

The chief agricultural products include livestock (sheep and cattle) and hay. Some dairy products and vegetables are produced for local consumption.

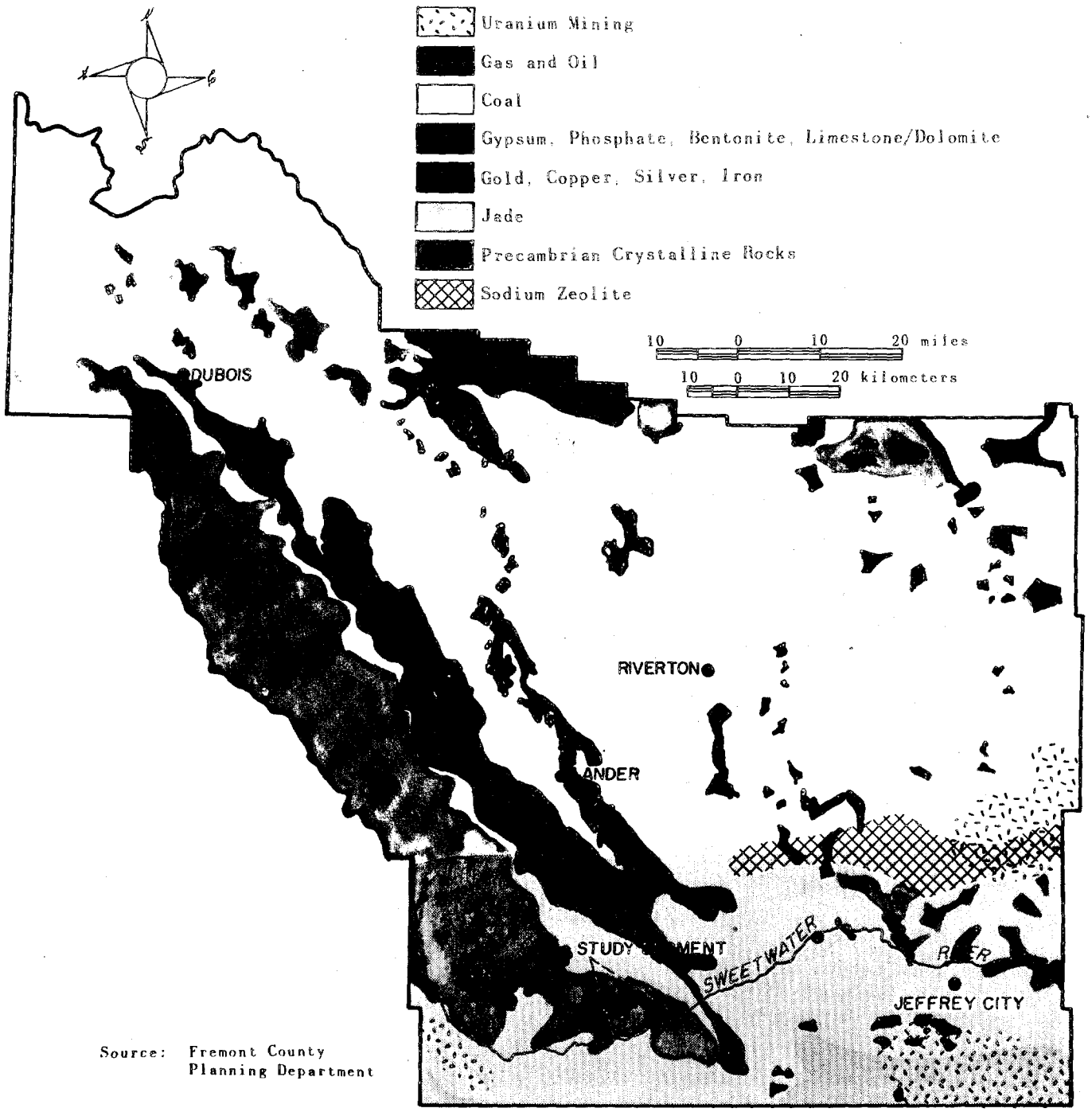
### Tourism

Fremont County's wilderness areas, high mountain forests and lakes, abundant fish and wildlife, scenic beauty, and location on one of the principal access routes to Yellowstone and Grand Teton National Parks make it a popular tourist area.

Figure II-10

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING

## Minerals




Source: Fremont County
Planning Department

Tourism is a basic industry of growing importance. Statistics from the Wyoming Travel Commission and Wyoming State Highway Department portray gradual increases each year in tourism. The Wyoming Highway Department's traffic records reveal that average daily traffic on the principal arteries within the county fluctuates greatly with the seasons. U. S. 287/Wyoming 789 in the Lander area experiences an increase of 120 percent in its average daily traffic load between the slowest months of January, February, and March and the busiest months of June, July, and August. U. S. 26/287 in the Dubois area experiences an increase in traffic of 360 percent between the same time periods that can be linked to the popularity of Grand Teton and Yellowstone National Parks.

The amount of money spent by tourists and visitors is included in figures portrayed for retail trade and selected services. Annual tourism expenditures are difficult to quantify but are estimated by the Wyoming Department of Revenue and Taxation to be approximately $10 million.

Retail Trade

Retail trade has exhibited the largest recent growth in employment of any industry. There has also been a steady increase in volume of sales, payroll, and number of establishments. Current retail trade payrolls are nearly $10 million. Figures recently published by the Wyoming Department of Revenue and Taxation indicate that the 1975 combined wholesale and retail sales in Fremont County amounted to $144 million.

## J. TRANSPORTATION

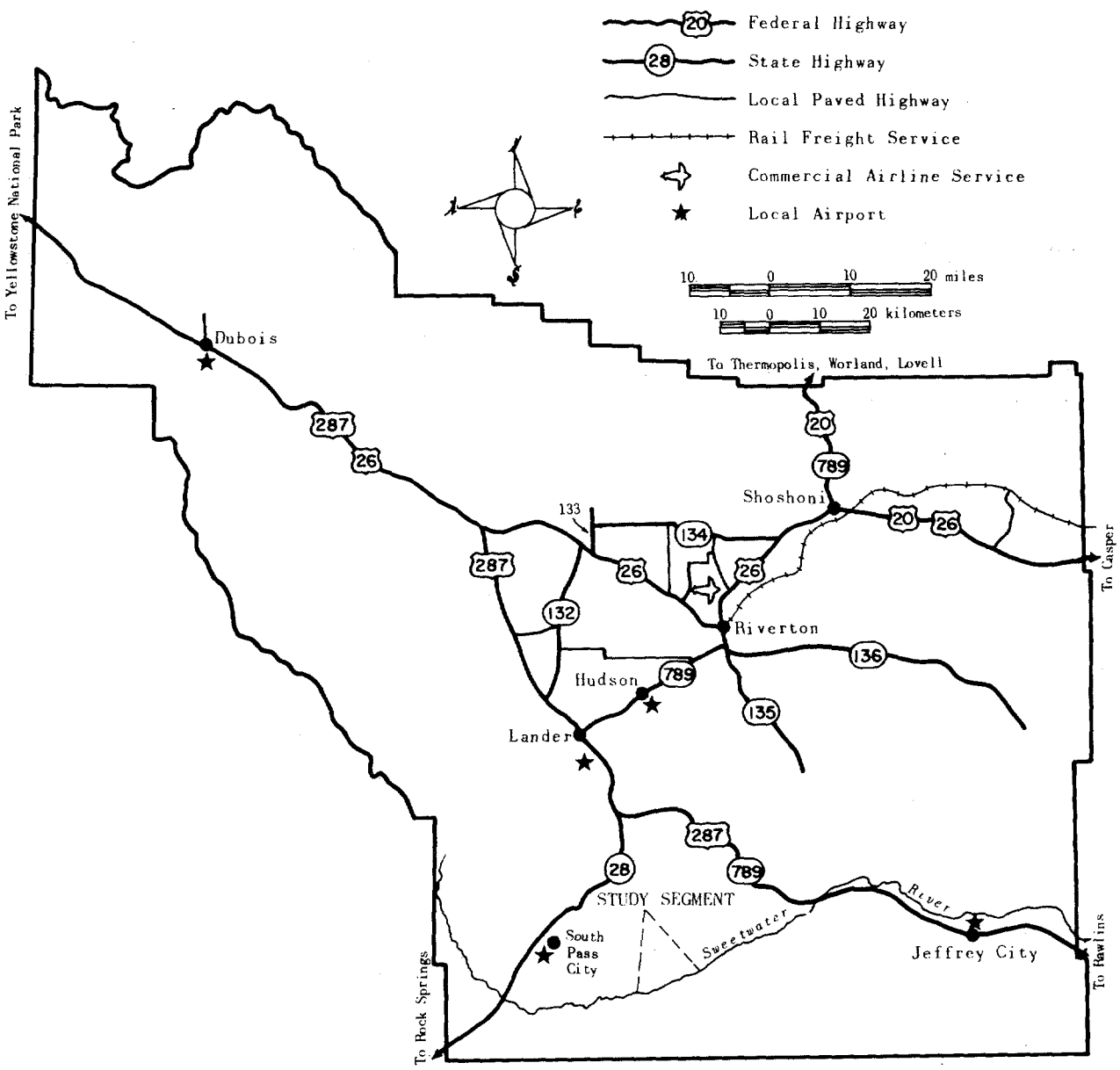
U. S. Highway 287 passes through Fremont County and leads to Yellowstone and Grand Teton National Parks. Interstate 80, a major east-west route parallels the southern border of Wyoming and passes within 50 miles of the Fremont County line. The county is also served by Federal highways 20 and 26. State highways include 28, 132, 133, 134, 135, 136, and 789, as shown in figure II-11.

Road access into and through the Wind River Mountains is limited. Most roads run north and south and skirt the range rather than cut directly east or west across it. The rest of the county is served by a network of county, Bureau of Land Management, Forest Service, and private roads. Most are either unpaved all-weather or unimproved dirt roads.

Regularly scheduled airline service is available only at Riverton. These flights connect with other Wyoming cities and with two major regional transportation hubs, Denver and Salt Lake City. Small planes can land at airports or landing strips in Lander, Dubois, Jeffrey City, South Pass City, and Shoshoni.

Figure II-11

# SWEETWATER WILD AND SCENIC RIVER STUDY
## FREMONT COUNTY, WYOMING
### Transportation



There is regular passenger bus service to Jeffrey City, Lander, Hudson, Riverton, and Shoshoni. Rail freight service is provided to Riverton by the Chicago and Northwestern Transportation Company, as shown in figure II-11.

## K. LAND OWNERSHIP AND USE

### Land Ownership

Most of the land is publicly owned, with the Forest Service and the Bureau of Land Management controlling more than 50 percent of the acreage. Approximately 27.6 percent of the county is owned by the Wind River Indian Reservation and 13.6 percent is under other private ownership. A breakdown of land ownership is given in table II-4 and figure II-12.

TABLE II-4

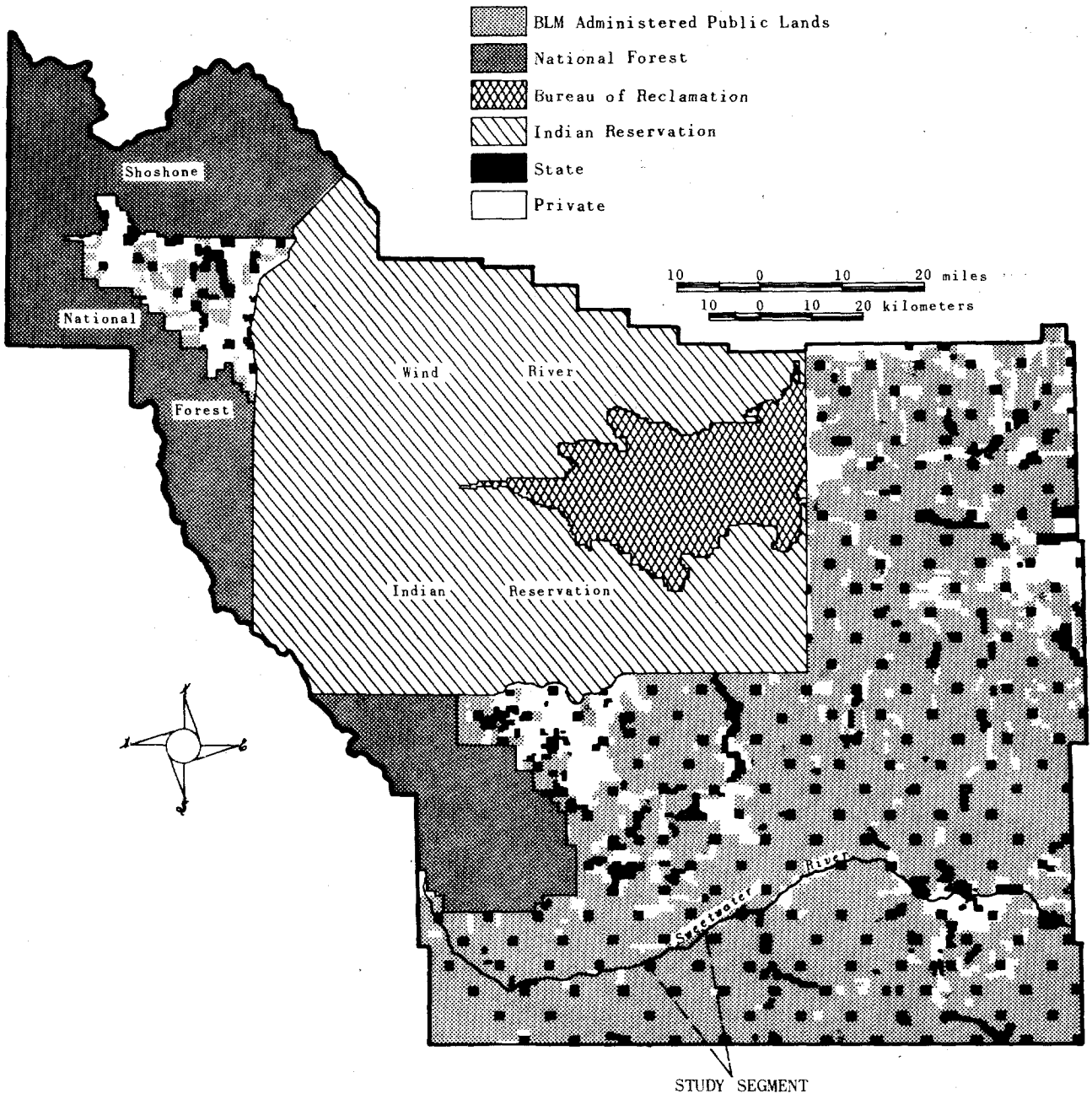
LAND OWNERSHIP
Fremont County, Wyoming

| Ownership | Acres | Square km | Percent of Total |
|---|---|---|---|
| Wind River Indian Reservation | 1,640,020 | 6,637 | 27.6 |
| Other Private | 808,782 | 3,273 | 13.6 |
| State, County, and Local Governments | 260,565 | 1,054 | 4.4 |
| Bureau of Land Management | 2,116,143 | 8,564 | 35.7 |
| Forest Service | 853,830 | 3,455 | 14.4 |
| Bureau of Reclamation | 165,245 | 669 | 2.8 |
| Other Agencies | 40,913 | 166 | 0.7 |
| Major Water Surface | 44,740 | 181 | 0.8 |
| TOTAL | 5,930,238 | 23,999 | 100.0 |

Figure II-12

# SWEETWATER WILD AND SCENIC RIVERS STUDY
# FREMONT COUNTY, WYOMING

## Land Ownership



## Land Use

Most of the land in Fremont County is undeveloped, with hundreds of square miles remaining in a natural state or used only for livestock grazing, as shown in table II-5. The outward physical signs of agriculture are very limited since only a small percent of the land is actually irrigated. The most intensive agricultural activity is in the heart of the county near Riverton and Lander and in the Wind River Basin.

TABLE II-5

LAND USE
Fremont County, Wyoming

| Use | Acres | Square km | Percent of Total |
|---|---|---|---|
| Noncrop Land | 3,151,002 | 12,752 | 53 |
| Urban | 44,620 | 181 | 1 |
| Small water areas | 18,810 | 76 | * |
| Other water areas | 44,740 | 181 | 1 |
| Crop Land | | | |
| Irrigated | 208,466 | 844 | 4 |
| Nonirrigated | 5,616 | 23 | * |
| Pasture | 7,435 | 30 | * |
| Range | 2,209,237 | 8,940 | 37 |
| Forest | | | |
| Commercial | 113,220 | 458 | 2 |
| Noncommercial | 120,385 | 487 | 2 |
| Mining | 1,500 | 6 | * |
| Other | 5,207 | 21 | * |
| TOTAL | 5,930,238 | 23,999 | 100 |

*Substantially less than 1 percent of the total area.

Population concentrations and the greatest amount of urban land use are near Riverton and Lander and in the Wind River Basin. Of the total land area, only 0.74 percent is devoted to urban uses such as residential, commercial, public, and industrial, while 0.03 percent is used for mining.

About 4 percent of the land is forested, mostly along the county's western border or in the extreme northwestern corner.

## L. RECREATION

The Forest Service administers two national forests, Bridger-Teton and Shoshone, within which are 13 developed recreational areas. The Forest Service also administers Washakie, Fitzpatrick, Teton, and Bridger Wilderness Areas and Glacier and Popo Agie Primitive Areas. The Bureau of Land Management administers six developed recreation areas.

The Wyoming Game and Fish Department maintains one undeveloped and four developed recreation areas in Fremont County. In addition to Boysen and Sinks Canyon State Parks, the Wyoming Recreation Commission administers a developed recreation area at the South Pass Historic Preserve. In addition to numerous private facilities, there are several developed recreation areas administered by municipalities. A summary of recreation areas by ownership and activities, derived from An Outdoor Recreation Plan for Wyoming, 1975, appears in table II-6. Locations are shown in figure II-13.

Recreation activities include boating and canoeing, camping, driving for pleasure, fishing, hiking and backpacking, mountaineering, rock collecting, golfing and tennis, horseback riding, hunting, picnicking, swimming, ice skating, sledding, snowmobiling, and snowskiing. Because of the heavy tourist traffic en route to Yellowstone and Grand Teton National Parks and since the resident population is low (fewer than 30,000), the majority of the total participation in recreational activities during the summer months is attributable to nonresidents. Estimates and projections of recreation participation are shown in table II-7.

The many high-altitude mountain lakes and reservoirs and a multitude of rivers and streams provide excellent cold water fishing. There is also good warm water fishing at Boysen Reservoir and Ocean Lake. Species available to the angler are discussed in the fish and wildlife section.

Hunting is good to excellent. In 1975 about 1,700 sportsmen hunted antelope, 5,400 hunted deer, 6,400 hunted elk and bear, and 10 hunted moose. Excellent sage grouse hunting is available in addition to small game hunting for partridge and cottontail rabbit. Some waterfowl and predators are also hunted.

Numerous trails used by off-road vehicles are located on BLM-administered public land and Forest Service areas. These support four-wheel-drive traffic, snowmobiles, and cross-country skiing. Many trails suitable for hiking and horseback riding are also available, especially within the two national forests and on BLM-administered public land.

TABLE II-6

DEVELOPED RECREATION AREAS
Fremont County, Wyoming

| Area | Activities | | | | |
|---|---|---|---|---|---|
| | Camping | Picnicking | Boating | Swimming | Fishing |
| **U. S. Forest Service** | | | | | |
| Sinks Canyon | X | X | | | X |
| Jackinson Creek | X | X | | | X |
| Fiddlers Lake Campground | X | X | X | | X |
| Popo Agie | X | X | | | X |
| Louis Lake | X | X | X | | X |
| Falls | X | X | | | X |
| Brooks Lake | X | X | X | | X |
| Horse Creek | X | X | | | X |
| Double Cabin | X | X | | | X |
| Fiddlers Lake Picnic Ground | X | X | X | | X |
| Louis Beach | X | X | X | | X |
| Bruce | X | X | | | X |
| Wind River Lake | | X | | | X |
| **Bureau of Land Management** | | | | | |
| Atlantic City | X | X | | | X |
| Big Atlantic Gulch | X | X | | | X |
| Cottonwood | X | X | | | X |
| Wild Horse Point | | X | | | |
| Castle Gardens Archeological Site | | X | | | |
| Split Rock Historical Site | | X | | | |
| **Wyoming Game and Fish Department** | | | | | |
| Ring Lake | X | X | | | X |
| Trail Lake | X | X | | | X |
| East Fork | X | X | | | X |
| East Side of Ocean Lake | X | X | | X | X |
| **Wyoming Recreation Commission** | | | | | |
| Boysen Reservoir | X | X | X | X | X |
| South Pass Historic Preserve | | X | | | |
| Sinks Canyon State Park | X | X | | | |

TABLE II-6 (continued)

DEVELOPED RECREATION AREAS
Fremont County, Wyoming

| Area | Activities | | | | |
|---|---|---|---|---|---|
| | Camping | Picnicking | Boating | Swimming | Fishing |
| **Municipal** | | | | | |
| Riverton City Campground | X | X | | | |
| Riverton Picnic Ground | | X | | | |
| Riverton Picnic Ground | | X | | | |
| Riverton Picnic Ground | | X | | | |
| Lander City Park | X | X | | X | X |
| Shoshoni City Park | X | X | X | X | X |
| Jeffrey City | | X | | | |
| **Private** | | | | | |
| KOA Lander | X | | | | |
| KOA Riverton | X | | | | |
| Wind River Ranch Dubois | X | X | | X | X |
| Taft Ranch Campsites | X | X | | | X |
| Stalnaker's Trailer Park and Campground | X | X | | | |
| Rudy's Camper Court | X | X | | | |
| Circle-Up Camper Court | X | X | | | |
| Rawhide KOA | X | X | | | |
| Lava Creek Campground | X | X | | | X |
| Bill's Campground | X | | | | |
| Maverick Mobile Home Park | X | X | | X | X |
| Lakeside Resort | X | X | X | X | X |
| River Campground | X | | | X | X |
| Riverside Trailer Park | X | | | | |
| Rocky Acres Campground | X | X | | | |

Figure II-13

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING
## Developed Recreation Areas

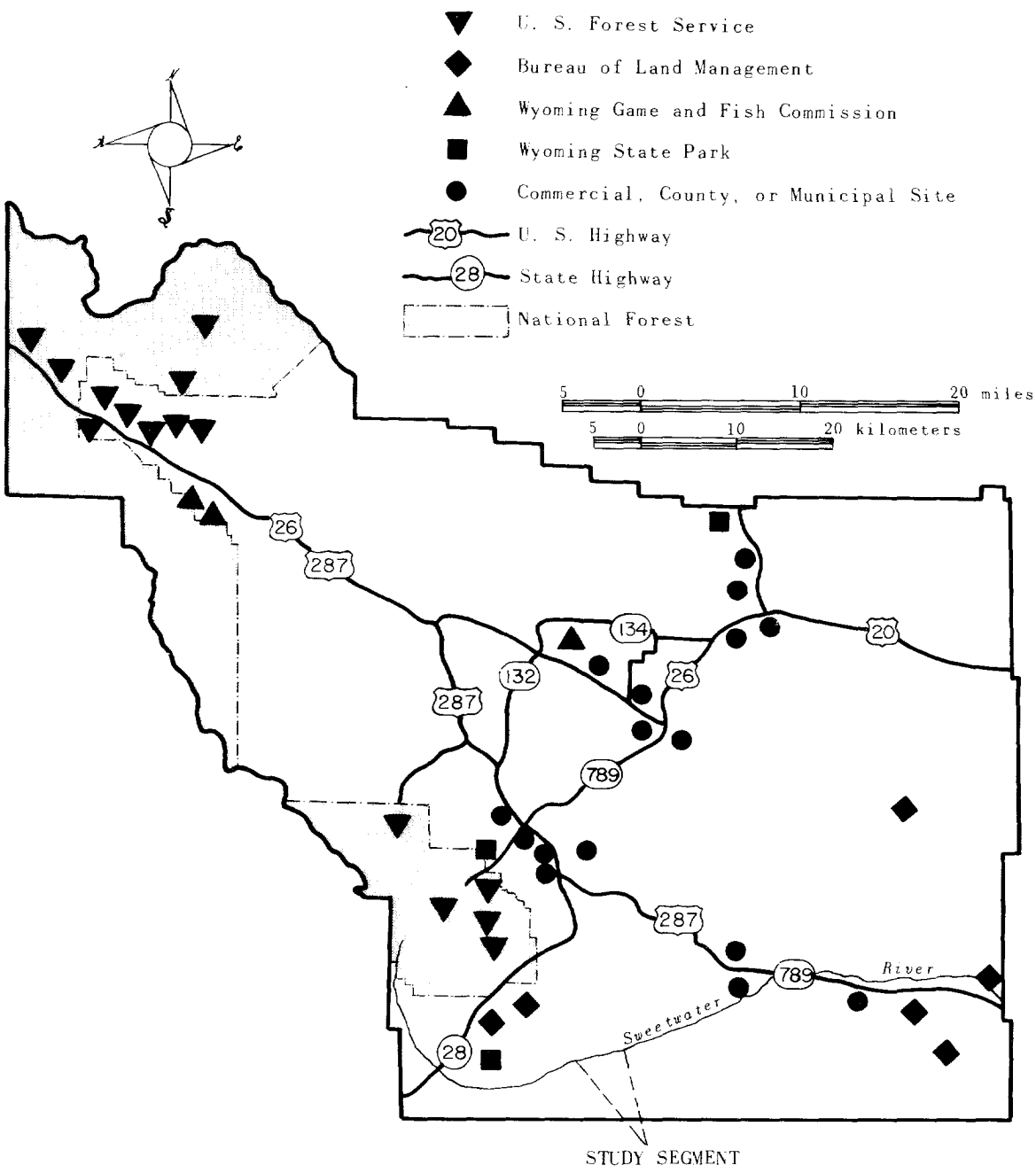


TABLE II-7

ESTIMATED TOTAL RECREATION PARTICIPATION
Fremont County, Wyoming

| Activity | Visitor Days[1] 1970 | Visitor Days[1] 1990 | Projected Percent Increase |
|---|---|---|---|
| Boating and Canoeing | 69,019 | 105,447 | 53 |
| Attending Athletic Events | 43,345 | 99,611 | 130 |
| Camping | 181,836 | 271,781 | 49 |
| Fishing | 359,715 | 524,479 | 46 |
| Golfing | 37,068 | 141,972 | 283 |
| Hiking | 142,787 | 214,036 | 50 |
| Softball and Baseball | 42,665 | 75,262 | 76 |
| Swimming | 123,445 | 205,046 | 66 |
| Sightseeing and Pleasure Driving | 181,997 | 340,652 | 87 |
| Skiing | 23,927 | 84,383 | 253 |
| Picnicking | 71,844 | 117,053 | 63 |
| Rodeos | 41,205 | 60,288 | 46 |
| Hunting | 70,418 | 95,853 | 36 |
| Ice Skating | 17,312 | 30,431 | 76 |
| Water Skiing | 23,588 | 34,913 | 48 |
| Tennis | 10,062 | 17,867 | 78 |
| Sledding and Tobogganing | 7,246 | 12,738 | 76 |
| Snowmobiling | 22,300 | 53,785 | 141 |

[1]A visitor day is defined as 12 visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

Rockhounding and gem-mineral collecting are popular activities. Jade, agates, and petrified wood are popular attractions in the area west of Jeffrey City.

The county has long been a favorite hunting ground for artifact collectors. The Antiquities Act, P. L. 209, dated June 8, 1906, makes it illegal to remove artifacts from public lands; nevertheless, many local collectors have amassed large collections from archeological sites not far from the study area.

Although most picnicking and camping is done at developed sites, some of this activity takes place in association with river and trail use as a dispersed type of recreational activity throughout the county.

Major winter sports activities are skiing and snowmobiling. Mountain areas support snowmobiling and cross-country skiing into late spring. Most winter sport participants are local residents.

## M. CULTURAL RESOURCES

### Archeology

Many significant Indian occupancy sites are present throughout the county. Amateurs have reported 425 sites to the office of the Wyoming State Archeologists, and many more probably exist. Pictographs, petroglyphs, tipi rings, fire rings, arrowheads, and other artifacts can be found at many sites.

The Wyoming State Archeologist describes the sequence of prehistoric archeologic events for the area in terms of five eras. Man seems to have appeared in the region over 11,000 years ago to usher in the first era, the Paleo-Indian Period. Fully developed Homo sapiens, the men of this era possessed an advanced level of stone technology.

The Early Plains Archaic Period began 7,500 years ago and seems to have been a long, warm, climatic episode of low rainfall. The Early Period coincided with a cultural hiatus over much of the Plains. During the Middle Plains Archaic Period, which began 5,000 years ago, an increase in the use of the interior basins for crop growing accompanied a rapid increase in the population. The Late Plains Archaic Period, beginning about 3,000 years ago, was essentially the same as the previous period except for a change in spear-point design. An increase in archeological sites from this period is noted.

The Late Prehistoric Period began about 1,700 years ago and ended about 300 years ago with the Contact Period when European influence began to be felt. During the Late Prehistoric Period, the bow and arrow and pottery were introduced into the area.

Castle Gardens Petroglyph Site, one of the best known archeological sites in the area, is located in the eastern part of Fremont County. Listed in the National Register of Historic Places, 1976, as shown in appendix B, the site is maintained by the Bureau of Land Management. The site has numerous drawings that extensively use circular shield motifs and include several figures of water turtles. The use of non-native turtles suggests a cult that spread west of the Missouri and Mississippi Rivers, probably in the Late Prehistoric Period.

There are also many historic archeological sites that were established since European contact. Many of these are one-time occupation sites which are of increasing importance in analyzing the normal routines of Indian culture.

History

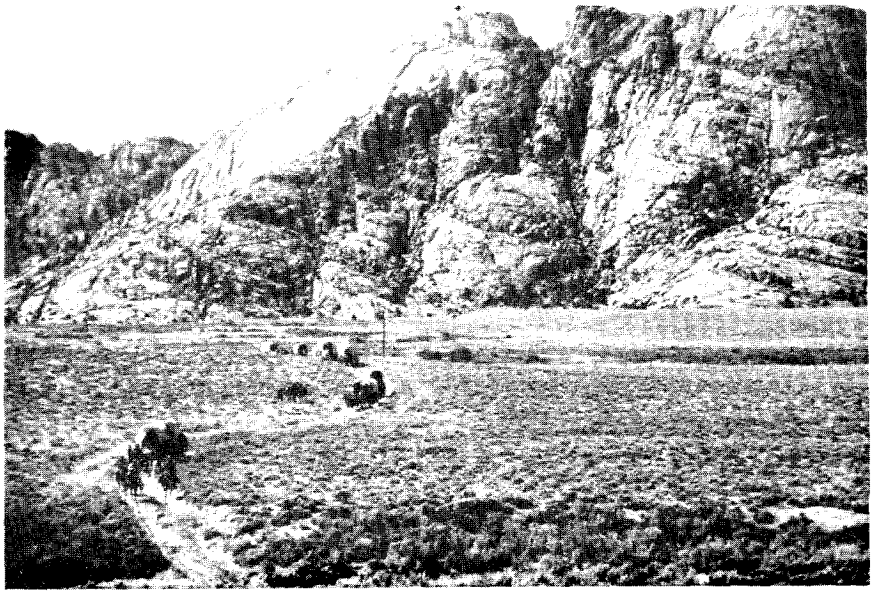
John Colter, a member of the Lewis and Clark Expedition and the first explorer of the Yellowstone River area, was the first white man believed to have entered Fremont County. He probably first entered during the winter of 1807-08 while trying to locate Indian tribes who might trade furs. Trappers later came into the areas until the War of 1812 temporarily halted activity.

Wilson Price Hunt, early frontiersman, led his party on its way to Astoria, Oregon, across present Fremont County in 1811. In 1812 the returning Astorians, under Robert Stuart, first found a route that was to become a part of the Oregon Trail, by traveling eastward through South Pass, and down the Sweetwater and Platte Rivers.

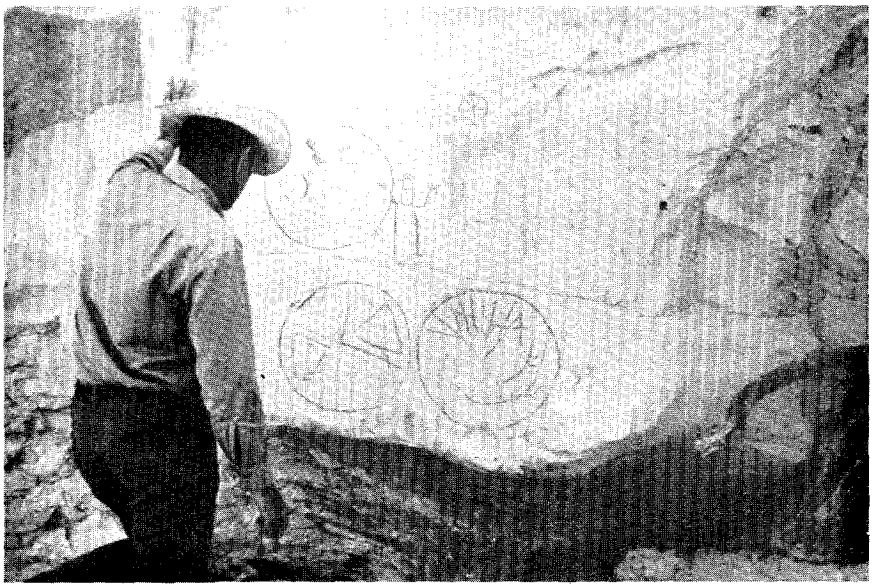
In 1824 a party of General Ashley's men, led by Jedediah Smith and including Bill Sublette, Jim Clyman, and Tom Fitzpatrick, rediscovered South Pass, and the area became a center for fur trappers. Among the trappers and hunters to later frequent the area were Jim Bridger, Jack Robinson, Kit Carson, the La Jennesse Brothers, and Papin and Company.

In 1832 Captain Benjamin Bonneville led the first wagon train, composed of 110 trappers, over South Pass. However, the importance of this broad, easy, level route over the Continental Divide was not fully realized until the Oregon country opened for settlement and the rush for California gold brought a tide of immigrants across the Oregon and Mormon Trails.

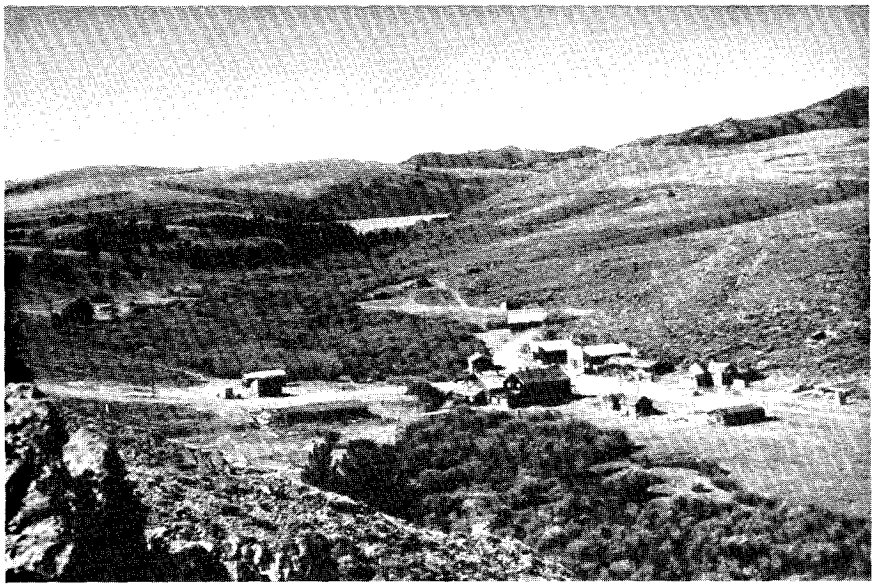
The county bears the name of the early-day pathfinder and explorer of the West, Captain John C. Fremont. Fremont explored and mapped the Wind River Basin for the U. S. Government in the middle years of the century, and crossed South Pass in 1842.



To commemorate the Bicentennial, a group of wagons follows the Oregon Trail past Split Rock.



Castle Gardens Petroglyph Site is on the *National Register of Historic Places*.



Historically rich South Pass City is protected by the State of Wyoming.

When gold was discovered in California, an expedition was detailed in 1857 to build a road north of South Pass from the Burnt Ranch on the Sweetwater River to Fort Hall. Colonel F. W. Lander was in charge of the expedition. Later a settlement called "Push Root" was renamed after Lander.

Ten years later, South Pass's own gold rush started. Gold had been reported in the area as early as 1842, but hostile Indians hampered earlier prospectors. During the winter of 1866-67 a party of eight prospectors established a camp on Willow Creek. By spring they had supposedly recovered some $15,000 worth of gold. News of their success brought thousands to South Pass. The following year South Pass City boasted a population of 4,000, and in 1870 as much as $5,000,000 in gold may have been taken from this district.

During its heyday, South Pass City also gained fame as the home of Esther Hobart Morris, who promoted the cause of equal rights for women. Mrs. Morris was instrumental in making Wyoming Territory the first government in the Nation to grant women equal suffrage in 1869. In 1870 Mrs. Morris became the first Justice of the Peace in the country.

In 1868 the Shoshone Indians were given land for a reservation by the Treaty of Fort Bridger. Sacajawea, a member of the Lewis and Clark Expedition, was a Shoshone Indian from the area and is said to have been buried on the Wind River Reservation.

Chief Washakie, who befriended the white man in the area and whose strong leadership accounted for a distinguished relationship between his people and the United States, lived on the reservation until his death in 1900.

When the government built forts and camps to protect the Shoshones from raids by the Sioux, Arapaho, and Cheyenne Tribes and when a treaty reduced the size of the Indian reservation, homesteaders flocked to the area.

Fort Washakie was so designated December 30, 1878, having been founded as Camp Brown in January 1871. It is now headquarters of the Wind River Reservation, the home of the Shoshone and Arapaho Tribes.

On March 5, 1884, Fremont County was created, and Lander was made the county seat. Stemming from the original Carter County, the name of which was later changed to Sweetwater, Fremont County was cut from the northern part of the old Sweetwater County. During the same year, the first productive oil well west of the Mississippi was drilled near Lander.

Riverton, the county's largest city, was not founded until 1906, when land adjacent to the townsite opened for homesteading under a private irrigation project. Also in 1906 the coal industry around Hudson began booming with the completion of the Chicago and Northwestern Railroad.

Until the Taylor Grazing Act was passed in 1934, the area north of Beaver Rim was primarily used by sheep operators, and the area south of the rim to the Red Desert was used by cattle operators. Since then there has been a gradual shift to cattle as the primary livestock.

In 1953 uranium was discovered near Jeffrey City in the eastern part of the county and mining operations began. In the late fifties, iron was discovered near Atlantic City; mining began in 1962.

The seven sites listed in the National Register of Historic Places, 1976, and the three sites that have been nominated for enrollment are shown in appendix B.

# CHAPTER III

# RIVER SETTING

## A. INTRODUCTION

The river setting focuses on the river corridor. This is generally within one-quarter mile of either side of the Sweetwater River or to the line of sight from the river, whichever is the least. However, for accuracy of data, it was necessary to discuss categories such as geology and water resources on a broader scope.

## B. RIVERSCAPE AND LANDFORM

South and east of the Wind River Mountains, the Sweetwater River has cut through a spur of the mountains into the high plains desert to create a winding canyon known as "Sweetwater Canyon." The section of the Sweetwater River through this canyon is the 9.5-mile-long (15.3-km-long) river segment which is the subject of this study.

The study area begins at Wilson Bar, Sec. 16, T.28N., R.98W., elevation 7,150 feet (2,177 m). Wilson Bar is about 15 road miles (24 km) southeast of Atlantic City. Six tributaries -- Granite, Strawberry, Mormon, Willow, Chimney, and Spring Creeks, shown in figure III-1 -- empty into the Sweetwater within the study area boundaries. The elevation of the downstream boundary of the study area, Spring Creek, Sec. 34, T.29N., R.97W., is 6,720 feet (2,048 m). Over the 9.5-mile (15.3-km) length, the river drops 430 feet (131 m) or an average of about 45 feet per mile (9 m per km).

The average width of the river is 35-40 feet (11-12 m). It is narrower within the deepest part of the canyon and slightly wider at both the upper and lower ends.

With the exception of a dilapidated mine entrance just inside the study boundary near Wilson Bar and a four-wheel-drive road at Strawberry Creek, there are no structures or other evidences of man's presence. The locations of both are shown in figure III-1.

The narrow floor of the canyon provides little in the way of a flood plain. However, there is a very small alluvial valley at Wilson Bar and a wider one near the lower end of the canyon at Chimney and Spring Creeks.

The Sweetwater first flows through an alluvial valley with low banks covered by riparian vegetation or sagebrush and grass. It then enters a canyon dotted with a mixture of aspen and conifers. Toward the downstream end the valley broadens again, and the river begins to meander once more.

Access within the canyon is limited and there are only a few roads along the rim. The river study area contains about 2 miles (3.2 km) of primitive roads. One runs north and south and fords at Strawberry Creek, as shown in figure III-1. Another parallels a portion of Chimney and Spring Creeks and the Sweetwater for about a mile (1.6 km) in the downstream end.

Access to the river area is generally available during the summer months from either side of the canyon by way of unimproved dirt roads, many of which cross private land. Due to muddiness, steepness, roughness, or light snow cover, four-wheel-drive vehicles are recommended and often required. During most of the winter, the area is inaccessible because of drifting snow.

The dirt roads connect to the Bureau of Land Management Atlantic City - Hudson Road about 3.5 miles (5.6 km) north of the canyon, as shown in figure III-1. The Atlantic City - Hudson Road connects with State Highway 28 in the South Pass City area and with U. S. Highway 287 on Beaver Rim. These two paved highways constitute the major transportation routes in this part of Fremont County. The canyon lies about 47 road miles (76 km) south-southeast of Lander by way of either of these two highways.

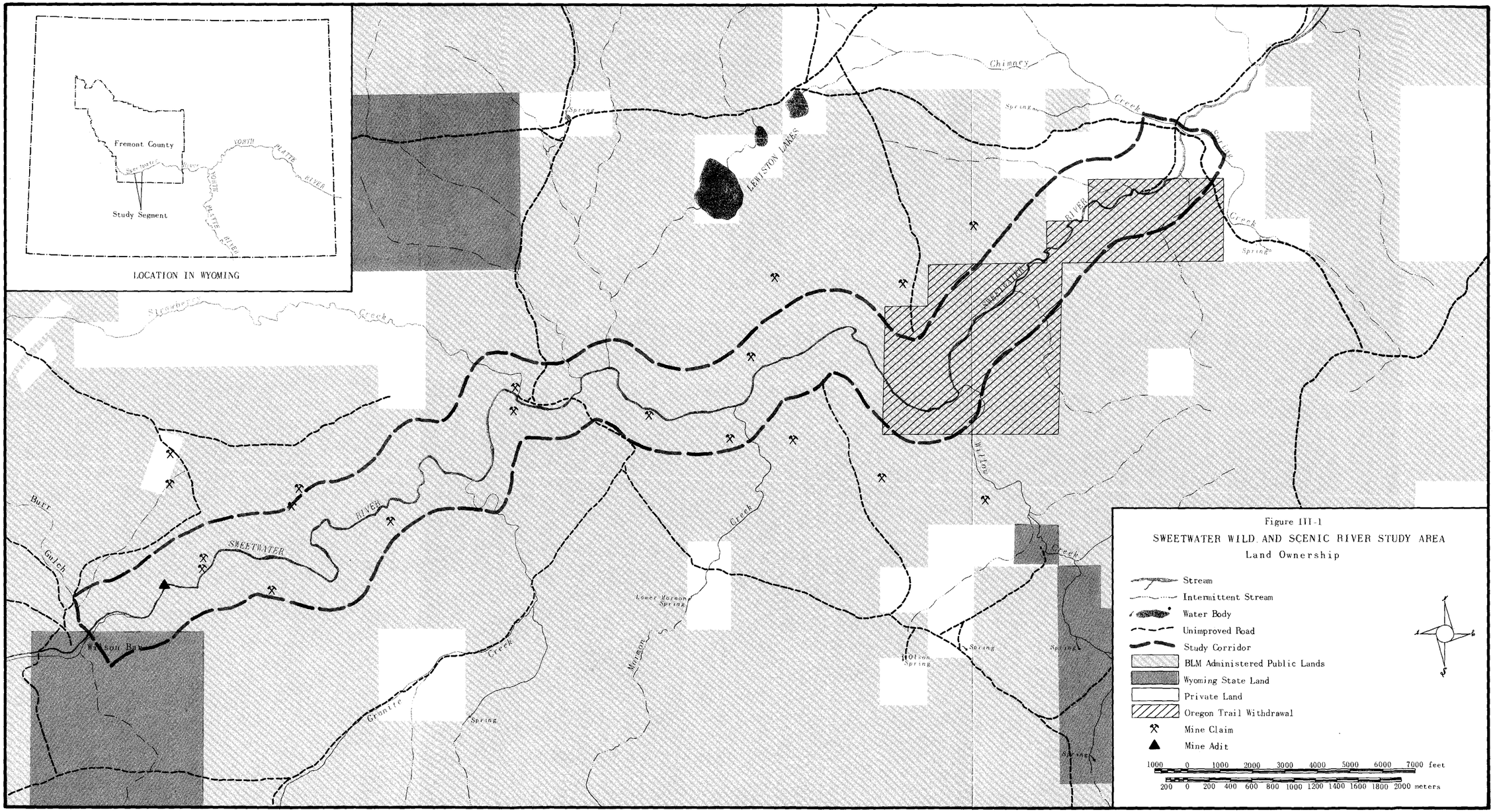
## C. GEOLOGY AND MINERALS

### Geology

The Sweetwater Wild and Scenic River Study area is located along the southeastern flank of the Wind River Range, a large northwest trending, highly dissected anticlinal uplift some 120 miles (193 km) long and 30-50 miles (48-80 km) wide. It is the largest discrete mountainous mass in Wyoming. Like most of the other mountain ranges in the State, the Wind River Range was uplifted during the Laramide Revolution, apparently as the result of movement along a west-flank thrust fault which tilted the entire mountain block to the east. Subsequent glacial erosion modified the mountain range to its present rugged profile.

The geology of the Wind River Range in the general vicinity of the Sweetwater Canyon is somewhat complex. In general, this area is depicted as an island of Precambrian metasedimentary and metavolcanic rock some 3+ billion years old, surrounded by younger granitic rocks and intruded by a number of dikes and sills, largely mafic in composition.

The Sweetwater Wild and Scenic River Study area centers around a scenic canyon up to 500 feet (152 m) deep. Some 95 percent of the area is covered by a thick sequence of Precambrian rocks, with the remainder covered by a thin deposit of Tertiary pediment gravels and Quaternary alluvium.


Fremont County
Study Segment
NORTH PLATTE RIVER
LOCATION IN WYOMING
Chimney Spring
Creek
LEWISTON LAKES
RIVER
Creek
Spring
Sweetwater Creek
SWEETWATER
RIVER
Burr Gulch
Wilson Bar
Lower Watson Spring
Watson Creek
Granite Spring
Willow Creek
Olson Spring
Spring
Spring
Spring
Figure III-1
SWEETWATER WILD AND SCENIC RIVER STUDY AREA
Land Ownership
Stream
Intermittent Stream
Water Body
Unimproved Road
Study Corridor
BLM Administered Public Lands
Wyoming State Land
Private Land
Oregon Trail Withdrawal
Mine Claim
Mine Adit
1000 0 1000 2000 3000 4000 5000 6000 7000 feet
200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 meters

The Precambrian rocks fall into two categories--metamorphic and granitic. The granites are confined mainly to the area from Strawberry Creek to just west of Chimney Creek and are essentially unaltered pink and grey variety, with very few igneous intrusions. The only significant intrusion is a white pegmatite that occurs near the eastern bank of Strawberry Creek. The metamorphic rocks, found from Strawberry Creek to the end of the canyon, are predominantly schists and micro-crystalline hornfels, intruded by a number of dikes, predominantly mafic in composition. They are highly deformed and sheared and appear to follow a strong north-northwest trending shear zone.

There appears to have been a period of deformation that occurred during the Laramide Revolution when the Wind River Range was being formed. As a result of this tectonic activity, all the rocks are highly fractured and steeply dipping (ranging from 45° to vertical) in a northeasterly direction. The tilting of the rocks was probably a contributing factor in the formation of Sweetwater Canyon; it tended to confine the lateral erosion of the Sweetwater River and directed the cutting action downward, since rocks are more easily eroded parallel to zones of weakness than across.

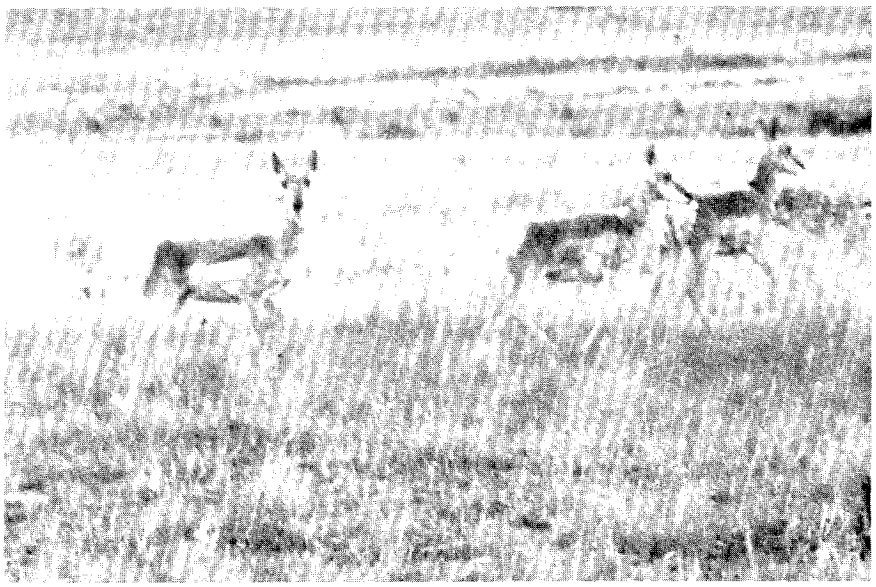
The Quaternary alluvium is confined almost exclusively to the Sweetwater River and three major tributaries--Strawberry, Granite, and Willow Creeks. The alluvial material consists largely of medium-grained gravel and medium- to fine-grained sand, up to about 10 feet (3 m) in thickness. It is composed of a fairly diverse assemblage of rocks and minerals; i.e., granite and metamorphic rock chips, quartz, garnets, zircon, magnetite, hematite, and scheelite. The Tertiary pediment gravels are thin residual deposits, derived from the older Precambrian rocks, with no indication of mineralization.

## Minerals

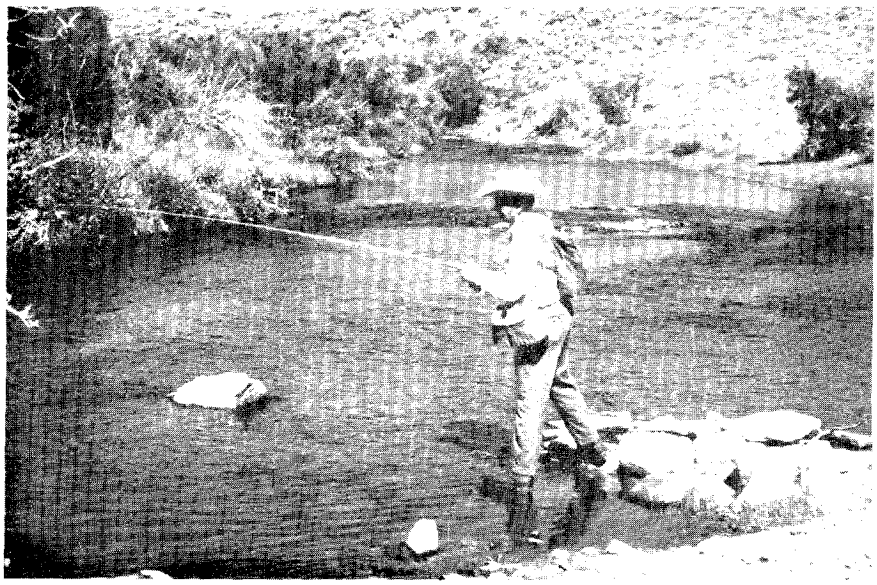
Based on field examinations, research on the geology and mining history, and laboratory results of mineral analysis, the wild and scenic river study area appears to have little potential for the discovery of commercial mineral deposits. Exploration in the immediate vicinity has been conducted for jade, uranium, and tungsten. Tungsten, in the form of very low grade sheelite ($CaWO_4$) is found in the canyon and in the surrounding area. Iron is present throughout the general vicinity, but no concentrations of ore grade iron were found. Neither uranium ore bodies nor any significant uranium mineralization has been found in the general vicinity of the canyon.

There is no record of any mineral production either from placer or lode operation. A gold dredging operation once took place at Wilson Bar, upstream from the study area, but closed down in 1943.

Sweetwater Canyon remains virtually untouched by man.



Antelope are abundant in the area.



The river offers good brown and rainbow trout fishing.

The majority of the mining claims in the area are considered to have been abandoned since most of them were not worked and assessment work was usually never filed. The Mary Ann claims (uranium, jade, and tungsten) which are located near Strawberry and Granite Creeks and the Lone Pine claims located near Wilson Bar are the only exceptions.

Limited access, combined with a small area of occurrence and little demand, serves to make sand and gravel extraction within the canyon economically impractical. In addition, the presence of gas or oil is unlikely because the sedimentary rock formation in which petroleum deposits are usually found do not occur in the vicinity.

D. SOILS

The following description of the soil resources and their behavior is based on limited on-site information and from the Soil Conservation Service's report on Wyoming soils. Most of the land is publicly owned and has not been surveyed by the Soil Conservation Service.

The soils adjacent to the Sweetwater Canyon are of soil association 3, as shown in figure II-4. Topography is rolling to steep; soils are developing in residuum and transported materials from igneous bedrocks. This association consists mainly of the shallow Lithic Cryoborolls and the very deep Typic Cryoborolls, both of which have grass-shrub cover and rock outcrops.

The Lithic Cryoborolls are represented by the series Irigul, a channery loam. The Irigul series composes 40 percent of the association, has an igneous parent material, and is generally 10 to 20 inches (25 to 51 cm) in depth. The Typic Cryoborolls are represented by the Handran series, a channery loam, and the Leavitt series, a loam. The Handran series composes 30 percent of the association, and the Leavitt composes 10 percent. Both have an alluvium parent material and are approximately 60 inches (152 cm) in depth. The remaining 10 percent of the association is rock outcrop.

Generally, this soil association is moderately permeable and has only a slight wind erosion hazard. However, the water erosion hazard can range from slight to severe. This association, therefore, has severe limitations on all agricultural use and moderate to severe limitations on other types of development. The vegetation on this soil association is predominantly grass-shrub with scattered areas of forest. Grazing and wildlife habitat are the principal uses.

The soils within Sweetwater Canyon itself are developing in residuum and are quite shallow, averaging approximately 6 inches (15 cm) in depth. The soil is coarse-textured and moderately permeable, with a severe water erosion hazard that limits development of any kind.

The coarse sand and gravel of the narrow sandbars, alluvial fans, and colluvial deposits are present primarily on the canyon floor and along some of the larger tributaries. The steep slope of the numerous small drainages which feed the Sweetwater seems to have prevented the accumulation of this material.

## E. VEGETATION

The vegetation is typical of the high plains desert and mountain foothills of central and southern Wyoming, consisting mostly of native grasses and shrubs with small pockets of trees on the canyon slopes, down the small drainages, and along the riverbank.

The study area has three major vegetation types. The first is the sagebrush-grass association, located primarily along the top of the canyon rim and on the south-facing canyon slopes. Representative species include big sagebrush, black sagebrush, rabbitbrush, bitterbrush, wheatgrass, blue grama, and bluegrass. The second type is the mixed conifer association which includes such species as the limber pine, lodgepole pine, and aspen. There are pockets of mixed conifers in the deepest part of the canyon and on the canyon slopes having a northern exposure. The third type is the alluvial or river bottom association which roughly parallels the river. In this zone are such water-loving species as the willow, birch, and cottonwood.

Wildflowers such as phlox, lupine, dandelions, shooting stars, and Indian paintbrush brighten the canyon with color during the spring, summer, and fall.

There are no threatened or endangered plant species known to exist in the canyon. However, four species listed in appendix C, table C-2 may exist in the corridor and are proposed or under consideration for possible threatened or endangered species status.

Major trees, shrubs, grasses, forbs, and wildflowers in the canyon are listed in appendix C.

## F. FISH AND WILDLIFE

A variety of fish and wildlife is supported by the Sweetwater River as it winds through Sweetwater Canyon. Much of the habitat is unaffected by human development; low visitation further enhances its value for wildlife.

The Bureau of Land Management manages wildlife habitat on public lands, and the Wyoming Game and Fish Department is responsible for the management of wildlife populations and enforcement of State hunting laws.

## Fish

The trout fishery in the Sweetwater River from Wilson Bar to Spring Creek consists of natural reproducing brown and rainbow trout. Other species of fish present in this section of stream include the white sucker, longnose sucker, mountain sucker, longnose dace, and lake chub.

The Wyoming Game and Fish Department surveyed three sections of the stream segment in 1973. The trout population was considered good and was estimated at approximately 333 trout per mile (207 trout per km) of stream. Trout species composition consisted of 68 percent brown trout and 32 percent rainbow trout.

The study segment was stocked with advanced fingerling rainbow trout in 1971 and advanced fingerling brown trout in 1972. This is the only recorded stocking and was made as a supplement to the existing natural trout fishery.

A stream habitat survey conducted in August 1975 by the Bureau of Land Management staff biologists rated the river, based on the pool-riffle relationship and the quality and quantity of pools. A good rating was recorded for 8.8 miles (14 km) of stream, and a fair rating was recorded on the remaining 0.7 miles (1 km) on the upper portion of the river near Wilson Bar.

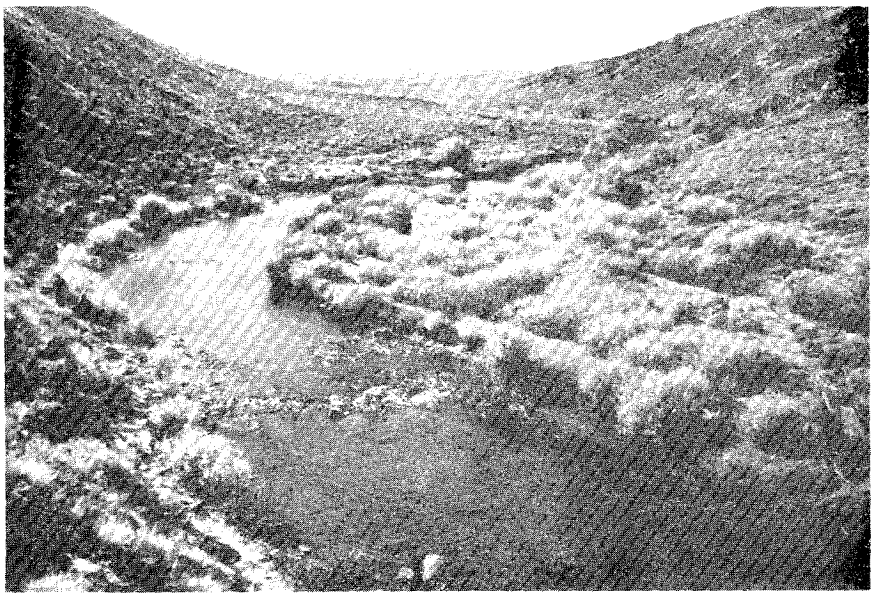
The river was also evaluated for stability, which is the resistance of the channel and banks to erosion and deterioration. Stability ratings ranged from 56 (good) to 85 (fair). Wilson Bar downstream to Strawberry Creek received a stability rating of 78 (fair). The middle part of the canyon, Strawberry Creek downstream to Willow Creek, had an average stability rating of 68 (good). The segment from Willow Creek to the mouth of the canyon received a rating of 84 (fair).

According to the Wyoming Game and Fish Department, a lack of nutrients is a factor limiting the trout population in the Sweetwater River.

There are no threatened or endangered fish species known to exist in the Sweetwater River drainage.

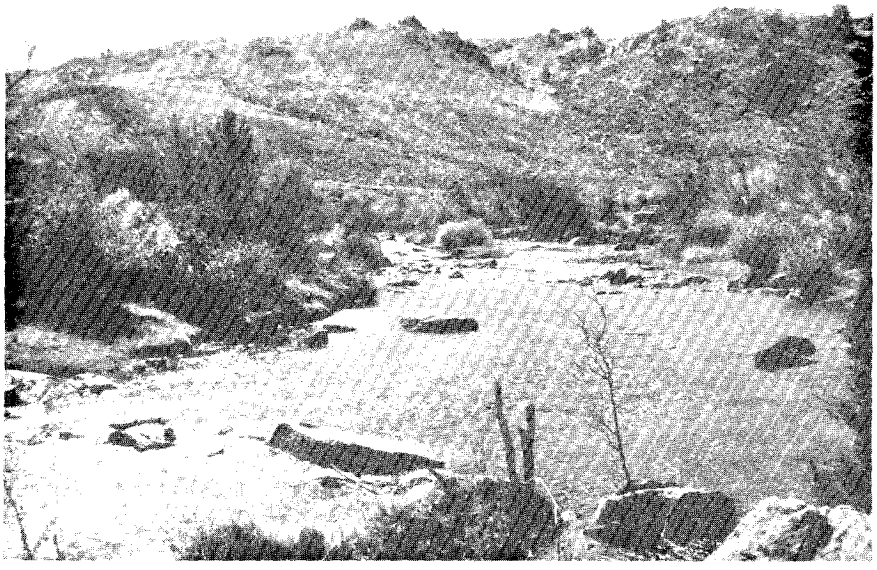
## Wildlife

Approximately 30-50 antelope inhabit the rim country on either side of the Sweetwater Canyon. Wet meadows in and adjacent to the canyon provide forage during the spring, summer, and fall; the herds winter on the desert south of the canyon.



Sweetwater Canyon opens onto the surrounding high plains desert.

Moose can often be found in the canyon.



The Sweetwater River in the vicinity of Strawberry Creek

Forty to sixty mule deer use the canyon as year-long range. Summer habitat is provided by the wet meadows in and adjacent to the canyon. Browse vegetative species such as black sage, silver sage, and squawberry are present on the south and west facing slopes and provide deer with important winter forage.

As many as a dozen moose also winter in the canyon, feeding primarily on the willows along the river. Some of these moose can be found in the canyon throughout the year. The density and productivity of these willow stands are the two major factors limiting the size of the Sweetwater moose herd. Elk may occasionally use the canyon during the winter months but usually remain at higher elevations.

The lands also furnish limited habitat for sage grouse, a widely hunted small game species. Mallards, pintails, green-winged teals, and the common merganser nest in the canyon and use it on their migratory flights south over the central flyway. However, the ducks cannot winter in the canyon because the river usually freezes over.

Habitat for golden eagles, prairie falcons, and hawks exists in the canyon. One prairie falcon nesting site has been identified. In addition, the upland plover, poorwills, belted kingfisher, red shafted flicker, horned lark, and violet green swallow are among the many species that have been sighted.

Numerous other mammals, reptiles, and amphibians live in the canyon. A list of species known or thought to exist in the area is given in appendix C.

The endangered American peregrine falcon (Falco peregrinus anatum), bald eagle (Haliaeetus leucocephalus), and black-footed ferret (Mustela nigripes) may be occasional visitors to the canyon area, although there have been no documented sightings of these species.

## G. WATER

### Surface Water

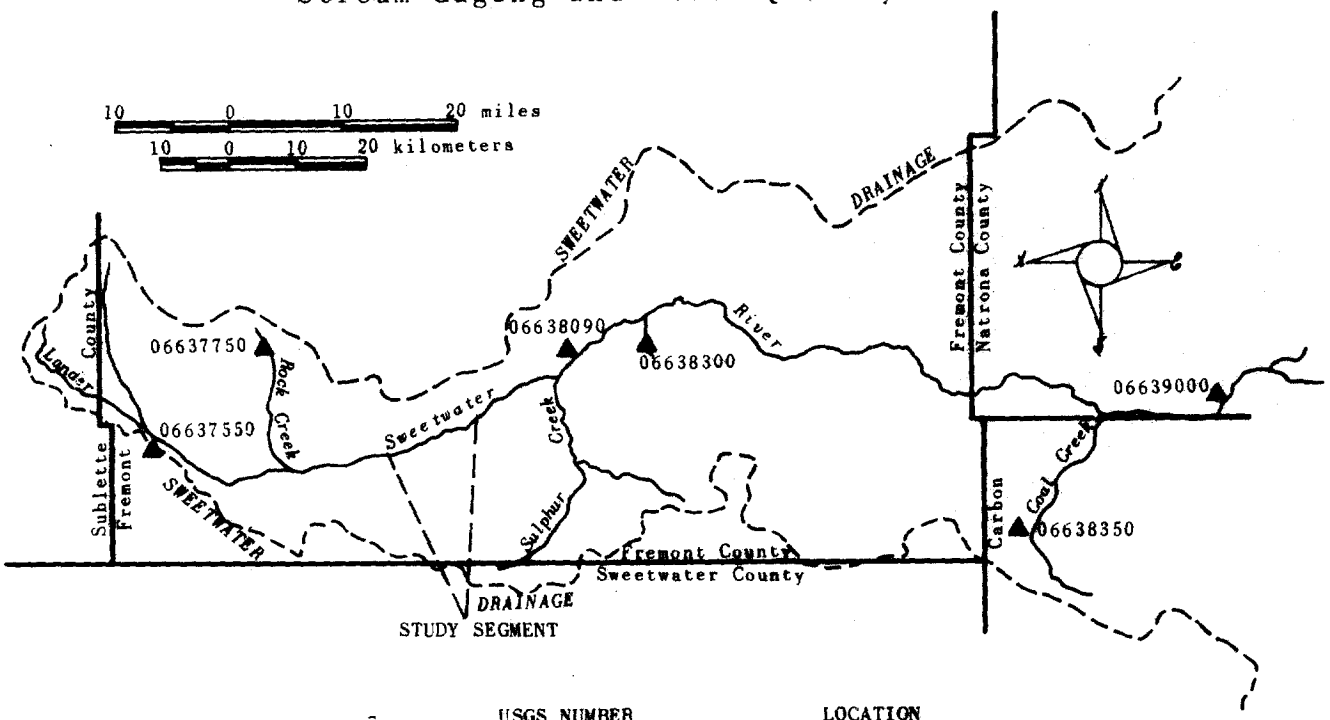
The pattern of flow of the Sweetwater River is erratic, showing a high spring discharge due to snowmelt, moderate summer flows, and low winter discharges. Daily flows vary considerably because of weather variations which affect the snowmelt. Thunderstorms will occasionally cause flash floods that have high peak discharges but produce little to affect the total annual runoff of about 91,000 acre feet (112 million $m^3$).

The location of stream gaging and water quality stations within the Sweetwater drainage during 1977 is shown in figure III-2. Year-round, long-term readings are available from the station near Alcova for the water years 1914 to 1924 and 1939 to 1973. Average

Figure III-2

# SWEETWATER WILD AND SCENIC RIVER STUDY
# FREMONT COUNTY, WYOMING

## Stream Gaging and Water Quality Stations




| | USGS NUMBER | LOCATION |
|---|---|---|
| STANDARD USGS GAGING STATIONS | 06637750 | Rock Creek above Rock Creek Reservoir |
| | 06638090 | Sweetwater River near Sweetwater Station |
| | 06639000 | Sweetwater River near Alcova (also water quality monitoring) |
| PEAK FLOW PARTIAL RECORD USGS GAGING STATIONS | 06637550 | Sweetwater River near South Pass City |
| | 06638300 | West Fork Crooks Creek near Jeffrey City |
| | 06638350 | Coal Creek near Muddy Gap |

monthly and annual discharge patterns at this gage are shown in figures III-3 and III-4. During this period, over 70 percent of the average annual streamflow, 126 cubic feet per second ($ft^3/s$) (3.6 cubic meters per second - $m^3/s$), measured at the Alcova gaging station occurred during April, May, and June.

## Groundwater

Groundwater is a potentially significant resource and contributes substantially to the flow of the Sweetwater. The groundwater is used for domestic, stock, industrial, and municipal water supplies. Most of the water is of high quality, and according to the U. S. Geological Survey has a concentration of less than 350 parts per million of total dissolved solids in water found to a depth of 200 feet (61 m). Figure III-5 shows the geologic formations and their groundwater potential for the Sweetwater drainage.

## Water Quality

The water quality standards adopted by the State of Wyoming in July 1974 are currently being revised. However, the present standards are summarized in table III-1 and classify waters as I, II, or III.

Class I waters are those which support game fish or have the hydrologic and natural water quality potential to support game fish. Class II waters support nongame fish or have the hydrologic and natural water quality potential to support nongame fish. Class III waters do not have the hydrologic or natural water quality potential to support fish.

Water quality of the Sweetwater has been evaluated by the Wyoming Department of Environmental Quality against State standards and has been found to meet the criteria of Class I waters. In fact, snowfields in the headwaters of the river yield waters so clear and pure it is said to have caused travelers on the Oregon Trail to name the river "Sweetwater."

## Water Rights

Water rights in Wyoming are based upon the doctrine of prior appropriation. Under this system, water rights are acquired by making appropriations to apply water to beneficial uses and are awarded priorities according to appropriation dates. Water rights with earlier appropriation dates have prior rights and are "senior" to water rights with later appropriation dates. When the water supply is limited, senior water rights are satisfied first on a priority basis. Beneficial uses include domestic, agricultural, industrial, wildlife, and impoundment of water for recreation purposes.

Figure III-3

AVERAGE MONTHLY FLOW[1]

SWEETWATER RIVER NEAR ALCOVA, WYOMING

Water Years 1914-1924 and 1939-1973

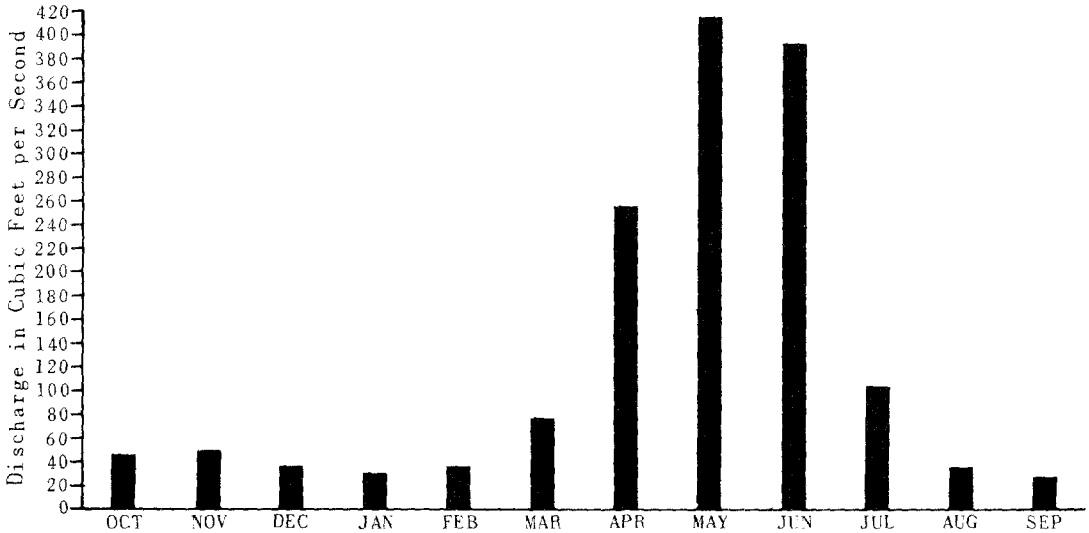
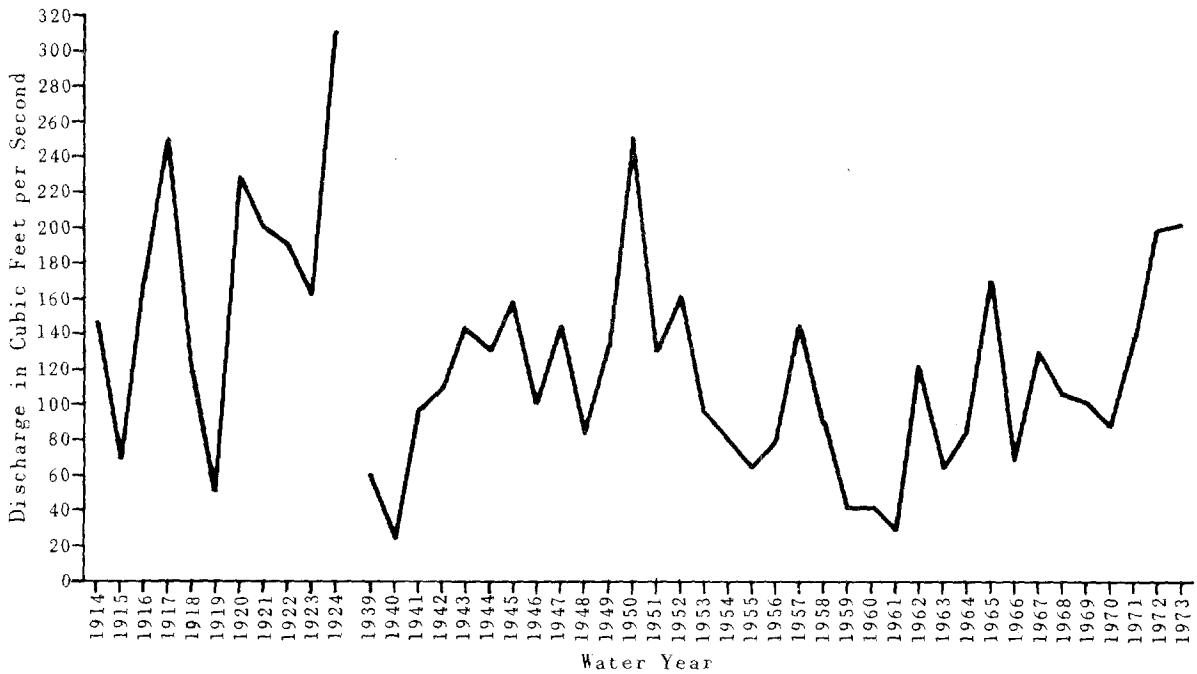



Figure III-4

AVERAGE ANNUAL FLOW[1]

SWEETWATER RIVER NEAR ALCOVA, WYOMING

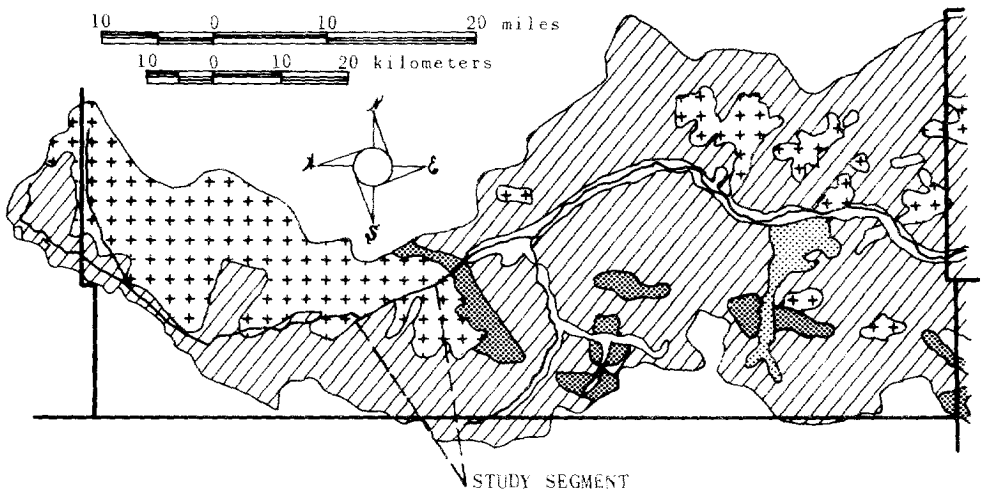
Water Years 1914-1924 and 1939-1973




[1] SOURCES: USGS Gaging Station No 06639000

Figure III-5

# SWEETWATER DRAINAGE
# FREMONT COUNTY, WYOMING
## Geologic Map Showing Groundwater Potential




Quaternary sediments-sand deposits are not considered to be reliable aquifers.

Quaternary sediments-flood plain alluvium and valley fill yield less than 500 gpm from depths to 100 feet.

Tertiary formations-consolidated sandstones and conglomerates may yield up to 1,000 gpm from depths to 1,000 feet.

Pre-Tertiary formations-sandstone, limestone, and fractured shale may yield up to 1,000 gpm, from depths to 5,000 feet. Flowing artesian wells are possible.

Igneous rocks are not normally aquifers.

Table III-1

WYOMING WATER QUALITY STANDARDS

| Criteria | CLASS STANDARDS | | |
|---|---|---|---|
| | I | II | III |
| Undissolved Solids, Taste, Odor, Color, & Toxic Materials | Free from | Free from | Free from |
| Oil and Grease | 10 mg/l max. or cause film, discoloration, or deposits | Same as I | Same as I |
| Radioactive Materials | Maximum of 3 pCi/l of Ra 226, 10 pCi/l of SR 90, or Drinking Water Standards | Same as I | Same as I |
| Fecal Coliform Bacteria | In lakes at altitude less than 7000' (2134 m) and some streams, geometric mean of <200/100 ml from 5 samples in 30-day period<br><br>In other obides of water, geometric mean of <1,000/100 ml from 5 samples in 30-day period | Same as I | Same as I |
| Turbidity | No increase of more than 10 J.T.U. | Same as I | Same as I |
| Dissolved Oxygen | Minimum of 6 mg/l | Minimum of 5 mg/l | * |
| pH | 6.5 - 8.5 | Same as I | Same as I |
| Temperature | Normal Max. 68°F (20°C): Max. change 2°F (1°C)<br>Normal Max. >68°F (20°C): Max. change:<br>Cold Streams, 2°F (1°C) - Total not >78°F (26°C)<br>Warm Streams, 4°F (2°C) - Total not >90°F (32°C)<br>Lakes, 2°F (10°C) | Same as I | * |
| Total Gas Pressure | Max. of 110% of atmospheric pressure | Same as I | Same as I |

*No standards established.

Data obtained from the Wyoming State Engineer's Office indicate that there are over 220 $ft^3/s$ (6 $m^3/s$) of total annual appropriations for nearly 100 decreed water rights on the main stem of the Sweetwater, as shown in appendix D. Most of these are for stock, domestic, and industrial use. There are 12 upstream water rights which appropriate about 20 $ft^3/s$ (0.6 $m^3/s$). However, there are no water rights to allow diversions within the 9.5-mile-long (15.3-km-long) study corridor.

The Sweetwater River is one of the North Platte River tributaries affected by the mandate of the U. S. Supreme Court's 1945 North Platte River Decree. The decree limits irrigation in Wyoming on the main stem of the North Platte River above Guernsey Reservoir and the North Platte tributaries above Pathfinder Dam to 168,000 acres (680 $km^2$) of land, exclusive of the Kendrick Project. Exclusive of Seminoe Reservoir, not more than 18,000 acre-feet (22 million $m^3$) of irrigation water may be stored in Wyoming on the North Platte River and its tributaries above Pathfinder Reservoir in any water year. The decree severely limits the possibility of any irrigation water storage projects on the Sweetwater, since about 157,000 acres (635 $km^2$) are being irrigated within the decree area and a storage capacity in excess of 18,000 acre-feet (22 million $m^3$) has been constructed.

Water Resource Development

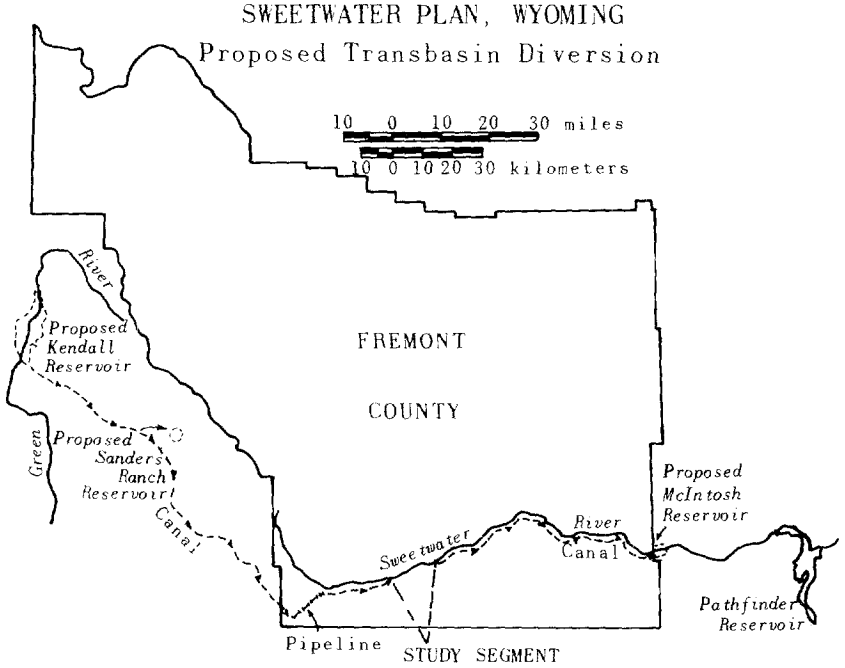
Because of the North Platte River Decree, no storage sites for improved irrigation water supplies in the Sweetwater drainage have been investigated. However, several proposed plans of Green River water development could divert water into the Sweetwater basin. Under one plan, water would be diverted from the proposed Kendall Reservoir and pumped over the Continental Divide at South Pass. In another plan, water would be diverted from the proposed Sanders Ranch Reservoir into the Sweetwater drainage. In each plan the water would be conveyed by a combination of a canal and the channel within Sweetwater Canyon to the proposed McIntosh Reservoir on the lower Sweetwater River, as shown in figure III-6. Releases from McIntosh Reservoir would flow in natural river channels to Pathfinder Reservoir on the North Platte River.

The amount of water ultimately made available to Wyoming under the Colorado River and Upper Colorado River compacts and the projects actually constructed in the Green River basin would determine the amount of water available for possible diversion into the North Platte River basin. According to the Wyoming State Engineer's report of September 1971, Water and Related Land Resources of the Platte River Basin, at least 93,000 acre-feet (115 million $m^3$) of water would probably be available for diversion to the North Platte River basin from the Green River. The report also states that under current conditions the costs of the transbasin diversion are considered too high to warrant utilizing this water strictly for irrigation purposes.

Figure III-6

SWEETWATER PLAN, WYOMING

Proposed Transbasin Diversion



Therefore, any irrigation water costs must be subsidized with mining or industrial use of the imported water, should such importation occur. However, there are no investigations of water diversions currently being conducted, and the State of Wyoming has requested that only diversions below the town of Green River be considered.

## H. RECREATION AND AESTHETICS

### Recreation

Although there are no developed sites, a limited amount of camping and picnicking takes place within the study corridor via four-wheel-drive roads. Use is concentrated at each end of the canyon and at Strawberry Creek. Hiking and backpacking are possible throughout the canyon, but use is low. Bureau of Land Management has no plans for development of campgrounds, picnic grounds, trails, or interpretive centers in the area.

The Sweetwater River from Wilson Bar to Spring Creek offers the angler a high-quality fishing experience. Fishing for rainbow and brown trout is of sufficient quality for the Wyoming Game and Fish Department to rate the study segment as an above-average fishery. However, due to the inaccessibility of the area and an abundance of good fisheries elsewhere in the region, total use is quite low.

Because of low flows, steep gradients, the presence of many large boulders in the channel, and the relative inaccessibility of the river, float trips are rarely undertaken. During the spring when discharges are extremely high, the river could possibly be floated by experts, but the "flood" conditions make any attempts very dangerous.

According to visitor counts and traffic counter readings, the area receives its heaviest use during the fall hunting seasons and during summer weekends. The Bureau of Land Management estimates use at 1,500 visitor days in the canyon during 1977.

Mule deer are hunted within the canyon, and the principal small game species is the cottontail rabbit. Sage grouse are also hunted but are not as plentiful as in other parts of the county.

Organized, noncommercial groups occasionally use the canyon in conjunction with wagon train treks along the historic transportation corridor in the lower end of the area.

The National Outdoor Leadership School (NOLS) in Lander conducts outdoor education courses in the canyon. In 1975 their use totaled 280 visitor days; in 1976, 694 visitor days; and in 1977 their use is expected to total about 660 visitor days. The canyon receives a small amount of additional commercial use by a flyfishing outfitter, which should total about 40 visitor days in 1977.

## Aesthetics

The basic appeal of the canyon is the feeling of uncluttered open space, isolation, and peacefulness. The canyon can be better appreciated when compared to its surroundings, the western semi-arid high plains. A contrast in color and texture with the surrounding desert environment is provided, imparting bright green and blue hues to the landscape in summer, and blue, gold, and brown in the fall. Steep rock walls also contrast with the nearby smooth rolling hills.

# I. LAND OWNERSHIP AND USE

## Land Ownership

As shown in table III-2 and figure III-1, approximately 91 percent of the acreage is federally owned, 6 percent is privately owned, and 3 percent is State owned. The entire 2,176 acres (8.8 $km^2$) of Federal land are administered by the Bureau of Land Management. The one private land holding lies on Spring and Chimney Creeks; the 64 acres (0.3 $km^2$) of State land at Wilson Bar is school land which has been leased for livestock grazing. Only about one-quarter mile (0.4 km) of the river flows through private land; the remainder flows through public land.

TABLE III-2

LAND OWNERSHIP
Sweetwater Study Area
Fremont County, Wyoming

| | BLM | State | Private | TOTAL |
|---|---|---|---|---|
| Linear River Miles (km) | 9.2 (14.8) | 0 | 0.3 (0.5) | 9.5 (15.3) |
| Acres ($km^2$) | 2,176.0 (8.8) | 64.0 (0.3) | 153.6 (0.6) | 2,393.6 (9.7) |
| Percent of Total Acreage | 90.9 | 2.7 | 6.4 | 100.0 |

In addition to recreational and wildlife uses, the canyon is also used for livestock grazing, especially in the Wilson Bar, Strawberry Creek, and Chimney Creek areas where water and wet meadows are present.

Although there are trees scattered throughout, it is unlikely they would constitute a timber resource. It would be economically impractical to remove the trees because of poor access, limited timber, low market demand, and distance from the site to the nearest sawmill and market.

There are about 70-75 mining claims for jade, tungsten, and/or gold. However, none are actively developed, and only about 10 are of recent establishment.

A total of 601.6 acres (2.4 $km^2$) in two sections in the lower area, as shown in figure III-1, has been withdrawn from mining by the Bureau of Land Management to protect portions of the Oregon Trail.

## J. CULTURAL RESOURCES

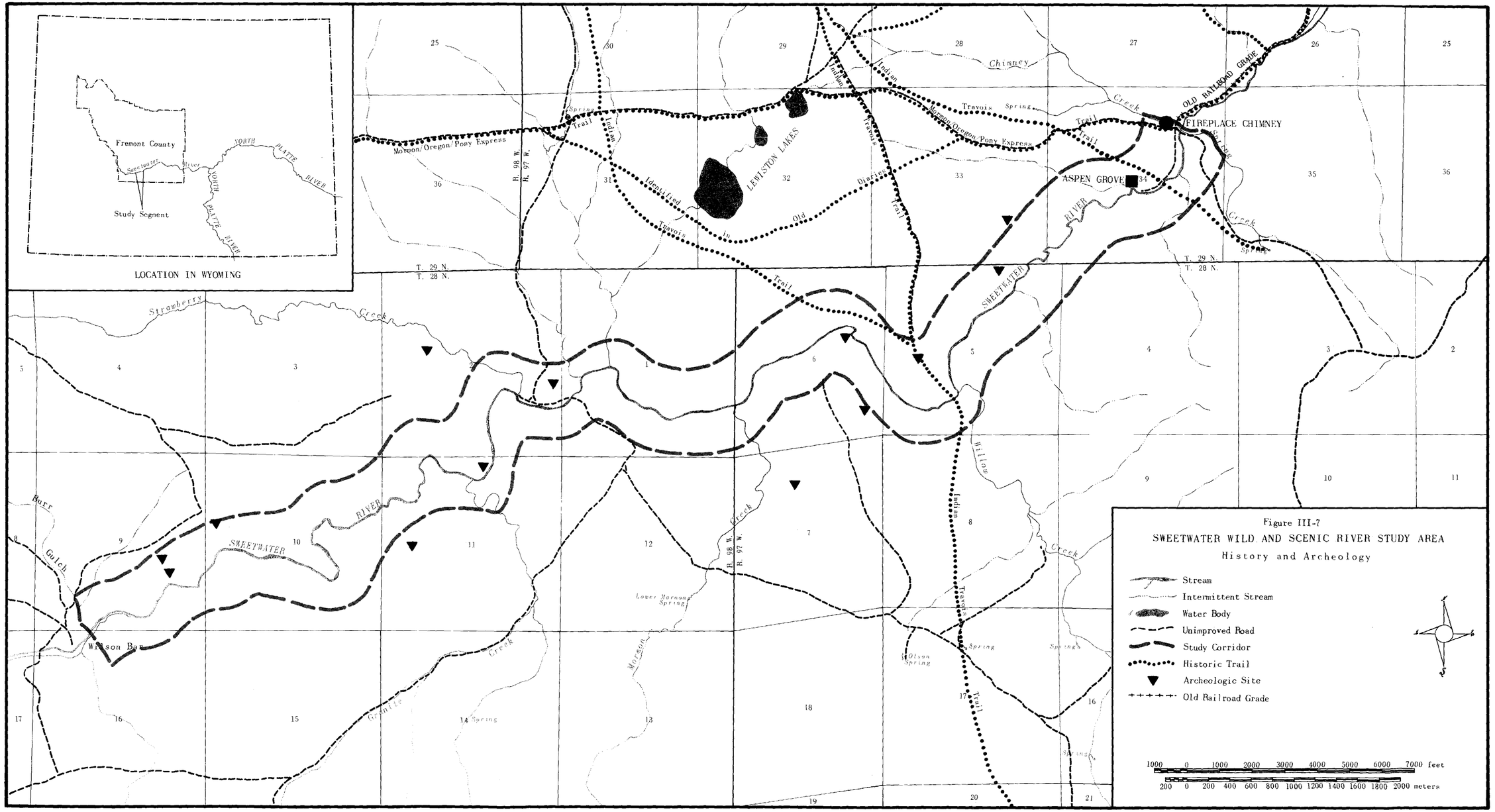
### Archeology

In 1975 all terrain features in Sweetwater Canyon were sampled by a BLM staff archeologist. The 13 sites identified, as shown in figure III-7, were probably one-time occupation sites used for a very short period. Numerous sites probably existed along or near the river's edge, but periodic water inundation has covered or destroyed all evidence of those locations.

The Wyoming State Archeologist believes many more sites probably exist and recommends a complete surface survey be done before any conclusions are reached regarding the archeological value of the area.

### History

The first white men known to have visited the canyon were a party of 11 fur trappers led by Jedediah Smith. They had been given directions by the Crow Indians and were headed toward the Green River over South Pass to trap for Ashley and Henry's Rocky Mountain Fur Company. Other well-known members of the party included William Sublette, Tom Fitzpatrick, and James Clyman. A winter storm prevented them from crossing South Pass, so they turned eastward and proceeded down the Sweetwater River. The party found shelter in a grove of aspen in the canyon and stayed there for 2-3 weeks during February and March of 1824. The historic aspen grove is thought to be located in T.29N., R.97W., Section 34, in the NE 1/4 of the SW 1/4, as shown in figure III-7. A cache containing powder and lead was left, and it was agreed to reassemble there by June 1. Returning after a successful season of trapping, the men dug up the cache, built two "bull boats," loaded their furs, and floated down the Sweetwater.


Fremont County
Sweetwater River
NORTH PLATTE RIVER
SOUTH PLATTE RIVER
Study Segment
LOCATION IN WYOMING
Mormon/Oregon Pony Express
Indian Trail
Identified Travois Trail
Old Diarists Trail
LEWISTON LAKES
Chimney Creek
Travois Spring
OLD RAILROAD GRADE
FIREPLACE CHIMNEY
ASPEN GROVE
SWEETWATER RIVER
Strawberry Creek
Burr Gulch
Wilson Bar
Granite Creek
Lower Mormon Spring
Mormon Creek
Willow Creek
Olson Spring
Springs
T. 29 N.
T. 28 N.
R. 98 W.
R. 97 W.
Figure III-7
SWEETWATER WILD AND SCENIC RIVER STUDY AREA
History and Archeology
Stream
Intermittent Stream
Water Body
Unimproved Road
Study Corridor
Historic Trail
Archeologic Site
Old Railroad Grade
1000 0 1000 2000 3000 4000 5000 6000 7000 feet
200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 meters

Indian trails cross the canyon, as shown in figure III-7. Travois trails led to several fording places along the river, and it was one of these ancient trails that led the fur trappers into the area to the aspen grove.

The historic transportation corridor which contains the Oregon, Mormon, and California Trails, as well as the Pony Express, Overland Telegraph, and Overland Stage routes, passes through the lower end of the study area, turns northwestward at Chimney Creek, then runs parallel to the canyon about a mile and a half to the north, as shown in figure III-7. The corridor was used by thousands of people during the westward expansion and gold rush days to traverse the Sweetwater Valley and cross the Continental Divide at South Pass.

In 1851 a stage line was established over the Oregon/Mormon/California Trails to carry mail and passengers from St. Joseph, Missouri, to Salt Lake City, Utah. In later years the stage line was acquired by Ben Holladay and became known as the Overland Stage. Indians frequently seized the Overland stages, and in 1862 Holladay shifted his stage line to the Overland Trail in southern Wyoming.

In 1860 the Pony Express began delivering mail from St. Joseph, Missouri, to Sacramento, California, using the California Trail route. By October 1861 the Overland Telegraph was completed, following the same trail from St. Joseph to Sacramento. This faster means of communication ended the Pony Express. The telegraph line was moved to the Overland Trail in 1865.

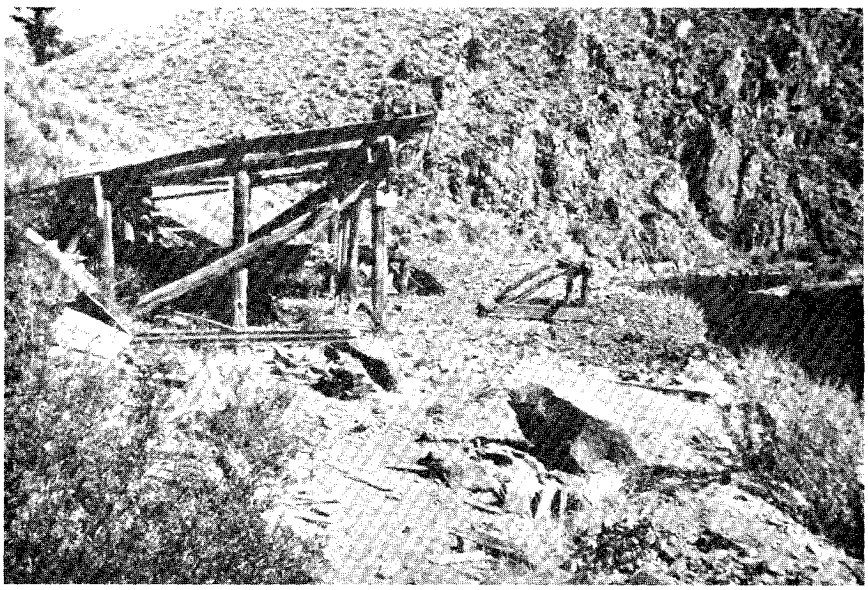
Exploration for gold in the general vicinity is said to have begun in 1842 with the discovery of placer gold along Strawberry Creek.

There is no record of any gold ever having been placer-mined from within the canyon itself, though there may have been some prospecting.

A little over a mile of railroad grade and tracks was constructed just below Sweetwater Canyon, as shown in figure III-7. Most of the evidence offered by several major railroads and in several editions of Henry V. Poor's Manual of the Railroads of the United States indicates that the grading was done by the Wyoming and Eastern Railroad about 1889. As late as 1958 some remains of the grade, track, and ties could still be found.

The chimney at the lower end of the canyon, near Chimney Creek.

The Oregon/Mormon/California Trail and Pony Express route passed through the study area.



The entrance to this abandoned mine is one of the few signs of man's presence within Sweetwater Canyon.

# CHAPTER IV

# ELIGIBILITY AND CLASSIFICATION

## A. ELIGIBILITY

The 9.5-mile (15.3-km) segment of the Sweetwater River from Wilson Bar downstream to Spring Creek was evaluated by the interdisciplinary study team using the data presented in chapters II and III. Results of the field survey were also important in evaluating the river. This evaluation was in accordance with the requirements of the Wild and Scenic Rivers Act and the general criteria contained in the joint Department of the Interior/Department of Agriculture "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas . . ." as shown in appendix A. These documents state that in order for a river to be eligible it must possess one or more outstandingly remarkable values, it must be free flowing, it must meet certain criteria for water quality and volume, and it must be of a length sufficient to provide a meaningful experience.

### Outstanding Values

A river is eligible for inclusion in the system if it possesses one or more outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. Because neither the Act nor the Guidelines define an "outstandingly remarkable value," an accepted definition has developed through the course of numerous river studies. Outstandingly remarkable values are those which are of national importance or are unique or rare when compared with similar areas. Each of the categories is discussed below.

Scenic Values - The Bureau of Land Management conducted a survey of the scenic qualities of the study segment by evaluating land form, color, water, vegetation, intrusions, and uniqueness. This survey rated the Sweetwater River as having high, but not excellent, scenic value. Based on field observations, the study team concurred with this evaluation.

Recreational Values - The river provides the hunter, camper, fisherman, and hiker with a pleasant experience in a virtually untouched area. However, the local availability of large tracts of public land (Forest Service, BLM, and State) provides what many people believe to be superior recreational experiences. Therefore, when placed in a regional context, the recreational experience within Sweetwater Canyon was not considered outstandingly remarkable.

Geologic Values - The geologic values of the river were found by a BLM geologist to be of average quality. The Precambrian granite and metamorphosed sediments are not unique or unusual formations. The lack of extractable minerals rendered the mineral values of the corridor extremely low.

Fish and Wildlife Values - The Wyoming Game and Fish Commission has rated the fish qualities of the study segment as above average but not of the highest quality. Wildlife values were rated as excellent because of the presence of several big game species, including moose, deer, and antelope. Nevertheless, these values were not considered to be outstandingly remarkable when compared to those of many areas within the region.

Historic Values - The historic values were determined to be outstandingly remarkable for several reasons. The Oregon and Mormon Trails, which have been recommended for National Historic Trail designation, are within the study corridor. Also, the California Trail, the Pony Express and Overland Stages routes, and the Overland telegraph line passed through the corridor. The Sweetwater Canyon also has a notable place in the history of William H. Ashley's fur trappers, who helped open the West.

Archeologic Values - According to a 1975 BLM archeological survey, the 13 sites identified were one-time occupation sites. The Wyoming State Archeologist believes that there are probably more sites within the canyon, and a comprehensive survey should be done. However, these sites, although valuable, are not uncommon to the area.

Free Flowing

As defined in the Act, free flowing means ". . . without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. However, low dams, diversions, works, or other minor structures will not automatically preclude the river unit from being included . . . ." This statement is interpreted as referring only to impoundments located in that portion of the river under study. There are no impoundments or diversions within the study segment of the Sweetwater River, and therefore it is free flowing.

Water Quality

The Guidelines state that (1) "The river should be of high quality water or susceptible for restoration to that condition," and (2) that "Wild river areas can be included in the national system only if they meet the minimum criteria for primary contact recreation except as these criteria might be exceeded by natural background conditions." As shown in table III-1, the Sweetwater meets the minimum criteria for primary contact recreation.

Water Volume

The Guidelines state that "There should be sufficient volume of water during normal years to permit, during the recreation season, full enjoyment of water-related outdoor recreation activities generally associated with comparable rivers." Water volume in the Sweetwater River is insufficient for float boating and varies between monthly averages of about 31 cfs (0.9 $m^3/s$) and 415 cfs (11.8 $m^3/s$). However, this flow is typical of similar western rivers and allows the Sweetwater to support a good trout fishery.

Length

The Guidelines state that "The river or river unit must be long enough to provide a meaningful experience. Generally, any unit included in the system should be at least 25 miles (40 km) long. However, a shorter river or segment that possesses outstanding qualification may be included in the system." The portion of the Sweetwater River under study is 9.5 miles (15.3 km) long, which is only 38 percent of the recommended minimum length. Although the river possesses excellent fish and wildlife values, the only outstandingly remarkable values found were historic qualities. These values were determined to be of insufficient significance to be considered the "outstanding qualifications" necessary to warrant waiver of the length criterion.

Table IV-1 summarizes how these characteristics were evaluated in determining whether the Sweetwater River was eligible for inclusion in the National Wild and Scenic Rivers System.

B. CLASSIFICATION

As can be seen in table IV-1, length was the only criterion that rendered the Sweetwater River study segment ineligible for inclusion in the National Wild and Scenic Rivers System. However, the adjacent 46-mile-long (74-km-long) portion of the Sweetwater River upstream from Wilson Bar to the headwaters has been recommended for study for possible inclusion in the system by the Administration. Therefore, it was appropriate to determine which protective classification (wild, scenic, or recreational) the river would be suitable for should a contiguous segment be studied and found eligible for inclusion in the Wild and Scenic Rivers System.

The characteristics of the study segment were evaluated against the specific criteria for each classification as presented in the Act and Guidelines. In summary, these criteria are as follows:

Wild river areas - Those rivers or sections of rivers that are free of impoundments, generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Table IV-1

SUMMARY OF ELIGIBILITY
Sweetwater River
Fremont County, Wyoming

| Criteria | Characteristics | Meets Criteria |
|---|---|---|
| Free-flowing nature affected by: | | |
| Impoundments | No | Yes |
| Diversions | No | |
| Road fills | No | |
| Length: | | |
| At least 25 miles (40 km) long | No | No |
| Water quality suitable for: | | |
| Primary contact recreation | Yes | Yes |
| Secondary contact recreation | Yes | |
| Water aesthetics | Yes | |
| Fish and aquatic life propagation | Yes | |
| Outstandingly remarkable: | | |
| Scenic values | No | Yes |
| Recreational values | No | |
| Geologic values | No | |
| Fish and wildlife values | No | |
| Historic values | Yes | |
| Archeologic values | No | |

ELIGIBILITY FOR NATIONAL WILD AND SCENIC RIVERS SYSTEM: Not eligible due to short length.

Scenic river areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational river areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The above criteria can be summarized as follows:

1. Water quality
2. Free-flowing characteristics
3. Accessibility
4. Shoreline development

As previously stated, the Sweetwater River has excellent water quality and is free flowing through the entire study area. Therefore, the key factors used to determine the classification level were accessibility and the amount of shoreline development.

The study segment is generally inaccessible, with primitive 4-wheel-drive roads at both ends and at one place in approximately the center of the segment.

The shorelines are essentially primitive, being free of habitation and other substantial evidence of intrusions with the exception of an old mine entrance near Wilson Bar. The study segment, therefore, meets the criteria for "wild" classification.

C. SUMMARY

The Sweetwater River from Wilson Bar to Spring Creek was determined to be ineligible because of failure to meet the length criteria set forth in the Guidelines. However, the river was found to be free flowing, have excellent water quality, and possess outstandingly remarkable historic values. Therefore, it was determined that should a contiguous portion of the river be studied and found eligible, this segment would qualify as a "wild" river.

In the event that this portion of the Sweetwater is designated as a component of the National Wild and Scenic Rivers System, the present land uses of grazing and dispersed recreation would not be affected. In addition, there are no other foreseeable uses of the land or water that would be enhanced, foreclosed, or curtailed by inclusion in the national system.

The Bureau of Land Management manages over 90 percent of the 2,394 acres (9.3 $km^2$) within the study corridor and should continue as the management agency if this river reach were included in the national system.

A cooperative agreement could be executed with the State of Wyoming to ensure that management of the 64 acres (0.3 $km^2$) of State land within the corridor is compatible with "wild" designation.

The cost of acquiring scenic easements on the remaining 153.6 acres (0.6 $km^2$) of private land would be approximately $50,000. The initial administrative cost of preparing a management plan, printing a map and brochure, and placing signs in the area would be about $500. No additional administrative, operation, or maintenance costs would be involved.

# CHAPTER V

# CONCLUSIONS AND RECOMMENDATIONS

## A. CONCLUSIONS

The 9.5-mile (15.3-km) segment of the Sweetwater River from Wilson Bar downstream to Spring Creek was found ineligible for inclusion in the National Wild and Scenic Rivers System because of its failure to meet the minimum length criterion of 25 miles (40 km). This criterion is set forth in the U. S. Department of the Interior/U. S. Department of Agriculture "Guidelines for Evaluating Wild, Scenic, and Recreational River Areas Proposed for Inclusion in the National Wild and Scenic Rivers System Under Section 2, Public Law 90-542," shown in appendix A.

Although the river was found to be free flowing, have excellent water quality, and possess outstandingly remarkable historic values, a determination was made that these were of insufficient quality and significance to constitute the "outstanding qualifications" necessary for a river segment only 9.5 miles (15.3 km) long to be eligible.

## B. RECOMMENDATIONS

Based on the above conclusions, the Sweetwater River from Wilson Bar downstream to Spring Creek is not recommended for designation as a component of the National Wild and Scenic Rivers System.

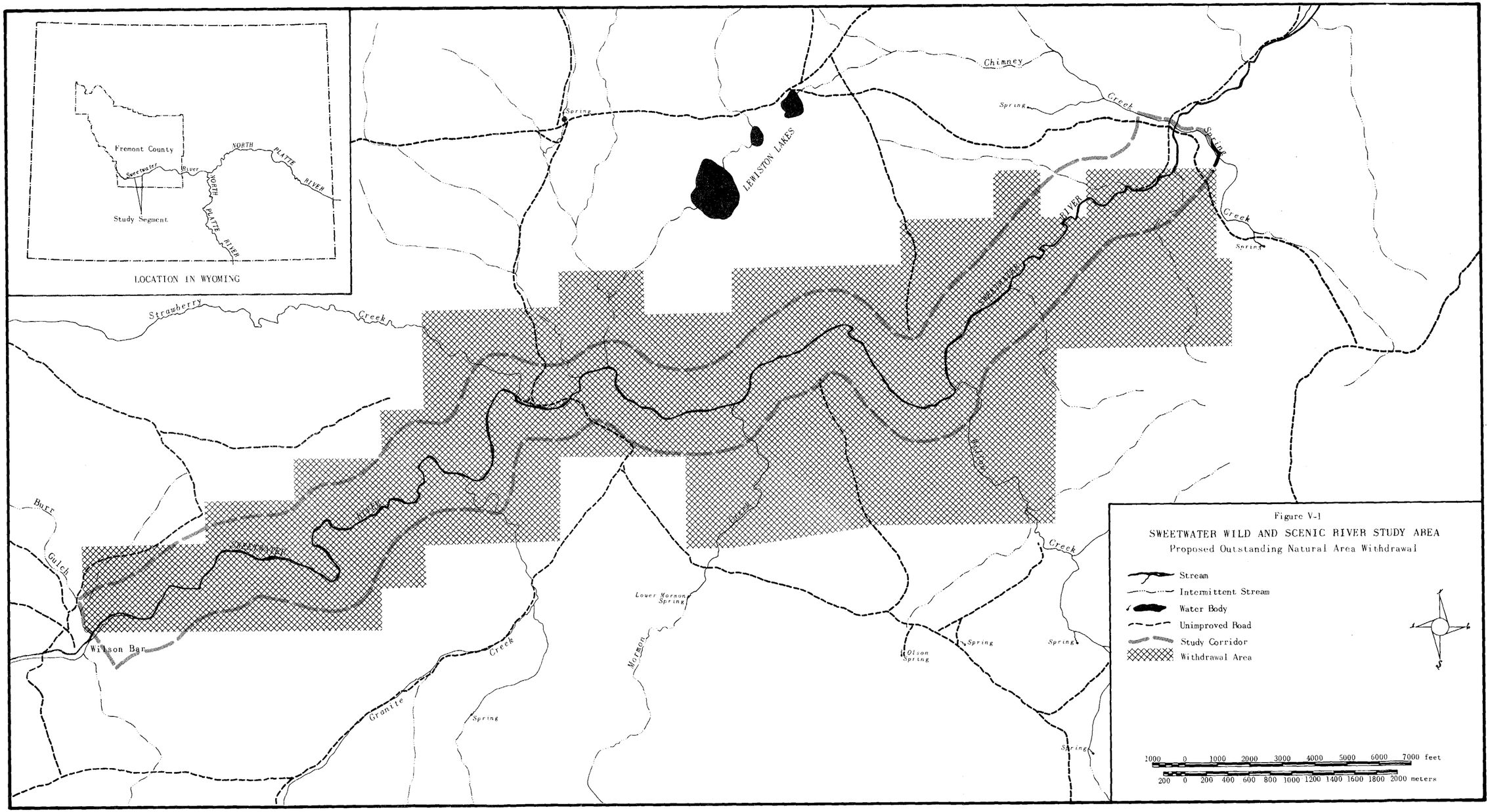
However, should a contiguous portion of the river be studied and found eligible, this segment would qualify for inclusion as a "wild" river and is recommended for designation as such.

The existing values of the Sweetwater Canyon are further recommended for protection by management as an "Outstanding Natural Area" by the Bureau of Land Management. The Code of Federal Regulations, 1976, title 43, subpart 6225, defines an "Outstanding Natural Area" as having been

> . . . established to preserve scenic values and areas of natural wonder. The preservation of these resources in their natural condition is the primary management objective. Access roads, parking areas and public use facilities are normally located on the periphery of the area. The public is encouraged to walk into the area for recreation purposes wherever feasible . . . . No person shall use, occupy, construct or maintain improvements in natural areas in a manner inconsistent with the purpose for which the area is established; nor shall he use, occupy, construct or maintain improvements unless permitted by law or authorized by the regulations of this subpart.

The BLM is submitting a request to withdraw 4,818.37 acres (19.5 $km^2$) adjacent to the study corridor for management as an "Outstanding Natural Area." The proposed withdrawal is shown in figure V-1 and includes most of the segment of the Sweetwater River under study.

The management objectives of such a withdrawal are in accordance with the purpose and intent of the Wild and Scenic Rivers Act and would not preclude future wild and scenic river designation.


Fremont County
Sweetwater River
NORTH PLATTE RIVER
Study Segment
LOCATION IN WYOMING
Chimney Spring
Creek
Spring
LEWISTON LAKES
SWEETWATER RIVER
Strawberry Creek
Spring
Buff Gulch
Wilson Bar
Granite Creek
Spring
Lower Morson Spring
Morson Creek
Olson Spring
Spring
Spring
Spring
Figure V-1
SWEETWATER WILD AND SCENIC RIVER STUDY AREA
Proposed Outstanding Natural Area Withdrawal
Stream
Intermittent Stream
Water Body
Unimproved Road
Study Corridor
Withdrawal Area
N
1000 0 1000 2000 3000 4000 5000 6000 7000 feet
200 0 200 400 600 800 1000 1200 1400 1600 1800 2000 meters

# APPENDIX A

## LIST OF DATA SOURCES

A study team representing the Bureau of Outdoor Recreation and the Bureau of Land Management was responsible for the conduct of the Sweetwater Wild and Scenic River Study and the preparation of this report.

However, the study could not have been completed without the cooperation of many other State, Federal, and local agencies, and private individuals. Many from these groups participated in meetings and field examinations, provided coordination and guidance, and contributed information, technical data, and professional insight.

A listing of most of these sources follows. The study team wishes to express its gratitude for the help they provided and also extend an apology for any names that were unintentionally omitted.

### Federal Agencies

Bureau of Land Management
Bureau of Outdoor Recreation
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
National Oceanic and Atmospheric Administration
Soil Conservation Service

### Wyoming State Agencies

Department of Environmental Quality
Game and Fish Department
Recreation Commission
State Archeologist's Office
State Archives and Historic Department
State Engineer's Office
State Historic Preservation Office
Travel Commission

### Local Agencies

Fremont County Planning Department

### Individuals

Paul Henderson

Public views were obtained through a series of news releases, public presentations, and interviews. All comments received were considered in the preparation of the report.

APPENDIX B

HISTORIC SITES
Fremont County, Wyoming

The following sites are listed in The National Register of Historic Places, 1976:

Castle Gardens Petroglyph Site

Located about 28 miles (45 km) south of Moneta on U. S. Highway 20/26, this extensive prehistoric petroglyph site has numerous incised drawings, including several figures of water turtles. The portrayal of snapping turtles not native to the area probably signifies a cult which spread west from the Mississippi and Missouri Rivers. The absence of elements introduced by Europeans suggests an antiquity of several centuries.

Fort Washakie

Located on the Wind River Indian Reservation on U. S. Highway 287, the frame and stone buildings of the fort were originally established in 1869 as a camp to protect the Bannock and Shoshone Indian Reservations from hostile tribes. The fort was moved to the present location in 1871 and served as supply base for expeditions to Yellowstone Park and Big Horn Basin areas. The fort was originally named Camp Brown after Captain Frederick S. Brown who was killed in the Fetterman Massacre. The name was changed in 1878 to honor the respected Shoshone Chief Washakie, who is buried in the post cemetery.

Shoshone-Episcopal Mission

Located 3 miles (4.8 km) southwest of Fort Washakie on Moccasin Lake Road, this 1889, 2-story brick building and adjacent log church and cabin (c. 1900) was established on the Wind River Reservation by John Roberts, with the encouragement of the Shoshone leader, Chief Washakie.

St. Michael's Mission

These stone mission buildings were built within Fort Washakie by Rev. John Roberts, an Episcopal missionary. The mission was established in 1878 to serve the Northern Arapaho who wintered at the nearby Wind River.

South Pass

Located about 10 miles (16 km) southwest of South Pass City on Wyoming Highway 28, this low pass provided the easiest route through the Rocky Mountains and was the place where the Oregon-California Trail crossed the Continental Divide. The pass was discovered by Jedediah Smith in 1824 and was instrumental in opening the West to development.

South Pass City

The surviving structures of the most important town established in the Sweetwater gold mining region include a store, bar and hotel, and other buildings, mostly of log construction. The town was established in 1867 in response to the Gold Rush and was the county seat from 1868 to 1874. The town was where feminist Esther Morris became the Nation's first female Justice of the Peace in 1870.

Union Pass

Located on the Continental Divide in Teton National Forest, the pass is a core area from which the Wind River, Gros Ventre, and Absaroka Mountain Ranges rise. The pass was frequently used by Indians and later became important in early exploration and fur trading.

Pending Sites

These sites have been nominated for enrollment and are awaiting approval of the Office of Archeology and Historic Preservation, Washington, D.C.:

Directional Arrow and Tipi Rings
Hamilton City or Miner's Delight
Last or Ninth Crossing

TABLE C-1
WILDLIFE
FREMONT COUNTY, WYOMING

| WILDLIFE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Mammals | *Ursus americanus* | black bear |
| | **Antilocapra americana* | antelope |
| | **Odocoileus hemionus* | mule deer |
| | *Odocoileus virginianus* | white tail deer |
| | **Cervus canadensis* | elk |
| | **Alces alces* | moose |
| | *Ovis canadensis* | bighorn sheep |
| | **Felis concolor* | mountain lion |
| | **Sylvilagus auduboni* | desert cottontail |
| | **Sylvilagus nuttalli* | mountain cottontail |
| | *Mustela erminea* | short-tail weasel |
| | *Mustela frenata* | long-tail weasel |
| | **Taxides* | badger |
| | *Spilogale putorius* | spotted skunk |
| | *Mephitis mephitis* | striped skunk |
| | **Canis latrans* | coyote |
| | **Vulpes fulva* | red fox |
| | *Vulpes velox* | swift fox |
| | **Lynx rufus* | bobcat |
| | *Canis lupus irramontus* | Rocky Mountain wolf |
| | **Citellus richardsoni* | Richardson's ground squirrel |
| | **Citellus lateralis* | golden-mantled squirrel |
| | *Martes americana* | pine martin |
| | *Lepus americanus* | snowshoe hare |
| | *Ochotona princeps* | pika |
| | **Lepus townsendii* | whitetail jackrabbit |
| | **Sciurus niger* | fox squirrel |
| | **Sorex sp.* | shrew |
| | *Didelphis marsupialis* | opossum |
| | **Procyon lotor* | raccoon |
| | **Spermophilus spilosoma* | spotted groundsquirrel |
| | **Castor canadensis* | beaver |
| | **Ondatra zibothica* | muskrat |
| | **Mustela vision* | mink |
| | *Lynx canadensis* | lynx |
| | *Perognathus fasciatus* | Wyoming pocket mouse |
| | **Dipodomys ordi* | ord kangaroo rat |
| | *Reithrodontomys megalatis* | western harvest mouse |
| | **Peromyscus maniculatus* | deer mouse |
| | *Onychomys leucogaster* | northern grasshopper mouse |
| | **Neotoma cinerea* | bushytail woodrat |
| | **Microtus sp.* | vole |
| | **Lagurus curtatus* | sagebrush vole |
| | **Erethizon dorsatum* | porcupine |
| | *Azpus princeps* | western jumping mouse |
| | **Myotis lucifugus* | little brown myotis |
| | *Myotis thsanodes* | fringed myotis |
| | *Myotis evotis* | long-eared myotis |
| | *Myotis subulatus* | small-footed myotis |
| | **Marmota flaviventris* | yellowbelly marmot |
| | **Cynomys sunnisoni* | whitetail prairie dog |
| | **Geomys lucbvicianus* | plains pocket gopher |
| | *Mustela nigripes* | black-footed ferret |
| | **Equus caballus* | wild horse |
| | **Equus caballus* | domestic horse |
| | **Bovidae* | domestic cattle |
| | **Ovis domesticus* | domestic sheep |
| | **Capridae* | domestic goat |
| | *Rattus norugicus* | Norway rat |
| | *Mus musculus* | house mouse |
| | *Clethrionomys gapperi* | boreal redback vole |
| | **Lutra canadensis* | river otter |
| Reptiles | **Crotalus viridis* | prairie rattlesnake |
| | *Coluber constrictor* | racer |
| | **Pituophis melanoleucae* | bull snake |
| | **Thamnophis sirtales* | garter snake |
| | **Sceloporus graciosus* | sagebrush lizard |
| | **Phrynosoma douglasii* | horned lizard |
| Amphibians | **Ambystoma tigrinum* | tiger salamander |
| | *Scaphiopus intermontanus* | Great Basin spadefoot |
| Amphibians, Continued | *Pseudacris triseriata* | boreal frog |
| | **Rana pipiens* | leopard frog |
| Birds | *Gavia immer* | common loon |
| | *Gavia immer* | red throated loon |
| | **Podiceps auritus* | horned grebe |
| | *Podiceps caspicus* | cared grebe |
| | *Aechmorphorus occidentalis* | western grebe |
| | *Podilymbus podiceps* | pied-billed grebe |
| | *Phalacrocorax auritis* | double-crested carmorant |
| | **Ardea herodias* | great blue heron |
| | *Nyctanassa violacea* | black-crowned night heron |
| | *Leucophocyx thyla* | snowy egret |
| | *Bofaurus lentiginosus* | American bittern |
| | *Pleyadis chihi* | white-faced ibis |
| | *Olor columbianus* | whistling swan |
| | *Olor luccinator* | trumpeter swan |
| | **Branta canadensis* | Canada goose |
| | **Anas plalyrhynchos* | mallard |
| | **Anas strepera* | gadwall |
| | **Anas acuta* | pintail |
| | **Anas carolinensis* | green-winged teal |
| | **Anas descars* | blue-winged teal |
| | *Anas Americana* | cinnamon teal |
| | *Mareca americana* | American widgeon |
| | *Spatula clypeala* | Shoveler |
| | *Mareca penelope* | European widgeon |
| | **Aythya americana* | redhead |
| | *Aythya valisineria* | canvasback |
| | *Aythya collaris* | ring-necked duck |
| | *Aythya marila* | greater scaup |
| | *Aythya affinis* | lesser scaup |
| | *Bucephala clangula* | common goldeneye |
| | *Bucephala albeala* | bufflehead |
| | *Bucephala islandica* | barrow's goldeneye |
| | *Oxyura jamaiansis* | ruddy duck |
| | *Lophodytes cucullatus* | hooded merganser |
| | **Mergus merganser* | common merganser |
| | **Mergus serrator* | red-breasted merganser |
| | *Cathartes aura* | turkey vulture |
| | *Accipiter gentillis* | goshawk |
| | *Accipiter cooperii* | cooper hawk |
| | *Accipiter striatus* | sharp-shinned hawk |
| | **Buteo borealis* | red-tailed hawk |
| | *Buteo swainsoni* | Swainson's hawk |
| | *Buteo harlani* | Harlan's hawk |
| | *Buteo lagopus* | rough-legged hawk |
| | *Buteo regalis* | ferrugineous hawk |
| | **Aquila chrysaetos* | golden eagle |
| | *Haliaeetus leucocephalus* | bald eagle |
| | *Circus cyaneus* | marsh hawk |
| | *Pandion haliaetus* | osprey |
| | *Falco mexicanus* | prairie falcon |
| | *Falco peregrinus* | peregrine falcon |
| | *Falco columbarius* | pidgeon hawk |
| | *Falco sparnerius* | sparrow hawk |
| | *Falco rusticolus* | gyrfalcon |
| | *Dendragapus obscurus* | blue grouse |
| | *Bonasa umbellus* | ruffed grouse |
| | **Centrocercus urophasionus* | sage grouse |
| | *Perdix perdix* | Hungarian partridge |
| | *Alectoris graeca* | chuckar |
| | *Phasianus colchicus* | ring-necked pheasant |
| | *Grus canadensis* | sandhill crane |
| | *Rallus limicola* | Virginia rail |
| | *Porzana carolina* | sora rail |
| | *Coturnicops novaboracensis* | yellow rail |
| | *Fulica americana* | American coot |
| | *Charadrius semipalmatus* | semipalmated plover |
| | *Charadrius alexandrinus* | snowy plover |
| | *Charadrius vociferus* | killdeer |
| Birds, Continued | *Eupoda montana* | mountain plover |
| | *Squatarola squatarola* | black-bellied plover |
| | *Capella gallinago* | common snipe |
| | *Numenius phaeopus* | long-billed curlew |
| | **Bartramia longicauda* | upland plover |
| | *Actitis macularia* | spotted sandpiper |
| | *Tringa solitaria* | solitary sandpiper |
| | *Catoptrophorus semipalmatus* | willet |
| | *Totanus melanoleucus* | greater yellowlegs |
| | *Totanus flaulpes* | lesser yellowlegs |
| | *Erolia fuscicollis* | white-rumped sandpiper |
| | *Erolia bairdii* | Baird's sandpiper |
| | *Erolia minutilla* | least sandpiper |
| | *Limnodromus griseus* | short-billed dowitcher |
| | *Limnodromus scolopaceus* | long-billed dowitcher |
| | *Micropalama himantopus* | stilt sandpiper |
| | *Ereunetes pusillus* | semipalmated sandpiper |
| | *Ereunetes mauri* | western sandpiper |
| | *Limosa fedoa* | marbled godwit |
| | *Crocethia alba* | sanderling |
| | *Recurvirostra americana* | American avocet |
| | *Himantopus mexicanus* | black-necked stilt |
| | *Steganopus tricolor* | Wilson's phalarope |
| | *Lobipes lobatus* | northern phalarope |
| | *Larus argentatus* | herring gull |
| | *Larus delawarensis* | ring-billed gull |
| | *Larus pipixcan* | Franklin's gull |
| | *Larus philadelphia* | Bonaparte's gull |
| | *Larus californicus* | California gull |
| | *Sterna fosteri* | Forster's tern |
| | *Chlidonias niger* | black tern |
| | *Columba livia* | rock dove or pigeon |
| | *Zenaidura macroura* | mourning dove |
| | *Coccyzus americanus* | yellow-billed cuckoo |
| | *Tyto alba* | barn owl |
| | *Otus asio* | screech owl |
| | *Otus flammeolus* | flammulated owl |
| | **Bubo virginianus* | great-horned owl |
| | *Nyctea scandiaca* | snowy owl |
| | *Surnia ulula* | hawk owl |
| | *Glaucidium gnoma* | pygmy owl |
| | *Speatyto cunicularia* | western burrowing owl |
| | *Strix nebulosa* | great-grey owl |
| | *Asio otus* | long-eared owl |
| | *Asio flammeus* | short-eared owl |
| | *Aegolius acadicus* | saw-whet owl |
| | **Philaenoptilus nutlalli* | poor-will |
| | *Chardeiles minor* | common nighthawk |
| | *Chardeiles acutipennis* | lesser nighthawk |
| | *Aeronautes saxatalis* | white-throated swift |
| | *Archilochus alexandri* | black-chinned hummingbird |
| | *Selasphorus platycercus* | red-tailed hummingbird |
| | *Selasphorus rufus* | rufous hummingbird |
| | *Stellula calliope* | calliope hummingbird |
| | **Megaceryle alcyon* | belted kingfisher |
| | *Bombycilla garrulus* | Bohemian waxwing |
| | *Bombycilla cedrorum* | cedar waxwing |
| | *Lanius excubitor* | northern shrike |
| | *Lanius ludonicianus* | loggerhead shrike |
| | *Sturnus vulgaris* | starling |
| | **Colaptes cafer* | red-shafted flicker |
| | *Asyndesmus lervis* | Lewis's woodpecker |
| | *Sphyrapicus varius* | yellow-bellied sapsucker |
| | *Sphyrapicus throideus* | Williamson's sapsucker |
| | *Dendrocopos pubescens* | Downy woodpecker |
| | *Dendrocopos villosus* | hairy woodpecker |
| | *Picoides tridactylus* | northern three-toed woodpecker |
| | *Tyrannus tyrannus* | eastern kingbird |
| | *Tyrannus verticalis* | western kingbird |
| Birds, Continued | *Sayornis saya* | Say's phoebe |
| | *Empidonax traillii* | Traill's flycatcher |
| | *Empidonax minimum* | least flycatcher |
| | *Empidonax hammondii* | Hammond's flycatcher |
| | *Empidonax obserholseri* | dusky flycatcher |
| | *Contopus sordidulus* | western wood pewee |
| | *Nuttallornis borealis* | olive-sided flycatcher |
| | **Eremophila alpestris* | horned lark |
| | **Tachycineta thalassina* | violet-green swallow |
| | *Iridoproene bicolor* | tree swallow |
| | *Riparia riparia* | bank swallow |
| | **Hirundo rustica* | barn swallow |
| | **Petrochelidon pyrrhonota* | cliff swallow |
| | *Progne subis* | purple martin |
| | *Stelgidopteryx ruficollis* | rough-winged swallow |
| | *Perisoreus canadensis* | grey jay |
| | *Cyanocitta cristata* | blue jay |
| | *Cyanocitta stelleri* | Steller's jay |
| | *Aphelocoma caerulescens* | scrub jay |
| | *Gymnarhinus cyanocephalus* | pinyon jay |
| | *Pica pica* | black-billed magpie |
| | *Corvus corax* | common raven |
| | *Corvus brachythynchos* | common crow |
| | *Nucifraga columbiana* | Clark's nutcracker |
| | *Parus atricapillus* | black-capped chickadee |
| | *Parus gambeli* | mountain chickadee |
| | *Sitta carolinonsus* | white-breasted nuthatch |
| | *Sitta canadensis* | red-breasted nuthatch |
| | *Certhia familiaris* | brown creeper |
| | *Cinclus mexicanus* | dipper |
| | *Troglodytes aedon* | house wren |
| | *Thryomanes bewickii* | Bewick's wren |
| | *Telmatodytes palustris* | long-billed marsh wren |
| | *Catherpes mexicanus* | canhon wren |
| | *Salpinctos obsoletus* | rock wren |
| | *Mimus polyglottus* | mockingbird |
| | *Dumetella carolinensis* | catbird |
| | *Oreascoptes montanus* | sage thrasher |
| | *Turdus migratorius* | robin |
| | *Hylocichla guttata* | hermit thrush |
| | *Hylocichla ustulata* | Swainson's thrush |
| | *Hylocichla fuscoscens* | veery |
| | *Sialia mexicana* | western bluebird |
| | *Sialia currocoides* | mountain bluebird |
| | *Myadestes townsendi* | Townsend's solitarie |
| | *Regulus satrapa* | golden-crowned kinglet |
| | *Regulus calendula* | ruby-crowned kinglet |
| | **Vireo solitarius* | solitary viero |
| | *Vireo olivaceus* | red-eyed viero |
| | *Vireo gilvus* | warbling viero |
| | *Minotilta varia* | black and white warbler |
| | *Verminara celata* | orange-crowned warbler |
| | *Dendroica petechia* | yellow warbler |
| | *Dendroica coronata* | myrtle warbler |
| | *Seiurus nonehoracensis* | northern waterthrush |
| | *Oporornis tolmiei* | MacGillivrays warbler |
| | *Geothlypic trichas* | yellowthroat |
| | *Icteria virens* | yellow-breasted chat |
| | *Wilsonia pusilla* | Wilson's warbler |
| | *Setophaga ruticilla* | American redstart |
| | *Passer domestiaes* | house sparrow |
| | *Dolichonyx oryzinorus* | bobolink |
| | *Sturnella neglecta* | western meadowlark |
| | *Xanthocephalus xanthocephalus* | yellow-headed blackbird |
| | *Agelaues phoeniceus* | red-winged blackbird |
| | *Icterus bullockii* | Bullock's oriole |
| | **Euphyagus cyanocephalus* | Brewer's blackbird |
| | *Quiscalus quiscula* | common grackle |
| | **Molothrus ater* | brown-headed cowbird |
| Birds, Continued | *Piranga ludoviciana* | western tanager |
| | *Pheucticus melanocephalus* | black-headed grosbeak |
| | *Guiraca caerulea* | blue grosbeak |
| | *Hesperiphona vespertina* | evening grosbeak |
| | *Pinicola enucleator* | pine grosbeak |
| | *Passerina amoena* | lazuli bunting |
| | *Calamospiza melanocorys* | lark bunting |
| | *Plectrophenax nivalis* | snow bunting |
| | *Carpodacus cassinii* | Cassin's finsh |
| | *Carpodacus mexicanus* | house finsh |
| | *Leucosticte tephrocatis* | grey-crowned rosy finch |
| | *Leucosticte atrata* | black rosy finch |
| | *Acanthis flammea* | common redpoll |
| | *Spinus pinus* | pine siskin |
| | *Spinus tristis* | American goldfinch |
| | *Spinus psaltria* | lesser goldfinch |
| | *Loxia curvisastra* | red crossbill |
| | *Chlorura chlorura* | green-tailed towhee |
| | *Pipilo erythrophthalmus* | rufous-sided towhee |
| | *Junco hyemalis* | dark-eyed junco |
| | *Passerculus sandwichensis* | Savannah sparrow |
| | *Ammondramus savannarum* | grasshopper sparrow |
| | *Pooecetes gramineus* | vesper sparrow |
| | *Calamospiza melanocorys* | lark sparrow |
| | *Amphispiza belli* | sage sparrow |
| | *Spizella arborea* | tree sparrow |
| | *Spizella passerina* | chipping sparrow |
| | *Spizella breweri* | Brewer's sparrow |
| | *Spizella pallida* | clay-colored sparrow |
| | *Zonotrichia querula* | Harris's sparrow |
| | *Zonotrichia leucophrys* | white-crowned sparrow |
| | *Passerella iliaca* | fox sparrow |
| | *Melospiza lincolnii* | Lincoln's sparrow |
| | *Melaspiza melodia* | song sparrow |
| | *Phynchophanes mccoionii* | McCown's longspur |
| | *Calcarius ornatus* | chestnut-collared longspur |
| Fish | *Prosopium williamsoni* | mountain whitefish |
| | *Salmo clarki* | cutthroat trout |
| | **Salmo gairdneri* | rainbow trout |
| | *Salmo aguabonita* | golden trout |
| | **Salmo trutta linnaeus* | brown trout |
| | *Salvelinus namaycush* | lake trout |
| | *Salvelinus fontinalis* | brook trout |
| | *Thymallus arcticus* | grayling |
| | *Cyprinus carpio* | carp |
| | *Semotilus atromaculatus* | creek chub |
| | **Couesius plumbeus* | lake chub |
| | *Hybopsis gracilis* | flathead chub |
| | **Rhinichthys cataractae* | longnose dace |
| | *Notropis dorsalis* | bigmouth shiner |
| | *Notropis stramincus missuriensis* | sand shiner |
| | *Pimephales promelas* | flathead minnow |
| | *Moxostoma macrolepidotum* | northern redhorse |
| | **Catostomus commersoni* | white sucker |
| | **Catostomus catostomus* | longnose sucker |
| | **Catostomus platyrhynchus* | mountain sucker |
| | *Ictalurus melas* | black bullhead |
| | *Ictalurus punctatus* | channel catfish |
| | *Noturus flavus* | stonecat |
| | *Lota lota* | burbot (or ling) |
| | *Fundulus kansae* | plains killifish |
| | *Micropterus salmoides* | largemouth bass |
| | *Lepomis machrochirus* | bluegill |
| | *Pomoxis nigromaculatus* | black crappie |
| | *Stizostedion canadense* | sauger |
| | *Stizostedion vitreum vitreum* | walleye |
| | *Perca flavescens* | yellow perch |
| | *Etheostoma exile* | Iowa darter |
| | *None*[1] | splake |

*Indicates species known or believed to exist in Sweetwater Canyon.
[1]Hybrid of Mackinaw (lake) trout and brook trout.

TABLE C-2
VEGETATION
FREMONT COUNTY, WYOMING

| VEGETATIVE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Trees | *Abies lasiocarpa* | Subalpine fir |
| | *Acer glabrum* | Rocky Mountain maple |
| | *Acer negundo* | Boxelder |
| | **Alnus spp.* | Alder |
| | **Betula glandulosa* | Bog birch, Dwarf birch |
| | *Betula occidentalis* | Water birch |
| | *Betula papyrifera* | Paper birch |
| | *Chelopsis spp.* | Desert willow |
| | *Cornus stolonifera* | Redosier dogwood |
| | *Crataegus chrysocarpa* | ** |
| | *Crataegus douglasii* | ** |
| | *Crataegus erythropoda* | ** |
| | *Crataegus rivularis* | ** |
| | *Crataegus succulenta* | ** |
| | *Fraxinus pennsylvania* | Green ash |
| | **Juniperus communis* | Common juniper |
| | *Juniper osteosperma* | Utah juniper |
| | **Juniperus scopulorum* | Rocky Mountain juniper |
| | *Picea pungens* | Blue spruce |
| | *Picea Engelmanni* | Engelmann spruce |
| | *Picea glauca* | White spruce |
| | **Pinus contorta* | Lodgepole pine |
| | *Pinus albicaulis* | Whitebark pine |
| | **Pinus flexilis* | Limber pine |
| | *Pinus ponderosa* | Ponderosa pine |
| | *Populus balsamifera* | Balsam popular |
| | *Populus acuminata* | Lancleaf cottonwood |
| | *Populus augustifolia* | Narrow leaf cottonwood |
| | *Populus sargentii* | Plains cottonwood |
| | *Populus trichocarpa* | Black cottonwood |
| | *Populus tremuloides* | Quaking aspen |
| | *Pseudotsuga menziesii* | Douglas fir |
| | *Sorbus scopulina* | Mountain ash |
| Shrubs | **Amelanchier alnifolia* | Western serviceberry |
| | *Amelanchier utahensis* | Serviceberry |
| | **Arctastaphylus uva-ursi* | Bearberry |
| | *Artemisia arbuscula* | Low sagebrush |
| | *Artemisia cana cana* | Silver sagebrush |
| | *Artemisia cana bolandori* | Silver sagebrush |
| | *Artemisia frigida* | Fringed sagebrush |
| | *Artemisia nova* | Black sagebrush |
| | *Artemisia longiloba* | ** |
| | *Artemisia pedetifida* | Birdfoot sage; Brown sagebrush |
| | **Artemisia ludoviciana* | Prairie sage |
| | *Artemisia spinescens* | Budsage |
| | **Artemisia tridentata tridentata* | Basin big sagebrush |
| | *Artemisia tridentata vasayana* | Mountain big sagebrush |
| | **Artemisia tridentata wyomingonis* | Wyoming big sagebrush |
| | *Artemisia tripartita rupicola* | 3-tip sagebrush |
| | *Atriplex canescens* | 4-wing saltbrush |
| | *Atriplex confertifolia* | Shadscale |
| | *Atriplex corrugata* | Mat saltbrush |
| | *Atriplex nuttallii* | Saltbush; Nuttall's saltbrush |
| | *Ceanothus velutinus* | Snowbrush |
| | *Cercocarpus ledifolius* | Curlleaf mt. mahogeny |
| | *Cercocarpus montanus* | Mountain Mahogeny |
| | *Crataegus rivularis* | River hawthorn |
| | **Chrysothamnus nauseausus* | Rubber rabbitbrush |
| | *Chrysothamnus nauseausus graveolens* | Big rabbitbrush |
| | **Chrysothamnus viscidiflorus* | Low rabbit brush; Green rabbitbrush |
| | *Eriogonum umbellatum* | Shrubby eriogonum |
| | *Eurotia lanata* | Winterfat, Whitesage |
| | *Gautheria humifusa* | Creeping wintergreen |
| | *Grayia spinosa* | Spiny hopsage |
| | **Gutierrezia sarathrae* | Broom snakeweed |
| | *Holodiscus discolor* | Rock spirea |
| | *Leptodactylon pungens* | Granite gilia |
| | *Mahonia repens* | Oregon grape |
| | **Opuntia polyacantha* | Plains pricklypear |
| | *Opuntia fragilis* | ** |
| | *Pachistima myrsinites* | Mountain-lover |
| | **Potentilla fruticosa* | Shrubby cinquefoil |
| | *Potentilla gracilis* | Northwest cinquefoil |
| | *Potentilla palustris* | Marsh cinquefoil |
| | *Prunus malecarpa* | Chokecherry |
| | **Prunus virginiana* | Chokecherry |
| | **Pursha tridentata* | Bitterbrush |
| | *Ledum glandulosum* | Laborador tea |
| | **Rhus tribolata* | Skunkbush sumac |
| | **Rhus radicans* | Poison ivy |
| | *Ribes aureum* | Golden current |
| | **Ribes cereum* | Squaw current; Wax current |
| | *Ribes inerme* | Whitestem gooseberry |
| | *Ribes setosum* | Missouri gooseberry |
| | *Ribes lacustre* | Prickly current |
| | *Ribes viscosissimum* | Sticky current |
| | **Rosa spp.* | Wild rose |
| | *Rubus parviflorus* | Thimbleberry |
| | **Salix spp.* | Willow |

| VEGETATIVE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Shrubs, Continued | *Sarcobatus vermiculatus* | Black greasewood |
| | *Shepherdia canadensis* | Russet buffaloberry |
| | *Sorbus scobulina* | Mountain ash |
| | *Spirea splendens* | Spirea |
| | **Symphoricarpos oreophilus* | Mountain snowberry |
| | *Symphoricarpos albus* | Snowberry |
| | *Symphoricarpos albus* | Whortle snowberry |
| | *Symphoricarpos occidentalis* | Western snowberry |
| | *Tetradymia canescens* | Gray horsebrush |
| | *Tetradymia spinosa* | Shortspine horsebrush |
| | *Vaccinium ovalifolium* | Blueberry |
| | *Vaccinium scoparium* | Grouse whortleberry |
| | *Yucca glauca* | Small soapweed |
| Forbs | **Achillea lanulosa* | Yarrow |
| | *Actinea acaulis* | Stemless actinea |
| | *Agoseris glauca* | Pale agoseris |
| | **Allium spp.* | Wild onion |
| | *Alisma plantago-aquatica* | Water plantain |
| | *Arceuthobium americanum* | Dwarf mistletoe |
| | *Actaea rubra* | Baneberry |
| | *Aconitum columbianum* | Monkshood |
| | *Ameranthus retroflexus* | Red root pigweed |
| | *Ambrosia trifida* | Giant ragweed |
| | **Antennaria arcuata*[1] | Box pussytoes |
| | **Antennaria spp.* | Pussytoes |
| | *Anenome patens* | Pasque flower |
| | *Aplopappus spp.* | Goldenweed |
| | *Aquilegia coerula* | Colorado columbine |
| | *Arenaria hookeri* | Hooker sandwort |
| | *Arabis holboellii* | Holboel rockcress |
| | *Arabis drummondii* | Drummond rockcress |
| | *Arctium minus* | Common burdock |
| | *Argemone polyanthemos* | Prickly poppy |
| | **Arnica cordifolia* | Heartleaf arnica |
| | *Arnica fulgens* | Orange arnica |
| | *Arnica parryi* | Rayless arnica |
| | *Arnica sororia* | Arnica |
| | *Artemisia frigida* | Fringed sage |
| | *Artemisia campestris* | Field sagewort |
| | *Artemisia gnaphalodes* | ** |
| | *Artemisia ludoviciana* | Sagewort |
| | *Artemisia porteri*[2] | Porter sagebrush |
| | *Asclepias speciosa* | Showy milkweed |
| | *Aster engelmanni* | Engleman aster |
| | *Aster foliaceus* | Leafybract aster |
| | **Astragalus spp.* | Milkvetch, Loco, Locoweed |
| | *Balsamorhiza hirsuta* | Hairy balsam root |
| | *Balsamorhiza hookeri* | Cutleaf balsam root |
| | *Balsamorhiza sagittata* | Arrowleaf balsam root |
| | *Brodiaea douglasii* | Wild hyacinty |
| | *Calochortus nuttalli* | Sego lily |
| | *Camassia quamash* | Camas |
| | *Capsella bursa-pastoris* | Shepherd purse |
| | *Camelina microcarpa* | Littleseed falseflax |
| | *Campanula rotundifolia* | Harebell |
| | *Cardus nutans* | Musk thistle |
| | *Castilleja linariaefolia* | Wyoming paintbrush |
| | *Castilleja sulphurea* | Yellow paintbrush |
| | *Cerastium arvense* | Field chickweed |
| | *Centaurea ropens* | Russian knapweed |
| | *Chaenactis douglasii* | False yarrow |
| | *Chenopodium album* | Lambsquarter |
| | *Cherispora tenella* | Blue mustard |
| | **Chrysopsis villosa* | Hairy goldaster |
| | **Cirsium spp.* | Thistle |
| | *Clematis columbiana* | Clematis |
| | *Cleome lutea* | Yellow bee plant |
| | *Cleome serrulata* | Rocky Mountain bee plant |
| | **Collinsia parviflora* | Munkey flower, Blue-eyed Mary |
| | **Commandra pallida* | Bastard toad flax |
| | *Convolvolus arvensis* | Field bindweed |
| | *Cordylanthus ramosus* | Bushy birdbeak |
| | **Crepsis acuminata* | Taperton hawksbeard |
| | *Crepsis elegans* | Showy hawksbeard |
| | *Crepsis runcinata* | Hawksbeard |
| | *Cryptantha bradburiana* | Miners candle |
| | **Cystopteris fragilis* | Bladder-fern |
| | *Calypso bulbosa* | Fairy slipper |
| | *Caltha leptosepala* | Marsh marigold |
| | *Ceratophyllum demersun* | Coontail |
| | *Delphinium bicolor* | Low larkspur |
| | *Delphinium goyeri* | Plains larkspur |
| | *Delphinium nelsoni* | Spring larkspur |
| | *Delphinium occidentale* | Tall larkspur |
| | *Descurainia pinnata* | Pinnate tansymustard |
| | *Dicentra uniflora* | Steershead |
| | *Dodecathcon pauciflorum* | Shooting star |
| | **Dodecatheon pulchellum* | Dark throat shooting star |
| | *Disporum trachycarpum* | Fairy bells |
| | **Draba oligosperma* | Draba |

| VEGETATIVE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Forbs, Continued | *Erigeron caespitosus* | Tufted fleabane |
| | *Erigeron compositus* | Cutleaf daisy |
| | *Erigeron pumilus* | Shaggy daisy |
| | *Epilobium augustifolium* | Firewood |
| | *Erysimum capitatum* | Wallflower |
| | **Eriogonum spp.* | Buckwheat |
| | *Euphorbia esula* | Leafy spurge |
| | **Fragaria spp.* | Wild strawberry |
| | *Franseria discolor* | Skeletonleaf bursage |
| | *Frasera speciosa* | Green gentian |
| | *Fritillaria pudisa* | Yellow fritillary |
| | **Galium boreale* | Northern bedstraw |
| | *Geranium spp.* | Wild geranium |
| | **Geum spp.* | Avens |
| | *Gilia aggregata* | Scarlet gilia |
| | **Glycyrrhiza lepidota* | Wild licorice; Licorice root |
| | *Grindelia squarrosa* | Curlycup gumweed |
| | **Hackelia spp.* | Stickseed; Wild forget-me-not |
| | *Halogeton glomeratus* | Halogeton |
| | *Haplopappus acaula* | Stemless goldenweed |
| | *Hedysarum occidentale* | Sweetvetch |
| | *Helianthus olniflora* | Little sunflower |
| | *Helianthus annus* | Sunflower |
| | *Heracleum lanatum* | Cow parsnip |
| | *Hydrophyllum spp.* | Waterleaf |
| | **Iris missouriensis* | Rocky Mountain iris, blue flag iris |
| | *Isatis tinetoria* | Dyer's woad |
| | *Iva axillaris* | Poverty weed |
| | *Kochia scoparia* | Fireweed |
| | *Lactuca pulchella* | Chicory lettuce |
| | *Lactuca scariola* | Prickly lettuce |
| | *Lappula spp.* | Stickseed |
| | *Lepidium spp.* | Pepperweed |
| | *Lepidium perfoliatum* | Yellow weed; Yellowflower; Pepperweed |
| | **Leptodactylon pungens* | ** |
| | *Lewisia rediviva* | Bitterroot |
| | **Lesquerella tremonti*[3] | Fremont's bladderpod |
| | **Lesquerella spp.* | Bladder pod |
| | *Linum lewisii* | Blueflax; Lewis flax |
| | **Lithophragma spp.* | Prairiestar |
| | *Lithospermum incisum* | Narrowleaf puccon |
| | *Lithosperum ruderale* | Wayside gromwell |
| | **Lithosperum arvense* | Corn gromwell; Stone seed |
| | *Lomatium ambiguum* | Wyeth biscuitroot |
| | *Lomatium macrocarpum* | Biscuitroot |
| | *Lomatium triternatum* | ** |
| | *Lupinus spp.* | Lupine |
| | *Lygodesmia juncea* | Rushpink |
| | *Machaeranthera canescens* | Hoary aster |
| | *Machaeranthera canescens* | Woody aster |
| | *Machaeranthera tanacetifolia* | Tansyleaf aster |
| | *Melilotus albus* | White sweetclover |
| | *Melilotus officinalis* | Yellow sweetclover |
| | *Medicago hispada* | Burrclover |
| | *Mentha spp.* | Mint |
| | *Mentzelia decapetala* | Blazing star |
| | *Mentzelia laevicaulis* | Blazing star |
| | *Mertensia ciliata* | Bountain bluebell |
| | *Mertensia oblongifolia* | Bluebell |
| | **Mertensia verdis* | Bluebell |
| | *Monardia Monthaefolia* | Horsemint |
| | *Monolepis nuttalliana* | Monolepis |
| | *Nuphar polysepalum* | Yellow pondlily |
| | *Oenothera cacspitosa* | Evening primrose |
| | *Oenothera heterantha* | Primrose |
| | **Orthocarpus luteus* | Owl clover |
| | *Oxytropis spp.* | Crazyweed |
| | *Oxytropis sericea* | White loco |
| | *Parnassia fimbriata* | Grass-of-Parnassus |
| | *Paronychia sessilifolia* | Whitlow-wort |
| | *Pedicularis groenlandica* | Elephanthead |
| | **Penstemon paysoniorum*[2] | Payson penstemon |
| | **Penstemon spp.* | Penstemon |
| | *Penstemon rydbergii* | Penstemon |
| | *Perideridia gairdneri* | Yampah |
| | *Phacelia sericea* | Silky phacelia |
| | **Phacelia hastata* | Silver leaf phacelia |
| | **Phlox hoodii* | Hoods phlox |
| | *Phlox longifolia* | Prickly phlox |
| | *Phlox multiflora* | White phlox |
| | *Plantago patagonica* | Wooly Indianwheat |
| | *Plantago lancolata* | Buckhorn plantain |
| | **Plantago purshii* | Wooly Indianwheat |
| | *Plantago spinescens* | Spiney plantain |
| | *Plantago major* | Broadleaf plantain |
| | *Polygonum natans* | Ladysthumb |
| | *Polygonum aviculare* | Prostrate knotweed |
| | *Polygonum bistortoides* | American bistort |
| | *Portulacea oleracea* | Purslane |

| VEGETATIVE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Forbs, Continued | *Potamogeton filiformis* | Narrowleaf pondweed |
| | *Potamogeton pectinatus* | Sego pondweed |
| | *Potamongeton spp.* | Pondweed |
| | *Potentilla gracilis* | Cinquefoil |
| | *Psoralea tenuiflora* | Slim scrufpea |
| | *Pterospora andromedea* | Pinedrops |
| | **Ranunculus glaberrimus* | Sagebrush buttercup |
| | *Ranunculus spp.* | Buttercup |
| | *Ratibida columnifera* | Coneflower |
| | *Rudbeckia occidentalis* | Western coneflower |
| | **Rumex spp.* | Dock |
| | *Rumex acetoselle* | Dock |
| | *Salsola kali* | Russian thistle |
| | *Sedum spp.* | Sedum |
| | *Sedum lanceolatum* | Stonecrop |
| | *Sedum stenopetalum* | Stonecrop |
| | *Selaginella densa* | Spikemoss |
| | *Senecio spp.* | Senecio |
| | *Sisymbrium altissimum* | Tumblemustard |
| | *Sisymbrium linifolium* | Hedgemustard |
| | *Smilacina racemosa* | False solomonseed |
| | **Smilacina stellata* | Lily-of-the valley; Starry false Soloman's seal |
| | *Sisyrinchium inflatum* | Blue-eyed grass |
| | *Solanum rostratum* | Buffalobur |
| | **Sonchus spp.* | Thistle |
| | *Sophis incisa* | Western tansymustard |
| | *Solidago spp.* | Goldenrod |
| | *Sphaeralcea coccinea* | Scarlett globemallow; Scarlett mallow |
| | **Taraxacum spp.* | Dandelion |
| | *Thalaspi arvense* | Field pennycress |
| | **Thalictrum spp.* | Meadow rue |
| | *Thermopsis montana* | False lupine; Golden pea; Thermopsis |
| | *Thermopsis rhombifolia* | Buffalo bean |
| | **Townsendia spathulata*[2] | Sword townsendia |
| | *Tragopogon dubius* | Salsify |
| | *Trifolium spp.* | Clover |
| | **Trifolium gymnocarpon* | Holly leaf clover |
| | *Tragopogon pratensis* | Meadow salsify |
| | *Verbassum thapsus* | Mullein |
| | *Vicia americana* | American vetch |
| | *Vicia cracca* | Vetch |
| | **Viola spp.* | Wild Violet |
| | *Viola nuttallii* | Yellow violet |
| | **Woodsia organa* | Woodsia (fern) |
| | *Wyethia amplexicaulis* | Mules ears |
| | *Xanthium strumarium* | Cocklebur |
| | **Zigadenus spp.* | Death camas |
| Grasses | *Agropyron albicans* | Montana wheatgrass |
| | *Agropyron cristatum* | Crested wheatgrass |
| | *Agropyron dasystachyum* | Thickspike wheatgrass |
| | *Agropyron desertorium* | Desert wheatgrass |
| | *Agropyron intermedium* | Intermediate wheatgrass |
| | *Agropyron repens* | Quackgrass |
| | *Agropyron riparium* | Streambank wheatgrass |
| | **Agropyron smithii* | Western wheatgrass |
| | **Agropyron spicatum* | Bluebunch wheatgrass |
| | **Agropyron trachycaulum* | Slender wheatgrass |
| | *Agrostis alba* | Redtop bent |
| | *Agrostis exerata* | Spike bent |
| | *Agrostis palustris* | Creeping bent |
| | *Agrostis scabra* | Rough bent |
| | *Alopecurus aequalis* | Shortawn foxtail |
| | *Andropogon scoparius* | Little bluestem |
| | *Aristida fedleriana* | Fendlers 3-awn |
| | *Aristida longiseta* | Red 3-awn |
| | *Beckmannia syzigaohne* | American sloughgrass |
| | *Boutelous gracilis* | Blue grama grass |
| | *Bromus anomalus* | Nodding brome |
| | *Bromus inermis* | Smooth brome |
| | *Bromus japonicus* | Japanese brome |
| | *Bromus marginatus* | Mountain brome |
| | *Bromus polyanthus* | Polyanthus brome |
| | *Bromus tectorum* | Cheatgrass brome |
| | *Catabrosa aquatica* | Brookgrass |
| | *Calamagrostis canadensis* | Bluejoint reedgrass |
| | *Calamagrostis inexpansa* | Northern reedgrass |
| | *Calamagrostis montanensis* | Plains reedgrass |
| | *Calamovilfa longifolia* | Prairie sandreed |
| | *Danthonia intermedia* | Timber outgrass |
| | *Danthonia unispicata* | One-spike oatgrass |
| | **Dactylis glomerata* | Orchardgrass |
| | **Deschampsia cacspitosa* | Tufted hairgrass |
| | *Distichlis spicata* | Inland saltgrass |
| | *Distichlis stricta* | Saltgrass |
| | *Echinochloa cusgalli* | Watermillet |
| | *Elymus canadensis* | Canadian wild rye |
| | **Elymus cinerus* | Basin wild rye |

| VEGETATIVE TYPE | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Grasses, Continued | *Elymus glaucus* | Blue wild rye |
| | *Festuca idahoensis* | Idaho fescue |
| | *Festuca occidentalis* | Western fescue |
| | *Festuca ovina* | Sheep fescue |
| | *Glyceria striata* | Fowl mannagrass |
| | *Hesperchloa kingii* | King spikefescue |
| | *Hierochloe odorata* | Sweetgrass |
| | *Hordeum caespitosum* | Bobtail barley |
| | *Hordeum jubatum* | Foxtail barley |
| | *Koeleria cristata* | Prairie junegrass |
| | *Melica bulbosa* | Onion melic |
| | *Muhlenbergia asperfolia* | Alkali muhly |
| | *Muhlenbergia racemosa* | Marsh muhly |
| | *Muhlenbergia richardsonis* | Mat muhly |
| | *Oryzopsis exigua* | Little ricegrass |
| | *Oryzopsis hymenoides* | Indian ricegrass |
| | *Panicum capillare* | Witchgrass |
| | *Phleum alpinum* | Alpine timothy |
| | *Phleum pratense* | Common timothy |
| | *Phragmites communis* | Common reed |
| | *Poa ampla* | Big bluegrass |
| | *Poa canbyi* | Canby bluegrass |
| | *Poa cusickii* | Cusick bluegrass |
| | **Poa fendleriana* | Fendlers bluegrass |
| | *Poa interior* | Inland bluegrass |
| | *Poa nervosa* | Wheeler bluegrass |
| | *Poa nevadensis* | Nevada bluegrass |
| | **Poa pratensis* | Kentucky bluegrass |
| | **Poa pattersonii* | Patterson bluegrass |
| | *Poa reflexa* | Nodding bluegrass |
| | **Poa sandbergii* | Sandberg bluegrass |
| | *Poa secunda* | Sandberg bluegrass |
| | *Puccinellia airoides* | Alkaligrass |
| | *Schedonnardus paniculatus* | Tumblegrass |
| | *Sitanion hystrix* | Bottlebrush squirreltail |
| | *Sitanion jubatum* | Big squirreltail |
| | *Spartina gracilis* | Alkali cordgrass |
| | *Sphenopholis obtusa* | Prairie wedgescale |
| | *Sporobolus airoides* | Alkali sacaton |
| | *Sporobolus cryptandrus* | Sand dropseed |
| | *Stipa columbiana* | Subalpine needlegrass |
| | **Stipa comata* | Needle and thread |
| | *Stipa lettermanii* | Letterman needlegrass |
| | *Stipa pinctorum* | Pinewoods needlegrass |
| | *Stipa viridula* | Green needlegrass |
| | *Trisetum spicatum* | Spike trisetum |
| | *Trisetum wolfii* | Wolfs trisetum |
| | *Vulpia octoflora* | Six weeks fescue |
| Grass-like Plants | *Arenaria conjcsta* | Ballhead sandwort |
| | *Carex eleocharis* | Needleleaf sedge |
| | *Carex festivella* | Ovalhead sedge |
| | **Carex filifolia* | Threadleaf sedge |
| | *Carex hoodii* | Hood sedge |
| | *Carex lanuginosa* | Woolly sedge |
| | *Carex douglasii* | Douglas sedge |
| | *Carex canescens* | Silvery sedge |
| | *Carex aurea* | Golden sedge |
| | **Carex aquatilis* | Sedge |
| | *Carex disperma* | Sedge |
| | *Carex microptera* | Smallwing sedge |
| | *Carex nebraskensis* | Nebraska sedge |
| | *Carex geyeri* | Elk sedge |
| | *Carex obtusata* | Sedge |
| | *Carex pentasata* | Sedge |
| | *Carex phraegracilis* | Clustered field sedge |
| | *Carex raynoldsii* | Sedge |
| | *Carex scopulorum* | Sedge |
| | *Carex vallicola* | Valley sedge |
| | *Eleocharis pauciflora* | Spikerush |
| | *Elmocharis macrostachya* | Spikerush |
| | *Eriophorum chamissonis* | Cotton sedge |
| | *Eriophorum augustifolium* | Cotton sedge |
| | *Juncus balticus* | Wiregrass |
| | *Juncus bufonius* | Wiregrass |
| | *Juncus confusus* | Wiregrass |
| | *Juncus longistylis* | Wiregrass |
| | *Juncus nodosus* | Wiregrass |
| | *Juncus ensifolius* | Wiregrass |
| | *Juncus tracyi* | Wiregrass |
| | *Scirpus paludosus* | Alkali bullrush |
| | *Scirpus microcarpus* | Smallseed bullrush |
| | *Scirpus actus* | Western bullrush |
| | *Scirpus americanus* | American bullrush |
| | *Triglochin maritima* | Arrow grass |
| | *Typha latifolia* | Cattail |
| | **Equisetum spp.* | Horsetails |
| | *Equisctum variegatum* | Variegated horsetail |
| | *Equisetum hycmale* | Scouring rush |
| | *Sparganium minimum* | Bur-reed |
| | *Sparganium multipedunculatum* | Bur-reed |

*Plants known or suspected to occur in the Sweetwater Wild and Scenic Study Area.
**No known common name.
[1]Proposed Endangered Species, Federal Register, Volume 41, No. 24529, June 16, 1976.
[2]Currently being reviewed for possible Threatened or Endangered Species status, Federal Register, Volume 40, No. 27887, July 1, 1975.
[3]Proposed Endangered Species, Federal Register, Volume 40, No. 27887, July 1, 1975.

TABLE D

ADJUDICATED WATER RIGHTS

MAINSTEM, SWEETWATER RIVER, AND ALL TRIBUTARIES ABOVE SPRING CREEK

1965

| REFERENCE NUMBER | STRUCTURE NAME | APPROPRIATION DATE | SOURCE | USE[1] | AMOUNT Flow--CFS | ACRES IRRIGATED | LOCATION Section | Township North | Range West |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Rongis | 04/05/84 | Sweetwater River | I | 1.21 | 85 | 36 | 30 | 93 |
| 2 | Schoonmaker | 08/01/86 | Sweetwater River | I,S,D | 12.88 | 901.4 | 35 | 29 | 87 |
| 3 | Bothwell Sweetwater No. 2 | 09/01/86 | Sweetwater River | I | 6.77 | 474.18 | 5 | 29 | 85 |
| 4 | Bothwell Sweetwater No. 2 | 09/01/86 | Sweetwater River | I | 2.99 | 209 | 5 | 29 | 85 |
| 5 | Countryman No. 1 | 04/18/87 | Sweetwater River | I | .55 | 40 | 19 | 29 | 89 |
| 6 | Brown | Spring/87 | Sweetwater River | I,S | 1.46 | 104 | 19 | 29 | 96 |
| 7 | Arnold No. 1 | 05/01/88 | Sweetwater River | I,S | 3.70 | 217 | 26 | 29 | 97 |
| 8 | Bothwell Sweetwater No. 3 | 06/01/88 | Sweetwater River | I,D | 9.55 | 669 | 5 | 29 | 85 |
| 9 | Arnold No. 2 | June/88 | Sweetwater River | I,S | .72 | 51 | 25 | 29 | 97 |
| 10 | Sherlock and Marrin | 1889 | Sweetwater River[3] | Preferred | 1.78 | | 28 | 28 | 101 |
| 11 | Callahan | 05/16/95 | Sweetwater River | I | 1.00 | 70 | 14 | 29 | 96 |
| 12 | Riverside | 08/23/95 | Sweetwater River[3] | I | .51 | 36 | 19 | 28 | 101 |
| 13 | Russell | 02/28/96 | Sweetwater River | I | 1.44 | 112 | 27 | 30 | 95 |
| 13 | Russell | 02/28/96 | Sweetwater River | I | 1.42 | 100 | 27 | 30 | 95 |
| 14 | Jamerman | 03/11/96 | Sweetwater River | I | 1.34 | 95 | 36 | 30 | 91 |
| 15 | Graham and Farnsley No. 1 | 06/22/96 | Sweetwater River | I | 1.65 | 117 | 7 | 29 | 95 |
| 16 | Graham and Farnsley No. 2 | 06/22/96 | Sweetwater River | I | 1.34 | 95 | 7 | 29 | 95 |
| 17 | Graham | 06/22/96 | Sweetwater River | I | 2.45 | 173 | 16 | 30 | 93 |
| 18 | Countryman No. 2 | 04/10/97 | Sweetwater River | I | 1.56 | 111 | 19 | 29 | 89 |
| 19 | A. R. Cowley No. 1 | 01/10/98 | Sweetwater River | I | .86 | 60 | 13 | 29 | 89 |
| 20 | McIntosh | 07/14/98 | Sweetwater River | I | 3.70 | 217 | 8 | 29 | 90 |
| 21 | Enl. Jamerman | 09/21/98 | Sweetwater River | I | .26 | 20 | 36 | 30 | 91 |
| 22 | Miller | 10/18/98 | Sweetwater River | I | .30 | 21 | 14 | 29 | 89 |
| 23 | Enl. Graham | 12/05/98 | Sweetwater River | I | 1.92 | 135 | 16 | 30 | 93 |
| 24 | Enl. Salmon | 12/12/98 | Sweetwater River | I | .42 | 30 | 27 | 30 | 93 |
| 25 | Enl. Highland Branch Bothwell Sweetwater No. 2 | 12/22/98 | Sweetwater River | I,S,D | 2.79 | 195 | 5 | 29 | 85 |
| 26 | Enl. Highland Branch Bothwell Sweetwater No. 2 | 12/22/98 | Sweetwater River | I,S,D | .79 | 55 | 5 | 29 | 85 |
| 27 | Enl. Highland Branch Bothwell Sweetwater No. 2 | 12/22/98 | Sweetwater River | I,S,D | 1.01 | 71 | 5 | 29 | 85 |
| 28 | Craner (changed to McIntosh) | 03/15/99 | Sweetwater River | I | 1.50 | 105 | 8 | 29 | 90 |
| 29 | Enl. Rongis | 12/15/99 | Sweetwater River | I | 1.60 | 76 | 36 | 30 | 93 |
| 30 | McKinney No. 2 | 03/03/00 | Sweetwater River | I | .13 | 10 | 7 | 30 | 93 |
| 31 | McKinney No. 1 | 03/03/00 | Sweetwater River | I | .38 | 27 | 7 | 30 | 93 |
| 32 | Sheehan | 03/16/00 | Sweetwater River | I,S | 5.64 | 396 | 4 | 29 | 92 |
| 33 | South Side | 01/05/01 | Sweetwater River | I,S | 6.16 | 433 | 5 | 29 | 92 |
| 34 | Enl. A. R. Cowley | 05/09/01 | Sweetwater River | I | 1.76 | 125 | 13 | 29 | 89 |
| 35 | Enl. McIntosh | 08/27/01 | Sweetwater River | I | 1.10 | 77 | 8 | 29 | 90 |
| 36 | Enl. McIntosh | 09/02/01 | Sweetwater River | I | 3.65 | 256 | 8 | 29 | 90 |
| 37 | Enl. McIntosh | 09/02/01 | Sweetwater River | I | 1.00 | 70 | 8 | 29 | 90 |
| 38 | W. M. Cranor | 09/04/01 | Sweetwater River | I | .71 | 50 | 23 | 29 | 90 |
| 39 | Canyon | 10/03/01 | Sweetwater River | I | 4.71 | 330 | 11 | 30 | 94 |
| 40 | Enl. Sherlock and Marrin | 10/07/01 | Sweetwater River[3] | Preferred | 3.85 | | 28 | 28 | 101 |
| 41 | McDowell | 10/21/01 | Sweetwater River[3] | Preferred | 3.50 | | 28 | 28 | 101 |
| 42 | Three Crossings | 10/08/02 | Sweetwater River | I | 1.65 | 116 | 31 | 30 | 91 |
| 43 | Enl. South Side | 11/15/02 | Sweetwater River | I,S | 2.36 | 237 | 5 | 29 | 92 |
| 44 | Enl. McIntosh | 01/24/03 | Sweetwater River | I | 1.55 | 110 | 8 | 29 | 90 |
| 45 | Enl. Canyon | 02/10/03 | Sweetwater River | I | 1.92 | 135 | 11 | 30 | 94 |
| 46 | Enl. Burnt Ranch | 03/21/03 | Sweetwater River[3] | I | .90 | 63 | 27 | 28 | 100 |
| 47 | Enl. Burnt Ranch | 03/21/03 | Sweetwater River[3] | I | .31 | 22 | 27 | 28 | 100 |
| 48 | Enl. Burnt Ranch | 03/21/03 | Sweetwater River[3] | I | 1.59 | 111 | 27 | 28 | 100 |
| 49 | Enl. Three Crossings | 01/27/04 | Sweetwater River | I | 1.64 | 115 | 31 | 30 | 91 |
| 50 | Enl. Three Crossings | 01/27/04 | Sweetwater River | I | 4.42 | 310 | 31 | 30 | 91 |
| 51 | Enl. Three Crossings | 01/27/04 | Sweetwater River | I | .85 | 60 | 31 | 30 | 91 |
| 52 | Enl. McDowell | 09/26/04 | Sweetwater River[3] | Preferred | .50 | | 28 | 28 | 101 |
| 53 | Wyoming Central | 10/24/04 | Sweetwater River | I | 22.10 | 1,548.5 | 13 | 29 | 89 |
| 54 | Enl. Jamerman | 12/27/04 | Sweetwater River | I,S,D | 3.04 | 216 | 36 | 30 | 91 |
| 55 | Enl. Countryman | 03/27/05 | Sweetwater River | I | 2.07 | 145 | 19 | 29 | 89 |
| 56 | National | 05/12/05 | Sweetwater River | I,S,D | 1.88 | 142 | 24 | 30 | 95 |
| 57 | Enl. (W. M.) Cranor | 02/26/06 | Sweetwater River | I | .88 | 62 | 23 | 29 | 90 |
| 58 | Enl. Sherlock and Marrin | 07/27/06 | Sweetwater River[3] | I | 1.30 | 91 | 28 | 28 | 101 |
| 59 | Enl. Schoonmaker | 09/26/06 | Sweetwater River | I | 13.93 | 975.4 | 19 | 29 | 86 |
| 60 | Enl. National | 03/16/07 | Sweetwater River | I,S | .85 | 60 | 24 | 30 | 95 |
| 61 | Point of Rocks | 05/20/07 | Sweetwater River | I | 4.11 | 288.5 | 6 | 29 | 92 |
| 62 | Point of Rocks | 05/20/07 | Sweetwater River | I | 1.93 | 133 | 6 | 29 | 92 |
| 63 | Frederick | 11/21/08 | Sweetwater River | I | 3.34 | 234 | 24 | 30 | 95 |
| 64 | Enl. Canyon | 11/21/08 | Sweetwater River | I | 2.29 | 160 | 11 | 30 | 94 |
| 65 | Beaver Dam | 11/10/09 | Sweetwater River[3] | I | 1.33 | 93 | 19 | 28 | 99 |
| 66 | Emigrant Road | 04/25/10 | Sweetwater River | I | .77 | 54 | 6 | 29 | 92 |
| 67 | Cranor Extension | 04/25/10 | Sweetwater River | I | .37 | 26 | 22 | 29 | 90 |
| 68 | Jacob | 07/02/10 | Sweetwater River | I | 1.76 | 123 | 23 | 30 | 95 |
| 69 | Meyers | 07/02/10 | Sweetwater River | I | 3.52 | 246.6 | 27 | 30 | 95 |
| 70 | Meyers | 07/02/10 | Sweetwater River | I | 1.46 | 100.2 | 27 | 30 | 95 |
| 71 | NT | 06/15/11 | Sweetwater River | I,S | 2.17 | 152 | 34 | 30 | 91 |
| 72 | Enl. National | 08/16/11 | Sweetwater River | I,S | .31 | 22 | 24 | 30 | 95 |
| 73 | Miller | 05/06/12 | Sweetwater River | I | 1.80 | 126 | 6 | 29 | 95 |
| 74 | Enl. Three Crossings | 08/30/12 | Sweetwater River | I,S,D | .83 | 58 | 31 | 30 | 91 |
| 75 | Enl. Three Crossings | 08/30/12 | Sweetwater River | I,S,D | 1.18 | 83 | 31 | 30 | 91 |
| 76 | Enl. No. 2 Schoonmaker | 01/07/13 | Sweetwater River | I | 3.00 | 209.8 | 35 | 29 | 87 |
| 77 | Enl. Beaver Dam | 06/12/15 | Sweetwater River[3] | I,S | 1.01 | | 71 | 28 | 99 |
| 78 | Enl. Point of Rocks | 07/16/15 | Sweetwater River | I | 1.90 | | 133 | 6 | 29 | 92 |
| 79 | Enl. Point of Rocks | 07/16/15 | Sweetwater River | I | .43 | | 30 | 6 | 29 | 92 |
| 80 | Enl. Miller | 11/01/15 | Sweetwater River | I | 1.57 | | 110 | 6 | 29 | 95 |
| 81 | Enl. Graham and Farnsley No. 1 | 12/27/15 | Sweetwater River | I | .97 | | 68 | 7 | 29 | 95 |
| 82 | Enl. Russell | 12/28/15 | Sweetwater River | I | .93 | | 65 | 27 | 30 | 95 |
| 83 | Enl. Brown | 11/20/16 | Sweetwater River | I | .54 | | 38 | 19 | 29 | 96 |
| 84 | Enl. Meyers | 06/22/17 | Sweetwater River | I,D | 1.51 | | 106 | 27 | 30 | 95 |
| 85 | Enl. Miller | 08/10/17 | Sweetwater River | I,S,D | .11 | | 7.5 | 6 | 29 | 95 |
| 86 | Enl. A. R. Cowley No. 1 | 02/27/19 | Sweetwater River | I,S,D | 3.70 | | 259 | 13 | 29 | 89 |
| 87 | Enl. A. R. Cowley No. 1 | 04/05/20 | Sweetwater River | I,S,D | 1.00 | | 70 | 13 | 29 | 89 |
| 88 | Enl. Burnt Ranch | 06/21/20 | Sweetwater River[3] | I | 1.64 | | 115 | 27 | 28 | 100 |
| 89 | Independent | 02/14/21 | Sweetwater River | I | .71 | | 50 | 33 | 30 | 95 |
| 90 | Enl. Emigrant Road | 06/20/21 | Sweetwater River | I | .53 | | 37 | 6 | 29 | 92 |
| 92 | Enl. Burnt Ranch | 07/13/21 | Sweetwater River[3] | I,S,D | 1.31 | | 92 | 27 | 38 | 100 |
| 92 | Producers and Refiners Corp. 2-inch Water Line | 09/04/23 | Sweetwater River | D, Pumping | 0.48 | | | 5 | 29 | 85 |
| 93 | Hay Enl. of McDowell | 08/14/26 | Sweetwater River | I,S, and Supply Ditch | S.S.[2] | | 320 | 28 | 28 | 101 |
| 94 | Pacific No. One Reservoir | 08/14/26 | Sweetwater River[3] | I,S | | 106.91 | | 1 | 27 | 102 |
| 95 | Enl. Independent | 08/26/26 | Sweetwater River | I,S,D | 2.14 | | 150 | 33 | 30 | 95 |
| 96 | The Jacob | 02/14/27 | Sweetwater River | I | 2.35 | | 164.44 | 35 | 30 | 93 |
| 97 | Koehler | 09/20/35 | Sweetwater River | I,S,D | .69 | | 48 | 10 | 30 | 94 |
| 98 | Koehler | 09/20/35 | Sweetwater River | I,S,D | .14 | | 10 | 10 | 30 | 94 |
| 99 | Pacific No. Two Reservoir | 08/14/26 | Sweetwater River[3] | I,S | | 1,394.21 | | 33 | 27 | 102 |
| 100 | Wagers | 07/28/10 | Spring | I,S,D | .045 | | 3.5 | 18 | 28 | 97 |
| 101 | Overland Springs | 07/25/01 | Spring | Min. | .26 | | | 34 | 29 | 98 |
| 102 | S. P. Harris | 08/12/04 | Lewiston Slough | I | .72 | | 51 | 26 | 28 | 99 |
| 103 | Rock Creek | 1884 | Rock Creek | Min., Mil. | 75.70 | | | 2 | 29 | 100 |
| 104 | Carpenter | 12/09/39 | Rock Creek | I,S,D | S.S.[2] | | 304.5 | 28 | 29 | 99 |
| 105 | Upper Rock Creek Reservoir | 11/19/56 | Rock Creek | Ind. | | 1,457.5 | | 27 | 30 | 100 |
| 106 | First Enl. Upper Rock Creek Reservoir | 07/18/58 | Rock Creek | Ind. | | 1,342.3 | | 27 | 30 | 100 |
| 107 | Flader Pipeline | 06/25/31 | Flader Spring | Min., Mil., D | .50 | | | 6 | 29 | 99 |
| 108 | Gustavsen Water Works | 11/15/32 | Timba Bah Spring | S,D | .10 | | | 12 | 29 | 100 |
| 109 | Geissler Pipeline | 07/11/08 | Two Springs | D,S | | | | 12 | 29 | 100 |
| 110 | Granyea | 1884 | Buck and Anthony Springs | D | | | | | | |
| 111 | Tabor Pipeline | 08/25/00 | Tabor Spring | D, Min. | | | | 14 | 29 | 100 |
| 112 | Carpenter Pipeline | 09/08/36 | Tabor Spring | D | .16 | | | 14 | 29 | 100 |
| 113 | Pipe Line | 07/09/00 | Springs | D, Min. | | | | 14 | 29 | 100 |
| 114 | Geissler | 09/04/00 | Willow Creek | I,S | 1.42 | | 100 | 5 | 28 | 99 |
| 115 | Geissler | 09/04/00 | Willow Creek | I,S | .35 | | 25 | 5 | 28 | 99 |
| 116 | Kenyon | 03/21/03 | Willow Creek | I,S | 1.01 | | 71 | 7 | 29 | 100 |
| 117 | Enl. Giessler | 08/03/03 | Willow Creek | I,S | .52 | | 37 | 5 | 28 | 99 |
| 118 | New Giessler | 08/03/03 | Willow Creek | I,S | .91 | | 64 | 5 | 28 | 99 |
| 119 | New Giessler | 08/03/03 | Willow Creek | I,S | .28 | | 20 | 5 | 28 | 99 |
| 120 | Abra | 07/31/11 | Willow Creek | I,S | 1.41 | | 88.5 | 21 | 28 | 99 |
| 121 | Green No. 1 | 07/31/13 | Willow Creek | I | .54 | | 38 | 25 | 29 | 100 |
| 122 | Green No. 2 | 07/31/13 | Willow Creek | I | .06 | | 4 | 25 | 29 | 100 |
| 123 | Oregon Trail No. 1 | 07/31/13 | Willow Creek | I | .76 | | 53 | 5 | 28 | 99 |
| 124 | Oregon Trail No. 2 | 07/31/13 | Willow Creek | I | .29 | | 20.5 | 5 | 28 | 99 |
| 125 | Magagna | 09/10/13 | Willow Creek | I | .51 | | 35.5 | 32 | 29 | 99 |
| 126 | Magagna | 09/10/13 | Willow Creek | I | .45 | | 32 | 32 | 29 | 99 |
| 127 | Carlson | 08/22/21 | Willow Creek | I,S | .50 | | 35 | 26 | 29 | 100 |
| 128 | Green No. 3 | 07/31/13 | Spring Gulch | I | .14 | | 10 | 30 | 20 | 99 |
| 129 | Carissa Pipe Line | 10/04/98 | Big Hermit Creek | Min., Mil. | 4.55 | | | 21 | 29 | 100 |
| 130 | Daley Reservoir | 12/07/07 | Oregon Slough | S | | 2.80 | | 30 | 27 | 100 |
| 131 | Basco | 06/30/09 | Oregon Slough | I | .37 | | 25.5 | 35 | 28 | 100 |
| 132 | Bertagnolli | 11/16/08 | Slaughter House Gulch | I,S,D | .83 | | 58 | 15 | 28 | 100 |
| 133 | Rizzi | 11/16/08 | Springs | I | .26 | | 18 | 10 | 28 | 100 |
| 134 | Bob Jack | 07/20/07 | Fish Creek | I,S,D | 1.81 | | 127 | 34 | 29 | 101 |
| 135 | Jornado | 07/26/09 | Fish Creek | I | 1.36 | | 95.8 | 3 | 28 | 101 |
| 136 | Jornado | 07/26/09 | Fish Creek | I | .16 | | 11.4 | 3 | 28 | 101 |
| 137 | Fish Creek | 06/25/10 | Fish Creek | I | 1.32 | | 92.4 | 14 | 28 | 101 |
| 138 | Enl. Riniker | 06/27/02 | Pine Creek | I | 1.66 | | 118 | 15 | 29 | 101 |
| 139 | Fish Creek Supply | 08/09/09 | Pine Creek | Supply Ditch | | | | 36 | 29 | 101 |
| 140 | Blair | 10/06/10 | Pine Creek | I,S,D | 2.97 | | 208 | 1 | 28 | 101 |
| 141 | Enl. Blair | 07/19/12 | Pine Creek | I,S,D | .35 | | 24.6 | 1 | 28 | 101 |
| 142 | Roach | 06/29/03 | Lander Creek | I,S | 2.04 | | 143 | 15 | 29 | 103 |
| 143 | Short | 06/29/03 | Lander Creek | I,S | 1.05 | | 74 | 24 | 29 | 103 |
| 144 | Jensen No. 1 | 06/29/03 | Lander Creek | I,S | 1.64 | | 115 | 6 | 29 | 103 |
| 145 | Ord | 06/29/03 | Ord Creek | I,S | 1.40 | | 98 | 28 | 30 | 103 |
| 146 | Long | 06/29/03 | Blucher Creek | I,S | .92 | | 65 | 19 | 29 | 102 |
| 147 | Jensen No. 2 | 06/29/03 | Blucher Creek | I,S | 2.92 | | 205 | 35 | 30 | 103 |
| 148 | Larson No. 1 | 03/26/08 | Blucher Creek | I | 1.11 | | 78 | 26 | 30 | 103 |
| 149 | Larson No. 2 | 03/26/08 | Blucher Creek | I | 1.47 | | 103 | 1 | 29 | 103 |
| 150 | Larson No. 3 | 11/29/12 | Blucher Creek | I,S,D | .56 | | 39 | 26 | 30 | 103 |
| 151 | Larson No. 4 | 11/29/12 | Blucher Creek | I | .28 | | 20 | 1 | 29 | 103 |

[1]D-Domestic; I-Irrigation; Ind.-Industrial; Mil.-Milling; Min.-Mining; S-Stock; Preferred-These appropriations of water to be allowed to flow in the stream in lieu of the return flow which the stream received in the past from these rights and in exchange for water to be stored in the Upper Rock Creek Reservoir, not to exceed 2,800 acre feet.

[2]S.S.-Supplemental Supply.

[3]Sweetwater River water appropriations made upstream from the study segment.

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