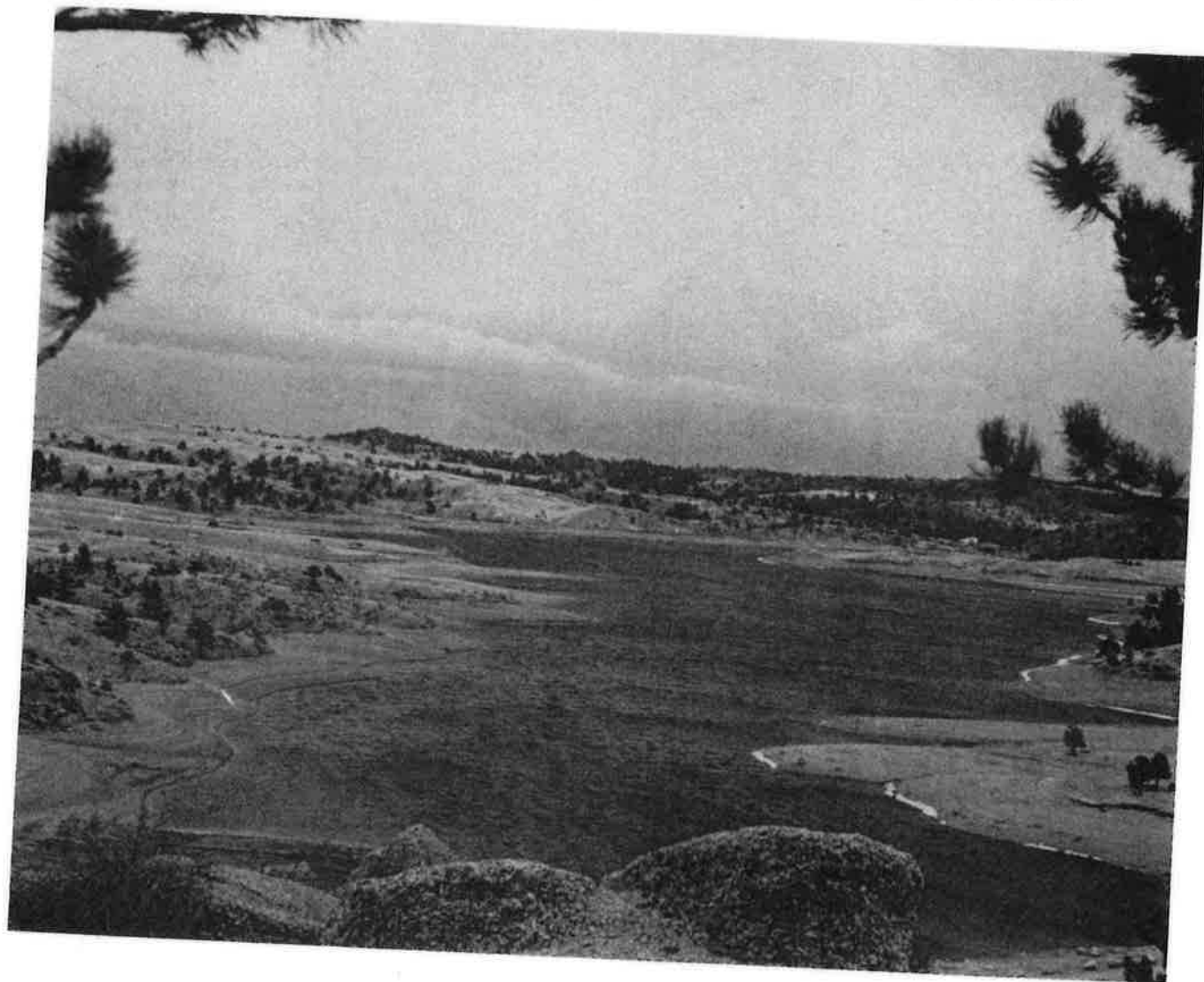


Master Plan for Curt Gowdy State Park



PREPARED BY:
WYOMING RECREATION COMMISSION
AND
UNIVERSITY OF WYOMING
DEPT OF RECREATION AND PARK ADMINISTRATION

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Harlan Blake

Susan Borjeson

Peter Brewster

Theresa Eichhorn

Michael Fraysier

Mark Johnson

Jean Mansfield

Gary Max

John Neilson

Calin O'Brien

Lynn Schmitt

J. Sheehan

John Tammela

Anita Voogd

Michael Wade

Karen Watkins

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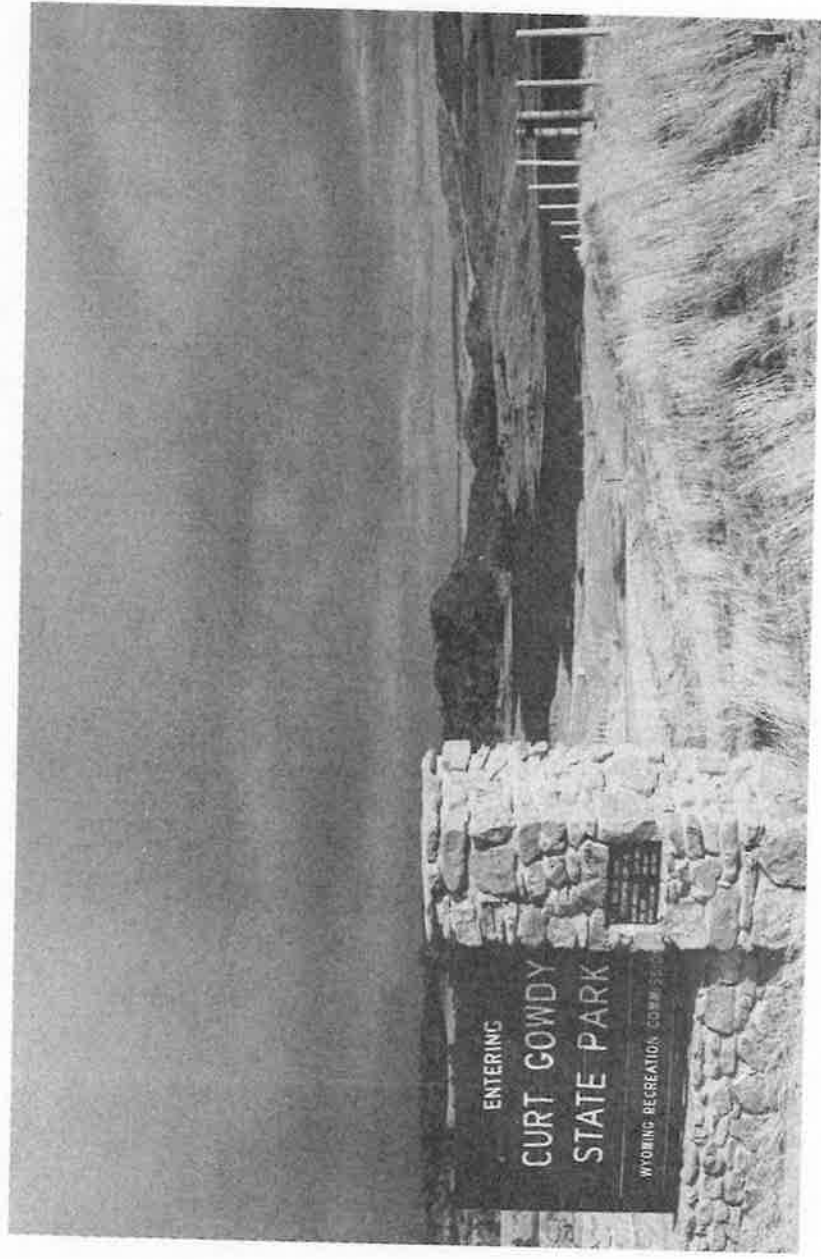
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Introduction



INTRODUCTION

Curt Gowdy State Park is located in southeastern Wyoming in the foothills of the Laramie Mountains. The park is easily accessible from Cheyenne, 26 miles to the east, and Laramie, 22 miles to the west. Map 1 indicates the park's location and its proximity to other communities and recreation areas in Wyoming and surrounding states.

The park includes Granite Springs Reservoir, Crystal Lake Reservoir, Hynds Lodge and the newly acquired Section 17. The total land area is 1645 acres, and the total water area is 285 acres. Because of a water shortage in the early 1900's, the City of Cheyenne built both Crystal and Granite dams to supply the city with drinking water. Curt Gowdy State Park was established in 1971 through a lease agreement with the City of Cheyenne and the Boy Scouts of America. Recreation facilities within the park boundaries are managed by the Wyoming Recreation Commission under an agreement with the City of Cheyenne. More information on the park operation and the factors which influence water levels are presented in Section V.

Other than Curt Gowdy State Park, the only water based recreation area near Cheyenne is North Crow Reservoir. Additional recreation resources in the region are the Medicine Bow National Forest, Glendo and Guernsey State Parks and Rocky Mountain National Park.

Visitation to Curt Gowdy State Park has increased steadily in response to the rapid population growth of the state. Visitation in 1981 totaled 67,012 and is projected to increase to 97,209 by 1990. More information on park visitation is presented in Section VI.

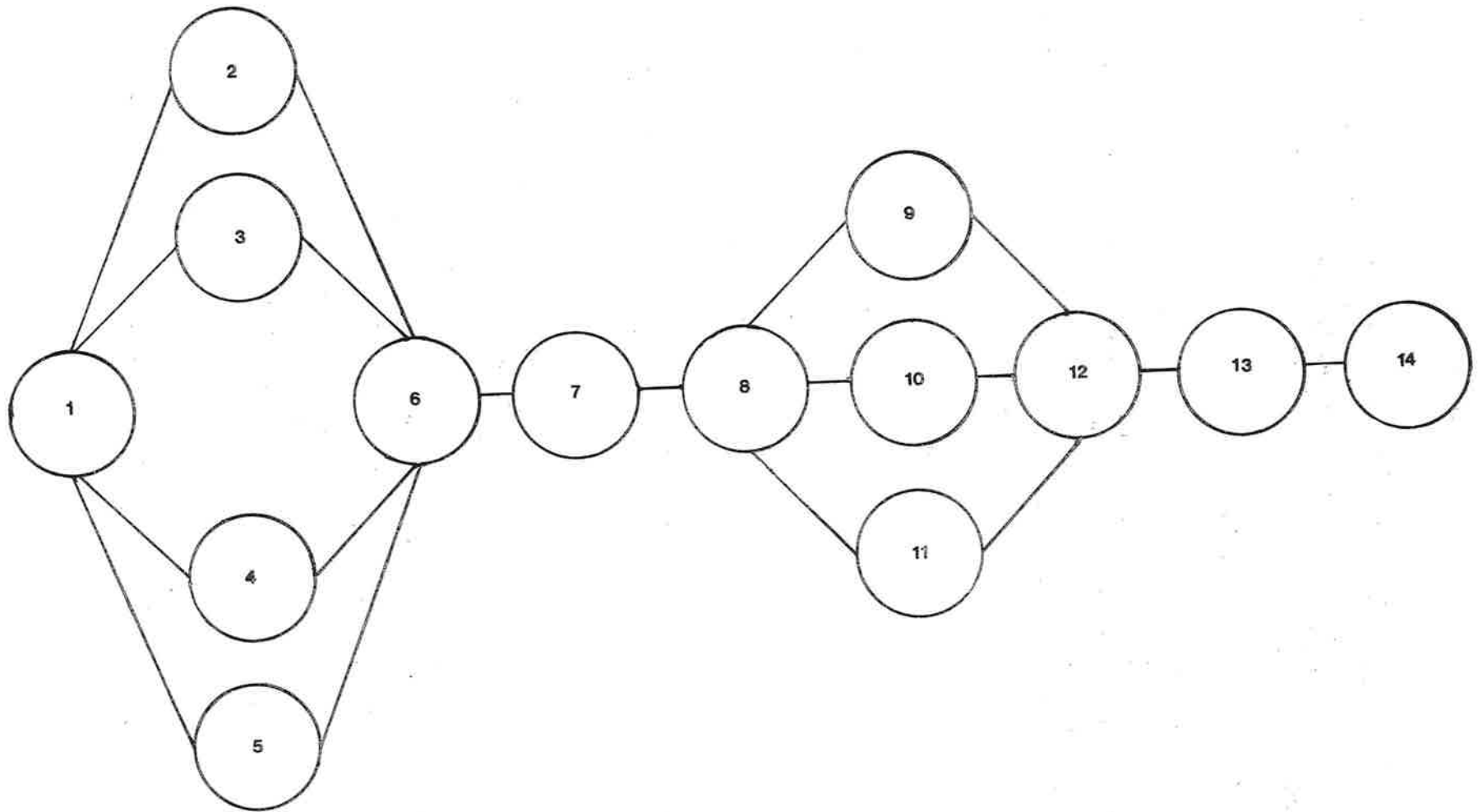
The development of recreation facilities within the park has not kept pace with growth in visitation. A shortage of facilities already exists, and will become worse if new facilities are not developed to serve the future demands of additional users.

The planning process (Figure 1) provided for the organized preparation of the Curt Gowdy State Park plan. This plan was developed to provide for the needs of existing and future visitors and to maintain the qualities for which Curt Gowdy State Park was established. It provides for the development of additional recreational facilities and the implementation of regulations designed to protect the park's natural resources and recreational values. Equally important is the overall development plan for the newly acquired Section 17. A detailed description of the plan is presented in Section VIII.

Comments received during the public meeting held in Cheyenne also provided valuable guidance to the development of the plan. These comments are summarized in Appendix A of the plan.

The plan was developed due to the recent acquisition of Section 17. The acquisition of this property may change the visitor use patterns. Therefore, updating of the visitor use data and a reevaluation of the development objectives and plan may be necessary every few years.

Figure 1
Planning Process



1 Start

2 Regional Context

3 Resource Mgt. Inventory

4 Park Visitor Inventory

5 Physical Resource Inventory

6 Program

7 Development Alternatives

8 Public Hearing

9 Graphics

10 Conceptual Site Plans

11 Development Plan

12 Cost Estimates

13 Development Phasing

14 Completed Master Plan



Regional Inventory

SUMMARY OF REGIONAL INVENTORY

Knowledge of the region's demography, travel patterns and recreational opportunities will assist in the planning of the various developments to be proposed at Curt Gowdy State Park. The population, traffic patterns and type of recreational opportunities located in the region are extremely diverse and have a strong effect on Curt Gowdy park visitation and use patterns.

The majority of visitors go to the park in order to shore fish, relax or picnic. There are a broad variety of recreational opportunities available at the many local, state and national parks and forests located throughout the region.

Existing travel routes to the park are sufficient to serve the park's future needs during summer use periods. However, if developments are proposed which will increase visitor use during the winter, access to the park will become a problem that will need to be resolved.

The rapid population growth projected for the area will also affect visitation to the park. The increased use of the park will pose serious problems for the development and operation of the park.

Regional Recreation Opportunities

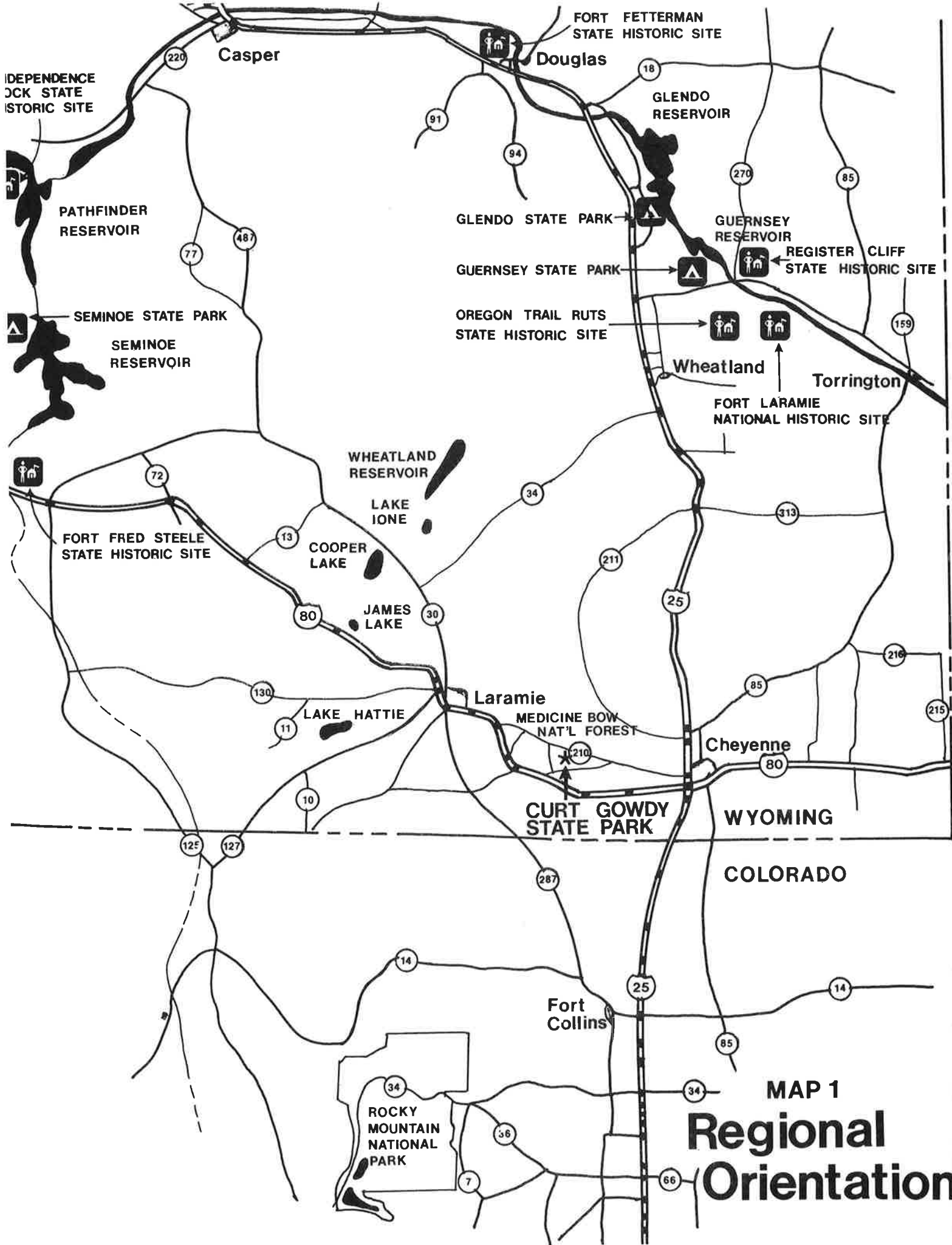
The region surrounding Curt Gowdy State Park contains a wide variety of both urban and rural recreational opportunities. A broad range of urban oriented recreational opportunities are available in Laramie and Cheyenne. Both cities have extensive municipal park systems, with playgrounds, tennis courts, softball fields and other amenities. Camping, picnicking and fishing are available in the nearby Medicine Bow National Forest as well as at Glendo and Guernsey State Parks. Outdoor recreation opportunities are also available at Rocky Mountain National Park which is easily accessible to the majority of Curt Gowdy State Park users.

The Pole Mountain District of the Medicine Bow National Forest is the closest recreation area which competes with the park for visitors. The Pole Mountain District provides three picnic grounds and four campgrounds all of which are within easy access of the park. There are also excellent hiking, climbing and fishing opportunities available. During the winter months, the Forest Service provides a variety of recreational opportunities, the most popular of which is ski touring.

The Snowy Range portion of the Medicine Bow National Forest offers recreational opportunities similar to the Pole Mountain District, but it also contains the Savage Run Wilderness Area.

Glendo and Guernsey State Parks are both located within easy access to the majority of the park users. The two parks are water-based and provide excellent opportunities for lake fishing, waterskiing, powerboating and sailing as well as picnicking and camping. Ice fishing is also popular at Glendo during the winter.

Rocky Mountain National Park offers a variety of recreation opportunities. Primitive and developed campgrounds are available inside the park along with a series of trails and other facilities while a resort community is located within easy access to the park. The park is popular on a national level and suffers from frequent overcrowding.



MAP 1
**Regional
Orientation**

Access

The only direct access to Curt Gowdy State Park is the Happy Jack Road (State Highway 210). This two-lane paved road extends from Cheyenne to the entrance of the Medicine Bow National Forest. The road is made of gravel as it winds through the forest until it joins Interstate 25 at the Happy Jack exit. Alternative routes are gravel roads through Medicine Bow National Forest which are reached from Interstate 25 at the Buford and Vedauwoo exits.

The only road which is cleared during winter months is the Happy Jack Road from Cheyenne to the entrance of the national forest. This prevents many people from visiting the park during the winter season.

Existing routes to the park are not adequately marked. First time visitors to the park are confronted with difficulties in finding the site unless they have been provided with direction. Much of the existing signing does not provide adequate direction to the park nor describe recreation opportunities available at the park.

Regional Demographics

The 1981 visitor use figures for Curt Gowdy State Park indicate the majority of Wyoming residents visiting the park are from Laramie and Albany counties. Of the resident users, 90.8% are from Laramie County and 4.8% are from Albany County.

Wyoming residents account for 81.3% of the total visitation at Curt Gowdy State Park. The only other state with a noticeable use of the park is Colorado, which contributes 5.5% of the total visitation to the park.

TABLE 1

Population Trends and Projections

	1970 Pop. ¹	% Increase ²	1980 Pop. ¹	% Increase ²	1990 Pop.
Laramie City	23,143	5.5	24,410	N/A	N/A
Albany County	26,427	10.0	29,062	17.4	34,816
Cheyenne City	41,254	14.6	47,283	N/A	N/A
Laramie County	56,366	21.8	68,649	27.1	87,241
Wyoming	332,416	41.3	469,557	34.6	631,881
Colorado	2,207,259	30.9	2,888,834	N/A	N/A

¹Figures obtained from Department of Commerce Census Bureau.

²Figures obtained from State of Wyoming, DAFC, Division of Research and Statistics.

Areas contributing the majority of use at Curt Gowdy State Park are also expected to receive large population increases by 1990. The populations of both Laramie and Albany counties are projected to increase at a rate greater than the national average of slightly more than the 9% projected by the U.S. Bureau of Census. Although projections were unavailable for Colorado, it appears their growth will also exceed the national average. The increased growth in these areas should contribute to increased visitation at Curt Gowdy State Park.

Physical Resource Analysis



SUMMARY OF PHYSICAL RESOURCE

The physical resources of Curt Gowdy State Park present some opportunities for and limitations to development. Soils, although fertile, are shallow and unstable in many areas. Consequently, most development activities will require stabilization measures to insure erosion does not occur. Much of the park is characterized by steep slopes. While adding to the visual character of the area, slopes in excess of 10% pose serious development limitations and are probably best suited to non facility dependent forms of recreational use. Vegetation distribution and prevailing wind patterns are also important considerations when planning for future development. Facilities should be located so they are protected from prevailing northwesterly winds, making good use of existing wind-breaks or by using additional plantings where possible. Development within the park must not detract from the overall visual setting. Scenic corridors and vistas should also be protected.

Perhaps the most important physical resource consideration at Curt Gowdy State Park is the maintenance of high water quality in Granite and Crystal Reservoirs. These reservoirs constitute the public water supply for the City of Cheyenne. The entire park, including Section 17, lies within the immediate watershed of these two reservoirs and any future development activity within the park has a potential impact on the water quality of the reservoirs.

Climate

The climate of Curt Gowdy State Park can be described as semi-arid with annual precipitation ranging from 13 to 16 inches. Summer precipitation is in the form of showers with an occasional cloudburst. Winter snowfall averages 54 inches annually. Temperatures vary widely from -27 degrees Fahrenheit in winter to 98 degrees Fahrenheit in summer. December, January and February are the coldest months with an average daily high/low of 40/17 degrees Fahrenheit. The warmest months are June, July and August with an average daily high/low of 80/52 degrees Fahrenheit. The length of the frost-free season averages 130 days a year. Prevailing winds are from the northwest and are relatively strong, averaging 15 miles per hour in the winter months and 12 miles per hour in the summer months.

The climatic factor which has the greatest influence on recreation at Curt Gowdy State Park is wind. The reservoir affords little protection from the strong prevailing winds, making it difficult to launch and load boats. This is particularly true at Granite Reservoir where boating activity is high. In addition, future development at the park must consider local wind patterns and avoid natural wind tunnel areas. Rock outcropping plus trees and other shelter break plantings can effectively be used to reduce wind velocity and should be utilized where appropriate.

Solar orientation at Curt Gowdy State Park is another climatic factor which has implications for future development. There are an average of 233 days of sunshine annually. The sun reaches its highest point in the sky on June 22 (summer solstice) at a 73° angle while falling to an angle of 26° on December 22 (winter solstice). The amount of shade at the park will be less during the summer months due to the high angle of the sun. This fact, coupled with the potential for high daily temperatures during the summer indicates additional shade may be desirable.

Since data were not available specifically for Curt Gowdy State Park, data on Cheyenne climatic conditions were used. Precipitation and temperature data were furnished by the National Weather Service. Compensation for temperature differences were accomplished by subtracting 3 degrees from Cheyenne averages because Curt Gowdy State Park is approximately one thousand feet higher in elevation. Wind patterns were supplied by the park superintendent, and annual snow depths were obtained from the University of Wyoming Atmospheric Sciences Department.

Soils

Soil types within Curt Gowdy State Park are generally characterized by shallow depth to bedrock and range from sandy to clayey in structure. Shallow to very shallow soils provide adequate bases for many facilities such as picnic areas and playgrounds, but present an obvious limitation for the development of buildings and structures requiring foundations. A soil survey was conducted (see Table 2) which showed the majority of soils in the park contain a high concentration of sand. The most productive soil type in the park is silty loam, which is found along the southern shore of Granite Reservoir. The high amounts of organic matter in the soil south of Granite could support any native vegetation types. The sandy and silty loam soils found near the shorelines are capable of supporting revegetation efforts. Due to the shallow depth and sandy nature of the soils, any activity on the park, particularly the use of off road vehicles, will adversely affect groundcover.

NOTE: A more detailed soil analysis may be necessary for areas requiring more intensive development.

TABLE 2

Soil Analysis

Area	Soil Texture	Organic Matter % (A)	Available Phosphorus	pH (B)	Soluble Salts (C)	Special Analysis Lime	Analysis Nitrate-Nitrogen
Section 17	Sandy	3.7	13.6	6.9	0.4	None	9.2
North Shore Granite Reservoir	Sandy	1.2	4.2	7.0	0.3	None	2.1
South Shore Granite Reservoir	Silty Loam	5.6	8.0	6.5	0.6	None	26.2
Crystal Reservoir	Sandy	1.6	5.9	6.9	0.2	None	1.8

NOTES:

(A) - 2.0 is normal (native) range.

(B) - Good pH range (6.5-7.0).

(C) - Good drainage overall - no salt problems.

Geology

Curt Gowdy State Park is set in the foothills of the southeastern edge of the Laramie Mountains. Along this section of land the Great Plains first meet the Rocky Mountains. The Laramie Mountains, a continuation of the Colorado Front Range, have been gradually reduced through time and erosion to low relief. Older Pre-Cambrian crystalline rock essentially make up the core of these mountains. Rock outcrops of Sherman Granite represent the youngest major Pre-Cambrian unit in the Laramie Range, and represent an important visual resource. Resting along the eastern front of the Laramie Mountains is a narrow remnant of the flatlying sedimentary rocks of the later Tertiary Period. These tertiary rocks (essentially sandstones, conglomerates and siltstone) rest on top of rocks of the Mesozoic and Paleozoic Ages (sands and gravels). Both Granite Reservoir and Crystal Reservoir are sedimentary rock basins caused by erosion.

Topography

Curt Gowdy State Park occupies roughly 1930 acres and segments of seven sections. The land varies in elevation from 7700 feet in the NW corner of Section 17 to 6969 feet at the spillway for Crystal Reservoir, or the NE corner of Section 26. The land's character includes low-lying meadows, gently rolling hills and precipitous slopes dotted with steep granite massifs.

Generally, slopes greater than 10% present some limitation to development. Such slopes are often characterized by unstable soils and are more susceptible to erosion than more gently sloping areas. Approximately 60% of the park land is of 10% slope or less and is suitable for some development activity.

Vegetation

Vegetation types at Curt Gowdy State Park include grasses, forbs, shrubs and trees. Within each of these vegetation types exists a wide diversity of plant species. Table 3 includes a listing of some of the more common species found in the park.

Generally, the park is characterized by Ponderosa Pine trees and short-growing grasses. Closer to the reservoirs, there is an increase in shrub and forb species. Section 17 is the most heavily forested area within the park and has excellent recreation potential.

The Park Superintendent is working jointly with the City of Cheyenne in controlling the noxious weed Canada Thistle. The herbicide being used is not selective, therefore other vegetation that comes into contact with it may be destroyed.

Vegetation within the park helps to determine the kind of recreational opportunities available. For example, wooded areas may be more suitable for camping and picnicking, while softball, kite flying and other more active recreational pursuits are more appropriate in open areas. Vegetation also determines the number, species and migration habits of wildlife at the park.

TABLE 3

Plant List

Curt Gowdy State Park

<u>Types</u>	<u>Species-common name</u>	<u>Types</u>	<u>Species-common name</u>
<u>Grasses</u>	Basin Wildrye	<u>Forbs</u>	Cocklebur
	Big Bluestem		Goldenrod
	Bluebunch Wheatgrass		Common Ragweed
	Blue Grama		Common Yarrow
	Bottlebrush Squirreltail		Gun Weed
	Canby Bluegrass		Milkvetch Family
	Cheatgrass		1. Field Milkvetch
	Crested Wheatgrass		2. Short Milkvetch
	Green Bristlegrass		3. Standing Milkvetch
	Green Needlegrass		Plains Larkspur
	Nuttall Alkaligrass		Prickly-Pear
	Mountain Brome		Short Buttercup
	Slender Wheatgrass		Sulfur Flower
	Western Wheatgrass		Tansey Mustard
			Thistle Family
			1. Canada Thistle
			2. Flodman Thistle
			3. Russian Thistle
			White Sweetcover
			Yellow Aster
			Yellow Sweetcover
<u>Shrubs</u>	Antelope Bitterbrush	<u>Trees</u>	Cottonwood
	Black Sagebrush		Juniper
	Bluebur Stickseed		Ponderosa Pine
	Golden Current		Rocky Mountain Maple
	Harefoot Loco		Willow
	Rubber Rabbitbrush		
	Saskatoon Serviceberry		
	Sagewort Family		
	1. Common Sagewort		
	2. Fringed Sagewort		
	3. Lousiana Sagewort		
	4. Tarragon Sagewort		

Fish and Wildlife

Both Granite Reservoir and Crystal Reservoir are stocked with fish three times a year. The Wyoming Game and Fish Department stocks both reservoirs with ten thousand rainbow trout (8") in April, again in May, and finally in June. The sixty thousand fish added to these two reservoirs makes these the two most heavily stocked bodies of water within the State of Wyoming. Several hundred broodcalls (16" to 20") are also put into these reservoirs over the same period. Some perch exist in Granite Reservoir, but it is not a stocked species.

Typical wildlife species to be found in the region of Curt Gowdy State Park are identified in Table 4. Although recent national trends have indicated a strong and consistent growth in non-consumptive recreational use of wildlife (photography, bird-watching, etc.), consumptive use of wildlife (fishing, hunting) continues to be the dominant recreational use of wildlife in and around Curt Gowdy State Park. The hunting of deer, elk, antelope, and birds has been and is expected to remain a major recreational activity on both private and federal lands surrounding the State Park.

TABLE 4

Wildlife Species*

Curt Gowdy State Park

Type	Species	Type	Species
Mammals	Shrew	Birds	Pintail Duck
	Jack Rabbit		Mallard Duck
	Squirrel		Blue & Green Teal
	Raccoon		Hawk
	Porcupine		Golden & Bald Eagle
	Badger		Turkey Vulture
	Spotted Skunk		Falcon
	Beaver		Rock & Mourning Dove
	Mouse		Night Hawk
	Chipmunk		Kingbird
	Fox		Woodpecker
	Mule Deer		Chickadee
	White Tail Deer		Mountain Bluebird
	Pronghorn Antelope		Blackbird
			Tanager
			Jay
			Wren
			Crow
			Robin
			Junco
			Towhee
			Finch
			Thrasher
			Sparrow
			Swallow
			Magpie
			Catbird
			Meadowlark
			Warbler

*Wildlife information was obtained from the Wyoming Game and Fish Department. The wildlife information is not specific to Curt Gowdy State Park and pertains to a larger area surrounding the park.

Water Quantity

The natural water drainage into Granite Springs and Crystal Lake Reservoirs amounts to 3,700 acre feet per year. An additional 7,400 acre feet per year is transported from Stage I and about 3,000 acre feet pumped to Cheyenne by city water wells. Middle Crow Creek feeds into Granite Springs Reservoir and the inflow into Crystal Lake is from the South Fork of Middle Crow Creek and from Granite Springs Reservoir.

The maximum surface area of Granite Springs Reservoir is 188 acres with a water holding capacity of 5,321 acre feet (approximately 90'). The minimum desired surface area is 50 acres with a water holding capacity of 510 acre feet (approximately 45'). For Crystal Lake Reservoir, the maximum surface is 122 acres with a water holding capacity of 3,620 acre feet (approximately 66'). The minimum surface area is 40 acres with a water holding capacity of 530 acre feet (approximately 45'). Water levels may be lowered below minimum levels if water demand dictates.

Yearly water level fluctuation data have been obtained for both Granite Springs and Crystal Lake Reservoirs. The average yearly fluctuation (1961 to 1976) for Granite Springs was 19 feet per year and 13 feet per year for Crystal Lake. These fluctuations are due to the variations in water supply and the City of Cheyenne's water demand.

Plans to inspect and possibly rebuild Crystal Lake Reservoir's dam have been discussed. A new dam may increase the water holding capacity as well as insure the safety of the general public.

At Curt Gowdy State Park there are six water wells. Four of these wells are presently being used, while the other two are non-operational. Specific hydrologic data for each well is outlined in Appendix D.

Water Quality

The Wyoming Department of Environmental Quality (DEQ) is responsible for the water quality in Granite Springs and Crystal Lake Reservoirs. The DEQ water quality standard for these reservoirs is 200/100 ml. for fecal coliform (DEQ, 1982). The table below indicates water quality data collected from both reservoirs.

TABLE 5
Water Quality Data

Lake	Date	Fecal Coliform
Granite Springs	6/11/81	0/100 ml
Granite Springs	7/13/81	18/100 ml
Granite Springs	7/21/81	6/100 ml
Crystal Lake	6/11/81	1/100 ml
Crystal Lake	7/13/81	26/100 ml
Crystal Lake	7/21/81	13/100 ml

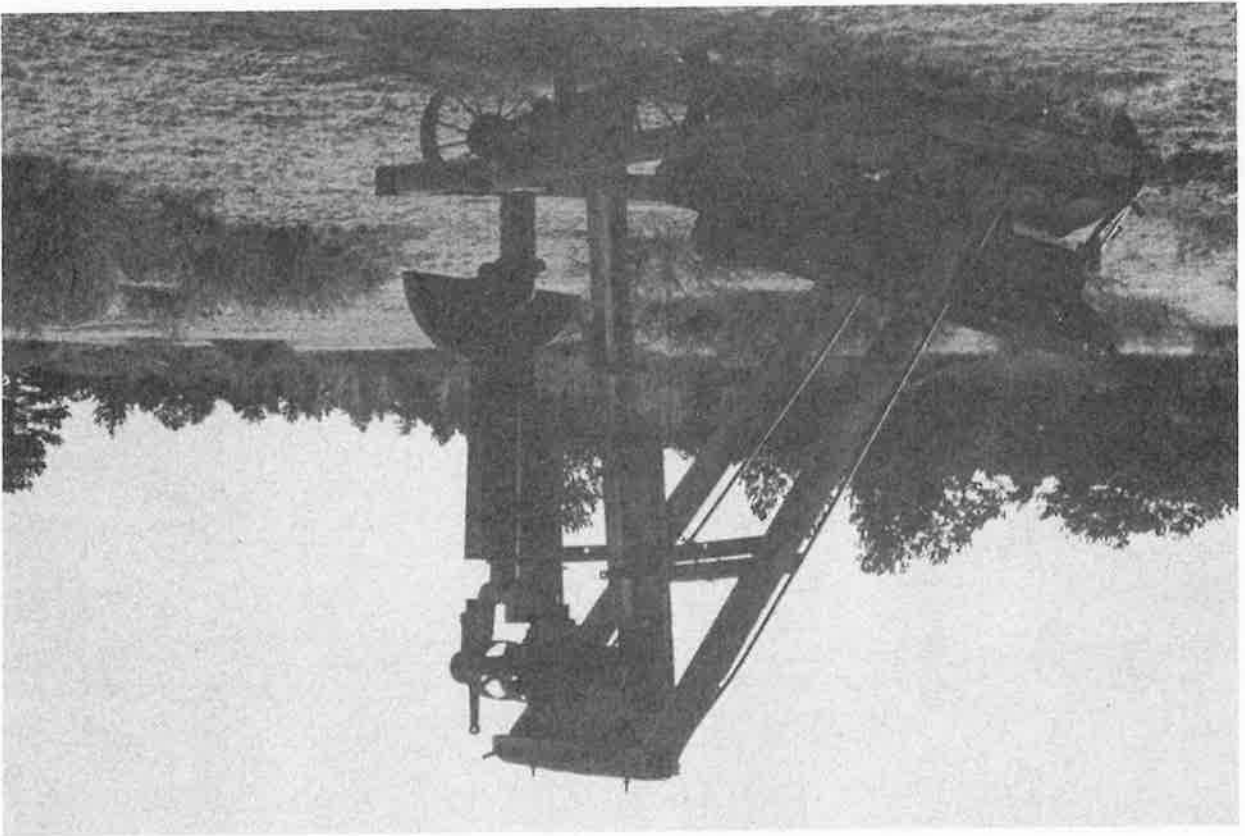
The water quality standard required by the DEQ is met in both reservoirs. Even though the water quality in the reservoirs satisfied DEQ standards, swimming is not allowed because of the possible negative effects on water quality.

Visual

Curt Gowdy State Park offers a variety of scenic vistas from both off and on-site even though certain activities and management practices have detracted from the visual setting. A particularly striking view of the park is from Section 17 overlooking Granite and Crystal Reservoirs. Views such as this should be enhanced by proposed developments at the park. Development of campgrounds, picnic areas, restrooms and roadways should consider the impact on the visual resource.

Areas having visual significance are important assets to the park. These areas should be developed to take maximum advantage of the aesthetic values of the park. The visual character of the park should be improved in areas where development or use of the land has created any eyesore.

Existing Resource Management And Facilities



SUMMARY OF EXISTING RESOURCE MANAGEMENT AND FACILITIES

Activity at the park is regulated by both Federal and State law. Law enforcement at the park is the responsibility of the Laramie County Sheriff's Department, but is insufficient due to two reasons. First, the location of the park makes quick response to calls difficult. Secondly, the Sheriff's staff is limited in the manpower needed for providing adequate attention to the park. The Wyoming Game and Fish Department is the only other entity with enforcement capabilities at the park. The Game and Fish Department is responsible for enforcing restrictions pertaining to fishing, hunting and boating regulations. The Wyoming Recreation Commission is currently experiencing visitor control problems at Curt Gowdy State Park. Methods for improving law enforcement should be developed in order that future development can be successfully maintained.

Water levels at Granite and Crystal Reservoirs fluctuate widely due to water withdrawal by the City of Cheyenne. Levels are generally high in the spring and low in the fall. Each reservoir is affected differently however, with Crystal Reservoir maintaining a more constant level than Granite. Water demand from the reservoirs is projected to increase dramatically in future years, and although the Stage II water project has passed, the outlook for improved water level stability in the near future is not good. Therefore, water level fluctuations should be considered as an annual occurrence when planning development around the reservoirs.

No cultural resources have been identified within the park except for an old logging operation in the newly acquired Section 17. A survey of Section 17 is necessary for locating the precise locations of sites with significant historical or cultural interest, and should precede all development within this section. Outside the park, areas of historical interest have been identified including the old mining ghost towns of Hecla and Silver Crown. These areas are not factors affecting park development, but if properly interpreted to the public, may offer additional incentive for visitation within the area.

Vandalism and misuse hampers facility management within the park, and is in part due to facility placement. Picnic and campsites are widely dispersed and used indiscriminately. Future design should organize these functions with adequate separation of day and overnight use. Restrooms are of an acceptable architectural style, but are overly abundant, dispersed, and visually dominant. Planning of these facilities should consider the actual needs of each area, and strive to concentrate facilities to reduce vandalism. Restroom structures should also be placed so as to blend into the landscape, avoiding locations on hilltops or open fields. Potable water sources are few and their locations are not properly conveyed to the public. One dump station is found within the park, but its location is not well advertised to park visitors. A well-designed archery range exists at the park, but requires better signage for both safety and information purposes. Finally, roads should be analyzed as to their proper placement, and traffic and information signing improved to enhance maintenance and control of off-road vehicle travel.

Law Enforcement

Lack of adequate law enforcement is the most critical problem facing the future development of Curt Gowdy State Park. This problem is system-wide and must be given careful examination prior to facility expansion and development at all parks. Currently, the Wyoming Game and Fish Department is responsible for enforcing

hunting and fishing laws and U.S. Coast Guard boating regulations. Fishing licenses and catches are frequently verified and boaters are checked for proper registration and required safety equipment. Citations may be given by the Game and Fish Department to those operating boats recklessly or under the influence of alcohol.

Problems such as violation of park regulations, off-road vehicle abuse, littering, vandalism and other criminal acts currently are under the jurisdiction of the county sheriff's department. When a violation occurs, it is necessary to leave the main area of the park and drive to the park headquarters to phone the county sheriff's office. This situation has made law enforcement virtually impossible. Many of the existing resource problems such as excessive roads, vegetation damage, erosion, vandalism, and indiscriminate use of park facilities are a direct result of an unworkable law enforcement system.

Serious consideration should be given to the appropriateness of investing public monies in resource improvement and facility expansion until a workable system for protecting these resources is available.

Facilities and Circulation

The locations of picnic and campsites are widely dispersed within the park. Indiscriminate usage of the area occurs as a result of a lack of designated use areas. There are few differences between picnic and campsites. A clear differentiation between these use areas should be developed. In relation to equipment types, picnic tables are of a stable concrete style, trash cans are of steel, and grills are concrete and located on the ground. (Refer to Map 2.)

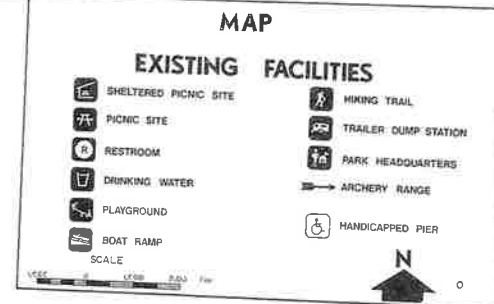
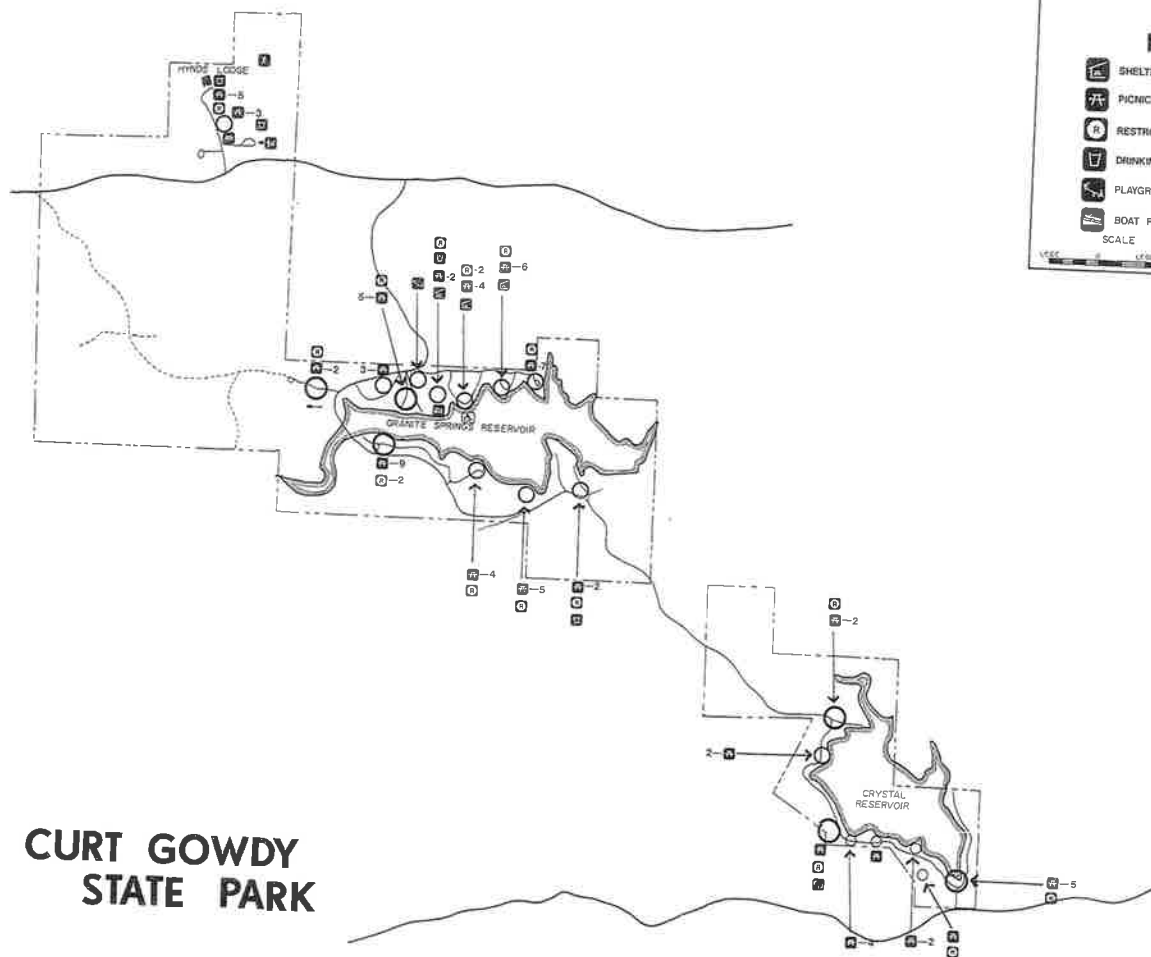
Vault-type restrooms are also widely dispersed and readily noticed by the visitor. There are two architectural styles of restrooms, each of which are acceptable, given proper location within the landscape.

Potable water sources are scarce in the park. Only two sources at Granite Reservoir are available for public use with additional sources at Hynds Lodge and the park office. One dump station now serves the park and is located near the park office. The locations of these water sources are not advertised well to the public. Currently, there is no potable water source available for the Crystal Lake area.

A large, well-designed field archery range also exists within the park, near the causeway of Granite Reservoir and adjacent to Section 17. Although use statistics are unavailable, it appears to offer a unique recreational opportunity for area archery and hunting clubs. The nature of the terrain on which this range is located precludes its use for alternate recreation development. Presently, there is inadequate signage describing the range and its location.

Indiscriminate off-road activity has occurred within the park and has created numerous unnecessary road systems. Loss of vegetation and erosion have resulted. Although there are a series of well-established roads within the park, better road planning may be necessary to accommodate future development. Additionally, increased signage may be necessary for directing traffic to various areas. Existing asphalt roads are located on an unstable soil base on a steep slope. The only asphalt road in the park is located on an unstable soil base on a steep slope. These conditions make maintenance of the surface very difficult. The majority of the road is also located on private land. Because of these factors, consideration should be given to moving the main entrance road.

CURT GOWDY STATE PARK



There is currently no interpretive signage or program at the park, but an interpretive plan has been scheduled.

TABLE 6

Existing Park Facilities

	Granite Reservoir	Crystal Reservoir	Hynds Lodge
Covered Picnic Tables	3	-	-
Picnic Tables	49	19	8
Grills	41	18	3
Trash Cans	11	7	-
Double Restrooms	3	1	-
Single Restrooms	7	3	1
Potable Water Sources	2	-	1
Lodge	-	-	1

Off-Site Historical Resources

The area surrounding Curt Gowdy has few known sites of potential historical significance. One of these is the old mining or ghost town known as Hecla, located twenty miles west of Cheyenne just off the Happy Jack Road, near Crystal Reservoir. Another is a short-lived mining camp called Silver Crown.

A fair-sized silver mining district was formed at Hecla in the spring of 1886. Largely the brainchild of Wyoming Territorial Geologist, Professor Aughery, there is evidence to suggest the boom was an intentional fraud. While claims sprang up rapidly and \$40,000 was quickly invested, the boom ended after only one season. Down the road, twenty two miles northwest of Cheyenne another camp evolved in the Silver Crown Hills. Like so many mining adventures of the era, the promotions proved to be greater than the resources. Silver Crown was abandoned almost at once and by 1886-87 the Cheyenne City Directory listed only a post office and three residents there.

Few realized at the time that the era of the open range cattle industry in the surrounding area was also drawing to an end. The severe winters and droughts of the late 1880's would end the open range forever and completely change the cattle ranching industry. The cattle industry, of course, revived and today remains as the principal enterprise of the area although it is now giving way somewhat to recreation. One or two local historic ranches also remain in pristine enough condition to warrant mention in any general interpretive display.

Recreational use of the area began as early as 1904 because of water development in the area. After various attempts to supply sufficient water for Cheyenne's demand and following several shortages, the Granite Springs Reservoir and supply line were completed in 1904. The reservoir provided Cheyenne water until 1910 when an additional supply was developed at Crystal Dam.

Presently, Silver Crown and Hecla are on privately owned land. From available information, both sites are difficult to locate and not easily accessible. Due to these limitations, we would consider the interpretive potential of these sites as quite low unless they can be incorporated into a more general display at the park which identifies some of the region's colorful history.

Cultural Resources

Currently, there have been no surveys for archaeological sites at Curt Gowdy State Park. Such a survey could be contracted at an estimated cost of \$7,500. In keeping with existing legislation, before the actual survey can be started, the following steps must be undertaken:

Class I - The Overview

Definition: A broad-brush inventory of a large geographic area, based on previously known or recorded information.

Objectives: 1) To compile, in one document all previously recorded data about the nature, distribution and values of cultural resources in the area covered, and 2) to derive estimates of potential values or likelihood of additional cultural resources existing in the area covered.

Class II - Partial Field Inventory

Definition: A field inventory of a project area or set of alternative project areas in which a systematic sampling strategy is used to select actual ground portions to be examined.

Objectives: 1) To predict, within the limits of sampling error, the total number, nature and distribution of cultural resources present in the area sampled, and 2) to locate and prepare an inventory record for each cultural resource present on ground portions actually field-examined.

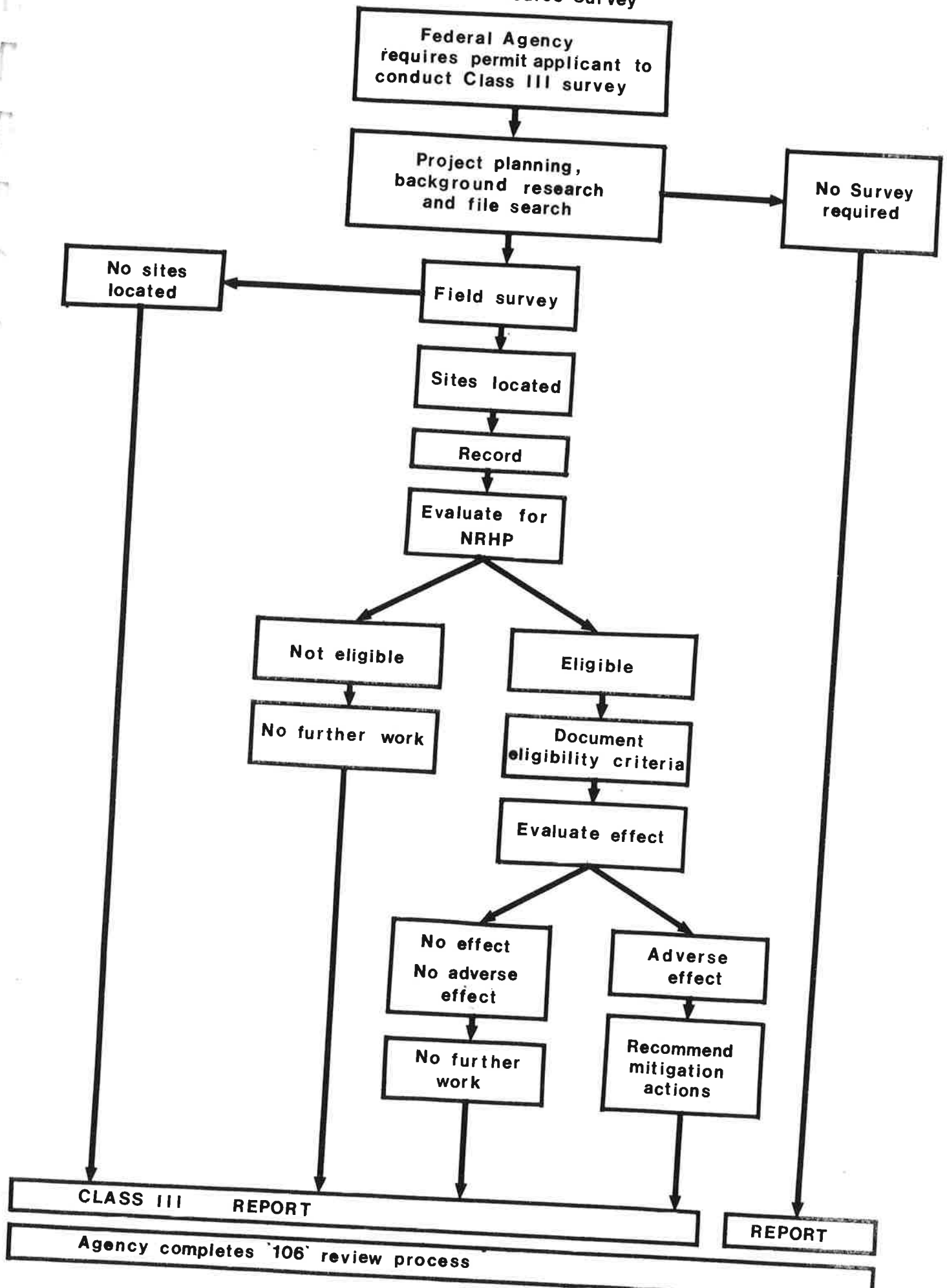
Class III - Complete Inventory

Definition: A comprehensive inventory of a specific project area; in almost all cases it includes a field examination of the project area and an evaluation of resources examined.

Objectives: 1) To locate and accurately describe 100% of the visible cultural resources in the project area, and 2) to evaluate any cultural resources located in the project area.

A flow chart follows, summarizing the above information.

Figure 2
Cultural Resource Survey



Cheyenne Stage II Water Development Project

The United States Forest Service plan known as the Cheyenne Stage II Water Development Project is projected to increase flow of water into Curt Gowdy State Park through a water diversion project. This flow will be increased by approximately 5400 acre feet annually, using water from the North Platte River drainage in the Medicine Bow National Forest. A future proposal of the Cheyenne Board of Public Utilities is the Cheyenne Stage III Water Development Proposal which will reportedly supplement the regional water reserves for Carbon, Albany, Natrona, Converse, Niobrara, Goshen, Platte, and Laramie counties. Water will be diverted from the Little Snake River headwaters and stored. It may then be used in the Snake River drainage or transported across the Continental Divide to the North Platte River drainage, and connected with the Stage II project.

Water Uses

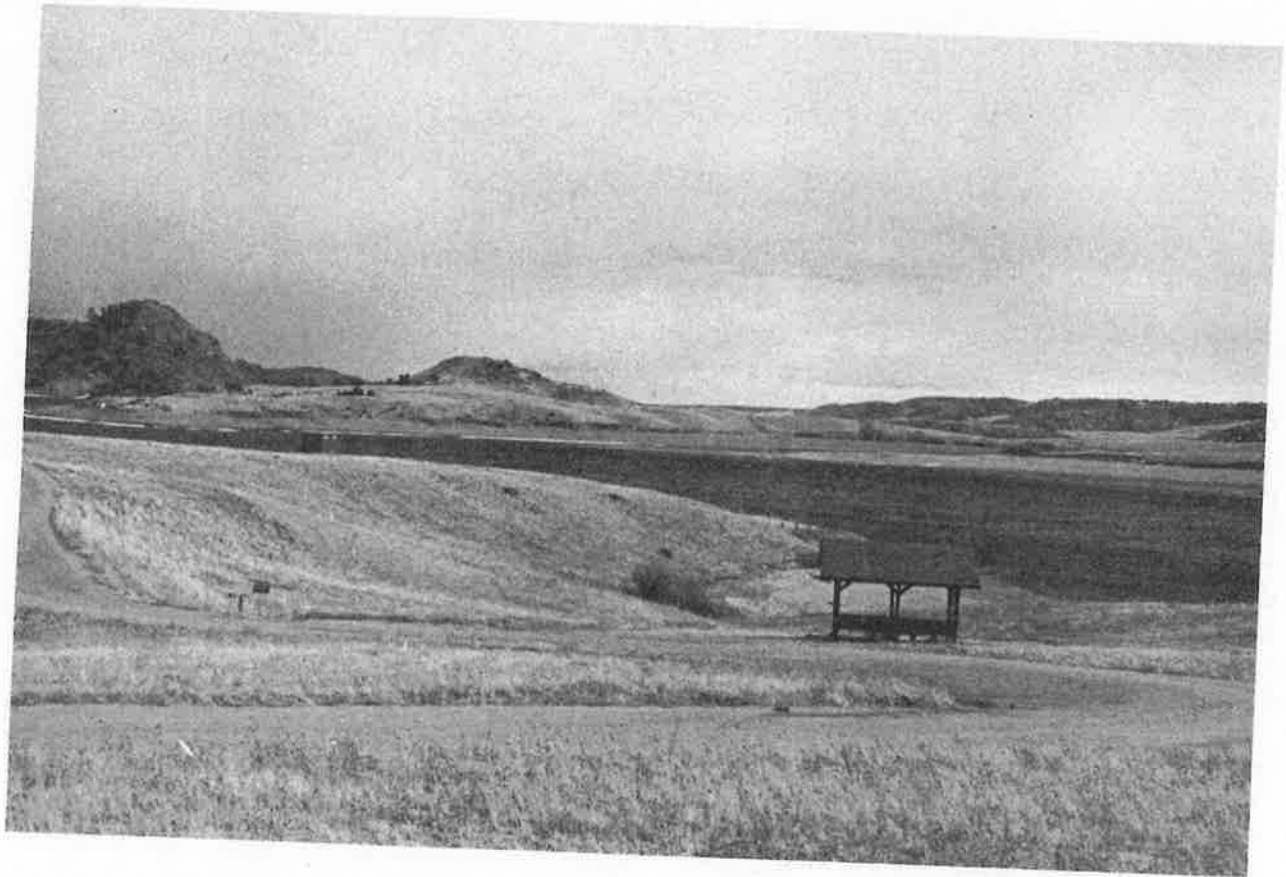
The primary use of the water in Granite and Crystal Reservoirs has traditionally been, and will continue to be, Cheyenne's major source of drinking water. The Cheyenne Board of Public Utilities draws its water from Crystal Reservoir, and attempts to keep Crystal Reservoir at a constant level. Granite Reservoir acts as the supply for Crystal, and becomes subject to much greater fluctuations.

Recreation is a secondary function of the reservoirs and is the focal point of the majority of the park's visitors. Most recreational use of the reservoirs occurs as boating and fishing since both reservoirs are well-stocked with rainbow trout by the Wyoming Game and Fish Department.

For many recreationists, the wide range in reservoir levels at Granite Reservoir can cause some hardship. Surface acreage of Granite Reservoir may range from 188 acres to 50 acres or less, depending on rainfall, snowmelt and consumption by Cheyenne residents. Low water levels often expose islands, sandbars and old stumps. Boaters may become discouraged by such low levels, and choose to recreate in other areas such as Guernsey and Glendo State Parks. Another deterrent to boaters is the park's only boat launching site does not reach the water during late summer and becomes useless to boaters.

Reduced acreage may also inconvenience other users of the lakes, such as picnickers, sightseers, sailors, waterskiers, and motorboat racers. Fishermen may perceive the quality of the experience to be less than optimal as the density of fishermen around the lake increases, and as the acreage decreases. In addition, water temperatures may increase, causing algae to bloom and reach levels excessive for good trout habitat, and this may cause fishing to suffer.

The Cheyenne Stage II water diversification project should be of value to recreational users of Curt Gowdy State Park by alleviating much of the water level fluctuation problem. Increased water flows into Curt Gowdy State Park by the project should raise the water level and moderate fluctuations.



The Park Visitor

SUMMARY OF VISITOR USE

Approximately 81 percent of the total use of Curt Gowdy State Park is by Wyoming residents. Colorado visitors contribute an additional 5.5 percent while other states and countries contribute 13.2 percent. A more detailed analysis of the visitor use data indicates 88.9 percent of all Wyoming resident park visitors were from Laramie County.

Peak visitation occurs during the summer months of June, July and August, with approximately 64 percent of the visitation occurring during the weekends.

Participation patterns between campers and day users indicate several relatively distinct differences. Campers are described as Laramie County families visiting the park for an extended weekend. Campers are more likely to be found relaxing, sightseeing, hiking and boat fishing than day users.

Day users, in contrast to campers, tend to engage in activities which do not depend on a variety of support facilities. Day users can also be described as Laramie County families visiting the park to shore fish, picnic and relax.

The use projections for individual activities were calculated from data collected by the Wyoming Recreation Commission. Projections for 1985, 1990, and 2000 were computed using trend line analysis based on the park visitor use data for 1972 through 1981.

Results from the trend line analysis indicate a steady and progressive increase in participation for both water based and land based activities. Among the land-based activities, the greatest amount of use and the sharpest increase can be expected in picnicking. This anticipated growth can be expected to put an undue strain on existing facilities. Of the water-based activities, shore-fishing is expected to exhibit the largest increase in participation.

SURVEY RESULTS

Visitation data gathered by the Wyoming Recreation Commission during the past decade were analyzed for Curt Gowdy State Park. In addition, a more detailed survey of visitors at Curt Gowdy State Park was conducted during May to September of 1981. The 1981 survey consisted of on-site interviews of 266 adult visitors (16 years or older) contacted throughout the park on randomly selected weekends and weekdays.

Place of Origin

Approximately 81 percent of the total use of Curt Gowdy State Park is by Wyoming residents. Colorado contributes an additional 5.5 percent of the total park visitation. Despite the large percentage of park visitors from Wyoming and Colorado, other neighboring states also contribute to the total park visitation. The origin of visitors to Curt Gowdy State Park is presented in Figure 3.

Social Groups

As can be seen from Table 8 families and couples comprise the majority of campers at the park (69.5% combined). Families are the most frequent day user group (28.6%) although couples (19.5%) and family and friends (18%) also contribute substantially. Therefore, it is observed that families and couples are the most frequent users of Curt Gowdy State Park, both as campers and as day users.

TABLE 8

TYPE OF GROUP VISITORS ARRIVED WITH AT CURT GOWDY STATE PARK -- 1981

Group Type	% All Visitors	% Campers	% Day Users
Individual	7.9	5.3	10.5
Couple	25.9	32.1	19.5
Family Unit	32.7	37.4	28.6
Extended Family	8.6	6.9	10.5
Family and Friends	15.8	13.0	18.0
Friends	7.9	4.6	11.3
Organization	1.1	0.8	1.5

Columns may not add to 100% due to rounding.

Type of Vehicle Used

As indicated in Table 9 the most frequent vehicle unit used by campers is the pickup or camper (26.7%) although automobiles (23.7%), pickups pulling trailers (19.1%), and automobiles pulling trailers (13.7%) also contribute substantially. The majority of the day users (54.1%) use an automobile only, although pickups or campers (30.1%) are also used. Although the majority of campers and day users do not currently require trailer parking, trailer parking will need to be provided for camping areas.

TABLE 9

TYPE OF VEHICLE VISITORS ARRIVED IN AT CURT GOWDY STATE PARK -- 1981

Vehicle Type	% All Visitors	% Campers	% Day Users
Automobile	39.1	23.7	54.1
Automobile Pulling Trailer	7.1	13.7	0.8
Pickup or Camper	28.6	26.7	30.1
Pickup Pulling Trailer	11.7	19.1	4.5
Van	5.3	6.1	4.5
RV Motor Home	7.1	9.2	5.3
Miscellaneous*	1.1	1.5	0.8

*All remaining vehicle types contributed less than 1% of the total.
Columns may not add to 100% due to rounding.

TABLE 10

CURT GOWDY STATE PARK

PERCENTAGE OF VISITATION BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	59.8	66.9	59.9	68.2	63.7	64.4
Weekday	40.2	33.1	40.1	31.8	36.3	35.6
Total Monthly Use	13.4	24.9	22.7	28.3	10.7	100.0

TOTAL NUMBER OF VISITORS BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	5,369.806	11,162.926	9,111.823	12,933.718	4,567.471	43,145.744
Weekday	3,609.802	5,523.062	6,099.901	6,030.678	2,602.813	23,866.256
Total Monthly Use	8,979.608	16,685.988	15,211.724	18,964.396	7,170.284	67,012.000

TOTAL NUMBER OF VISITOR DAYS BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	15,024.189	31,232.772	25,493.985	36,187.273	12,779.335	120,717.554
Weekday	10,099.873	15,452.985	17,066.926	16,873.246	7,282.416	66,775.446
Total Monthly Use	25,124.062	46,685.757	42,560.911	53,060.519	20,061.751	187,493.000

*Estimated from traffic counters and visitor use surveys.

Activity Participation Patterns and Projections

Data from the 1981 Visitor Survey were analyzed to determine the percentage of park visitors participating in a variety of different activities available at Curt Gowdy State Park. This data is shown in Table 13.

Participation patterns between campers and day users indicate several relatively distinct differences. Campers are best described as Laramie County families visiting the park for an extended weekend. Campers are more likely to be found relaxing, sightseeing, hiking, and boat fishing than day users. Both campers and picnickers, however, enjoy shore fishing and picnicking. Planning of camping and picnic areas should consider the provision of facilities to accommodate these interests. Day users, in contrast to campers, tend to engage in activities which do not depend on a variety of support facilities. Day users can also be described as Laramie County families visiting the park to shore fish, picnic and relax.

TABLE 13

ACTIVITIES ENGAGED IN WHILE VISITING CURT GOWDY STATE PARK -- 1981

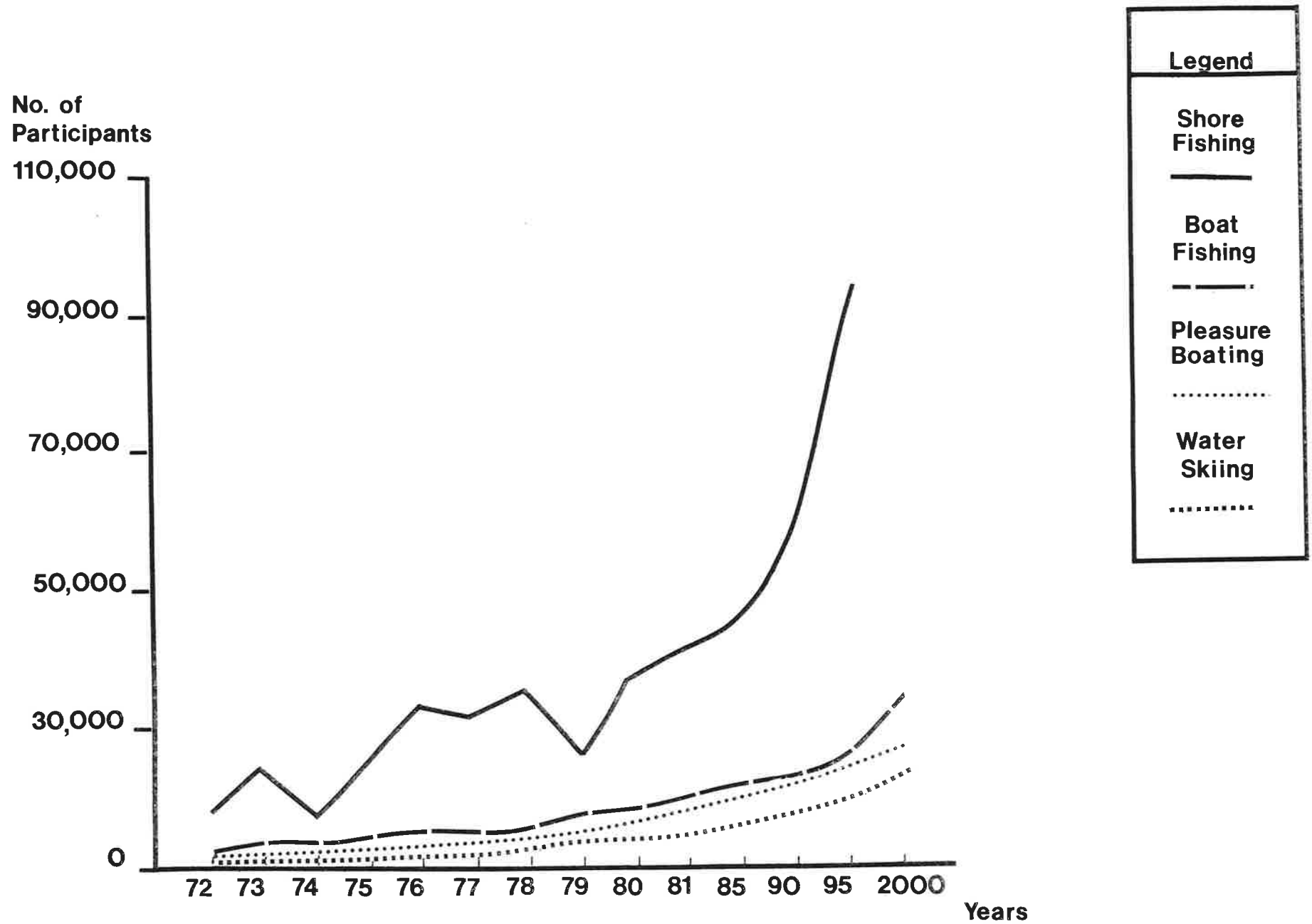
Activity	% All Visitors	% Campers	% Day Users
Shore Fishing	68.0	66.7	67.7
Relaxing/Doing Nothing	50.8	63.4	39.1
Picnicking	45.1	46.6	43.6
Sightseeing	35.7	43.5	28.6
Hiking	16.5	25.2	8.3
Boat Fishing	10.2	14.5	6.0
Nature Study	8.6	11.5	6.0
Swimming	4.1	3.1	5.3
Pleasure Boating	3.8	5.3	2.3
Water Skiing	10.4	4.6	2.3
Driving Off-Road Vehicles	2.3	2.3	2.3
Sailing	1.1	---	2.3

Use projections for individual activities were calculated from data collected by the Wyoming Recreation Commission. Projections for 1985, 1990, 1995 and 2000 were computed using trend line analysis based on the park's visitor use data for 1972 through 1981.

Results from the trend line analysis in Figures 5 and 6 indicate steady and progressive increases in participation in both water-based and land-based activities. Among the land-based activities, the greatest amount of use and the sharpest increase can be expected in picnicking. This anticipated growth can be expected to put an undue strain on existing facilities. Of the water-based activities shore fishing is expected to exhibit the greatest increase in participation.

Figure 6

Recent and Projected Water Based Activities



Perceived Problems

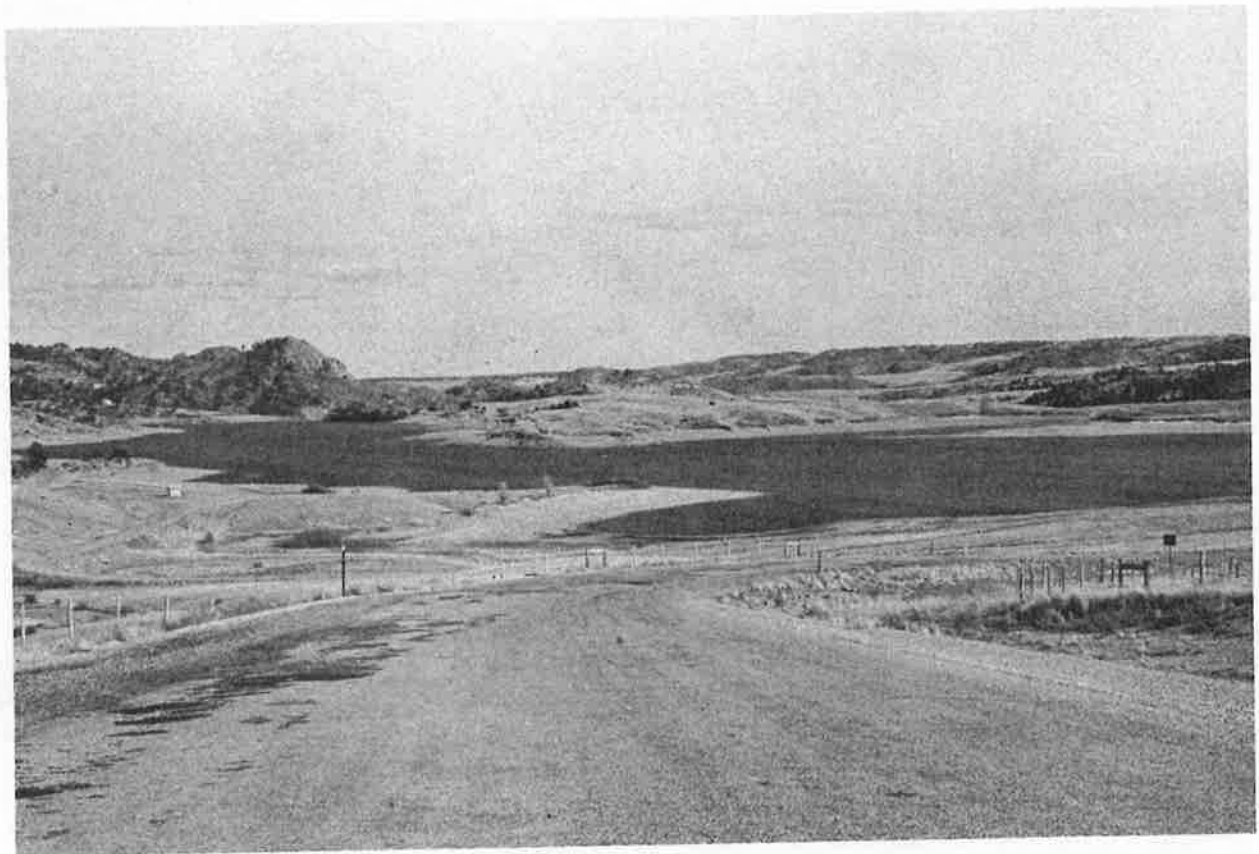
In the 1981 survey, visitors were asked the extent to which they experienced a number of problems during their visit to Curt Gowdy State Park (Table 15). Overall, the problems were not major and did not appear to hamper the experience. The most commonly perceived problem for both campers and day users was litter, although the problem was perceived in different degrees. All problems perceived by visitors were slight. The major problems faced by campers were litter, broken tables and grills, and water pollution, while the major problems for day users also included reckless boating and noisy visitors. These problems and others could become larger in the future as visitation increases in the park. Therefore, these problems should be handled carefully and eliminated, if possible, before they affect more visitors.

TABLE 15

PROBLEMS ENCOUNTERED BY CURT GOWDY STATE PARK VISITORS -- 1981*

Problem	All Visitors	Campers	Day Users
Noisy Pets	1.22	1.15	1.30
Unreasonable Regulations	1.23	1.19	1.26
Conflicting Activities	1.32	1.20	1.45
Traffic Congestion	1.32	1.26	1.39
Unsafe Facilities	1.33	1.23	1.42
Inadequate Rule Enforcement	1.34	1.21	1.47
Excessive Camping Fees	1.35	1.31	1.37
Uncontrolled Pets	1.36	1.27	1.46
Reckless Driving	1.41	1.42	1.39
Vandalism	1.41	1.32	1.49
Rude Visitors	1.43	1.32	1.54
Overcrowding	1.49	1.44	1.53
Noisy Visitors	1.54	1.44	1.62
Broken Picnic Tables & Grills	1.56	1.58	1.52
Water Pollution	1.61	1.56	1.65
Reckless Boating	1.63	1.43	1.82
Litter	2.01	1.80	2.19

*5=An Extreme Amount
 4=Quite A Lot
 3=A Moderate Amount
 2=A Little Bit
 1=Not At All



Projections

PROJECTED FACILITY NEEDS AND IMPROVEMENTS

Facility Needs

Deficiencies in existing park facilities became apparent when considering visitor use data derived during the 1981 season. Long-range use projections are based on the visitor use data, and although specific user preferences and behavior may vary, the demand for all activities is expected to increase. To meet these increased demands, the number of facilities serving these activities must also be increased.

Future Developments and Improvements

Many of the respondents to the 1981 survey have expressed the need for a higher level of park development. Some campers do not necessarily seek a rustic experience and would like to see development of support facilities such as showers and electrical and water hookups. A number of day users desire the development of picnic shelters, lights in toilets, hiking trails and park rangers. Both campers and day users desire the development of a first aid center and flush toilets. These and other development and improvement needs are listed in Table 16.

TABLE 16

FUTURE DEVELOPMENTS AND IMPROVEMENTS
CONSIDERED APPROPRIATE BY CURT GOWDY STATE PARK VISITORS -- 1981

Developments/Improvements	% All Visitors	% Campers	% Day Users
First Aid Centers	25.6	23.8	27.9
Flush Toilets	25.6	23.8	25.6
Showers	22.1	28.6	16.3
Picnic Shelters	20.9	9.5	32.6
Lights in Toilets	19.8	9.5	30.2
Electrical & Water Hook-Ups	18.6	19.0	18.6
Hiking Trails	17.4	14.3	20.9
Park Rangers	15.1	7.1	23.3
Group Picnic Areas	14.0	11.9	16.3
Paved Roadways	14.0	14.3	14.0
Single Unit Picnic Areas	11.6	7.1	16.3
Group Campgrounds	10.5	11.9	9.3
Single Unit Campgrounds	10.5	14.3	7.0
Boat Docks	8.1	4.8	11.6
Developed Recreation Areas	8.1	9.5	7.0
Lights in Campgrounds	8.1	9.5	7.0
Boat Ramps	7.0	4.8	9.3
Park Personnel	7.0	2.4	11.6
Manned Visitor Center	4.7	2.4	7.0
Laundry Facilities	3.5	4.8	2.3

*I would like to make
a nasty comment on the
next Two PAGES.*

Picnic Facilities⁶: The 1980 Wyoming SCORP summary has identified that in 1979 Region One had no need for more picnic sites. The data from Curt Gowdy State Park shows a shortfall of 11 picnic sites in 1981.

- a) $1981 \text{ use}^2 / \text{Average party size}^2 = \text{Number of picnic groups}$
 $28,093 / 3.3 = 8,513$
- b) $\text{Length of season} \times \text{Turnover per day}^7 = \text{Number of picnic groups per site}$
 $125 \times 2.5 = 312.5$
- c) $\text{Number of picnic groups} / \text{Number of picnic groups per site} = \text{Number of sites required}$
 $8,513 / 312.5 = 27$
- d) $\text{Number of projected sites needed} - \text{Existing sites} = \text{Number additional sites needed}$
 $27 - 38 = -11^8$

In 1990, the Wyoming SCORP indicated an estimated shortfall of 585 picnic sites will arise. The park data estimates 8 picnic sites above what is needed in 1990.

- a) $\text{Anticipated 1990 use}^5 / \text{Average party size} = \text{Number of picnic groups}$
 $47,334 / 3.3 = 14,344$
- b) $\text{Length of season}^3 \times \text{Turnover per day} = \text{Number of picnic groups per site}$
 $125 \times 2.5 = 312.5$
- c) $\text{Number of picnic groups} / \text{Number picnic groups per site} = \text{Number of sites required}$
 $14,344 / 312.5 = 46$
- d) $\text{Number projected sites needed} - \text{Existing sites} = \text{Number additional sites needed by 1990}$
 $46 - 38 = 8^9$

⁶Picnic facilities are all the sites not classified as campsites such as those on the east and west shores of both reservoirs.

⁷Because most picnickers stay at a site for a short time, a turnover rate of 2.5 will be used.

⁸The negative number indicates that in 1981, Curt Gowdy State Park had 11 more picnic sites than it needed.

⁹By comparison of the shortfalls of camping sites and the abundance of picnic sites, it is recognized that extra picnic sites can be considered campsites. Therefore, the corrected 1981 need for campsites is:

Present shortfalls of campsites + Present shortfalls of picnic sites =
Corrected Need $152 + (-11) = 141$

The corrected 1990 need for campsites is:

Number additional campsite needed by 1990 + Number additional picnic sites needed by 1990 = Corrected Need
 $262 + 8 = 270$

The addition of another boat ramp would cause an increase in the number of boats on Granite Springs Reservoir. The carrying capacity of this reservoir is limited and could easily be exceeded with increasing levels of use. The minimum area needed per boat is two acres, with water skiing requiring additional space.

Non-Power Boating Facilities

Curt Gowdy State Park is unique in that it provides for a variety of boating experiences. While power boating is popular at Granite Springs Reservoir, Crystal Reservoir is generally inaccessible to large power boats due to the lack of boat ramps, and is effectively reserved for small power boats and non-power boats. Crystal Reservoir is large enough to accommodate the projected increase in non-power boating at least through the year 2000.

Water Supply

The existing facilities for supplying water at the park consist of two water pumps at Granite Springs Reservoir. No water pumps are currently provided at Crystal Reservoir. A common standard for water supply is that the unit to be supplied with water should be located not more than 300 feet from the source of water. The water supply falls far short of this standard, particularly at Crystal Lake Reservoir.

Restrooms

There currently exist 17 restrooms at Curt Gowdy State Park. An accepted standard for restrooms is for one male/female restroom to service 150 people per day. The 1981 visitor estimate showed that during peak day use periods, 1,867 persons were on-site, indicating only twelve restrooms are required. Thus, the present supply of restrooms greatly exceeds the need. The 1990 visitor estimate is 97,209 people and only four additional restrooms will be required to service those people. Therefore, the restrooms provided at the park are in excess of present and projected needs.

Miscellaneous Facility Needs

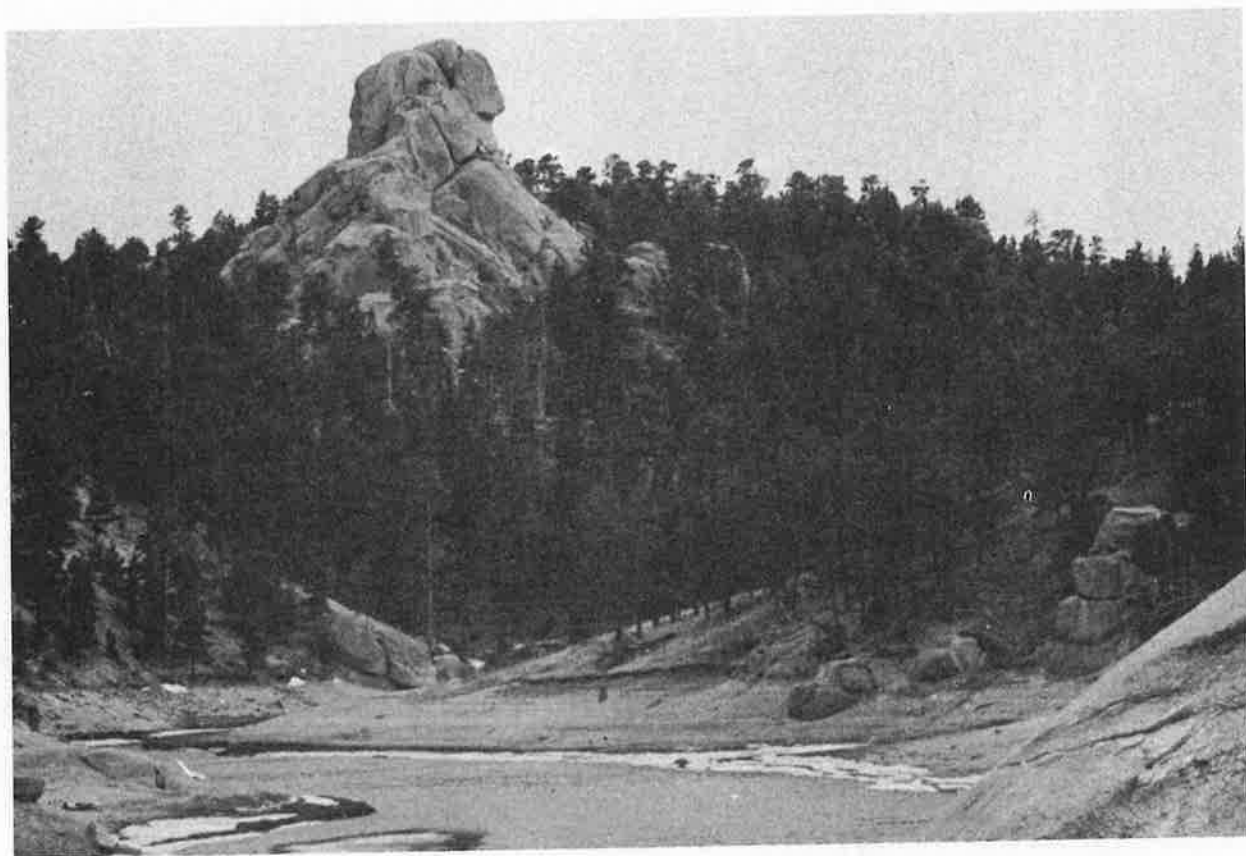
Curt Gowdy State Park provides many sites for the handicapped including a specially designed fishing pier. Handicapped facilities appear to be in adequate supply, given the low number of handicapped visitors utilizing the park; however, better signing is necessary. Signs should be provided which direct visitors to these sites as well as to other facilities such as water supplies, boat ramps and support facilities.

TABLE 17

PRESENT AND FUTURE FACILITY NEEDS

FACILITY	1981 NEEDS	1990 NEEDS
Campsites	152	262
Picnic Facilities	0	8
Power Boat Ramps	0	1
Non-Power Boat Facilities	0	0
Water Supply	**	**
Restrooms	0	0

**The estimated number of needed facilities is unknown.



Development Program

DEVELOPMENT PROGRAM

I. Maintain Natural Resources

Based on existing use patterns and the limitations of the natural resources, a moderate level of development is considered appropriate. The challenge is to maintain both a sense of security and a pristine atmosphere while accommodating the increasing recreation demand. Certain areas of the park will be better suited for more intense development while other areas should be kept in a natural state.

A. Goal: Development should be consistent with the character of the area.

Objectives:

1. Minimize disruption to existing topography and landform.
2. Minimize disruption to the park's existing vegetation.
3. Utilize native plant materials for landscaping in the park.
4. Utilize native materials when building structures whenever feasible.
5. Design structures which are compatible with the existing landscape.
6. Maintain and improve existing wildlife habitat within the park.

B. Goal: Development should maintain or improve visual quality at Curt Gowdy State Park.

Objectives:

1. Plan development so that scenic vistas and visual corridors are not disrupted.
2. Utilize scenic views in designing park facilities.
3. Improve areas in the park that are visually unattractive.

II. Clientele

Existing data indicate that families, moderate size groups, residents and day visitors are the primary users of Curt Gowdy State Park. In the future, the park should continue to provide recreation opportunities for non-residents and overnight visitors.

A. Goal: Opportunities for day and overnight use should be provided for families and other groups.

2. Organize picnicking into major developed areas.
3. Locate restrooms in camping and picnic areas.
4. Locate potable water sources in conjunction with restrooms.
5. Locate playgrounds in conjunction with picnic and camping areas.

B. Goal: Adequate opportunities for camping and picnicking are to be provided at both Granite and Crystal Reservoirs.

Objectives:

1. Locate camping facilities in accessible areas which provide visitors with a feeling for the natural setting.
2. Provide an appropriate number of campsites in the park to accommodate visitor demands while remaining within the environmental constraints of the area.
3. Design camping areas to accommodate tents, campers and trailers.
4. Design campgrounds into loop systems such that closures can be made for maintenance and adequate separation can be achieved between areas.
5. Provide a water source within 300' of each campsite.
6. Place trash containers between every campsite.
7. Provide a potable water source within 300' of major picnic areas.
8. Provide one trash container for every three picnic sites.
9. Provide one ground level grill and one concrete picnic table for each picnic or campsite.

C. Goal: Efficient circulation throughout the park should be promoted.

1. Control vehicular traffic to designated roads and revegetate unneeded roads through seedbed preparation and seeding.
2. Balance the need for direct access with safety and aesthetic considerations in the design on roads.
3. Design circulation routes to accommodate over-size recreational vehicles and trailers.

Objectives:

1. Provide at least one playground area in close proximity to each major picnic area.
 2. Provide adequate play opportunities for children of all ages.
- H. Goal: Boating and swimming activity should be controlled in both reservoirs.

Objectives:

1. Limit boat access to the boat ramp.
 2. Provide adequate signs to inform the public of a "no swimming" policy.
- I. Goal: Encouragement of off shore, boat and ice fishing should be continued.

Objectives:

1. Consider the provision of a fish cleaning station at each reservoir.
 2. Utilize picnic shelters as warming huts during the winter to encourage ice fishing in Granite Reservoir.
- J. Goal: Eliminate all activities incompatible with Wyoming Recreation Commission policy, eco-system management, or visitor safety.

Objectives:

1. Prohibit firearms and hunting within park boundaries.
 2. Prohibit all motorized off-road activity within park boundaries.
 3. Prohibit camping in non-designated areas.
- K. Goal: The existing archery range should be maintained unless safety hazards develop.

Objectives:

1. Provide signing for safety and informational reasons.
2. Maintain the archery range unless the proposed usage of the surrounding area is not compatible with that activity.

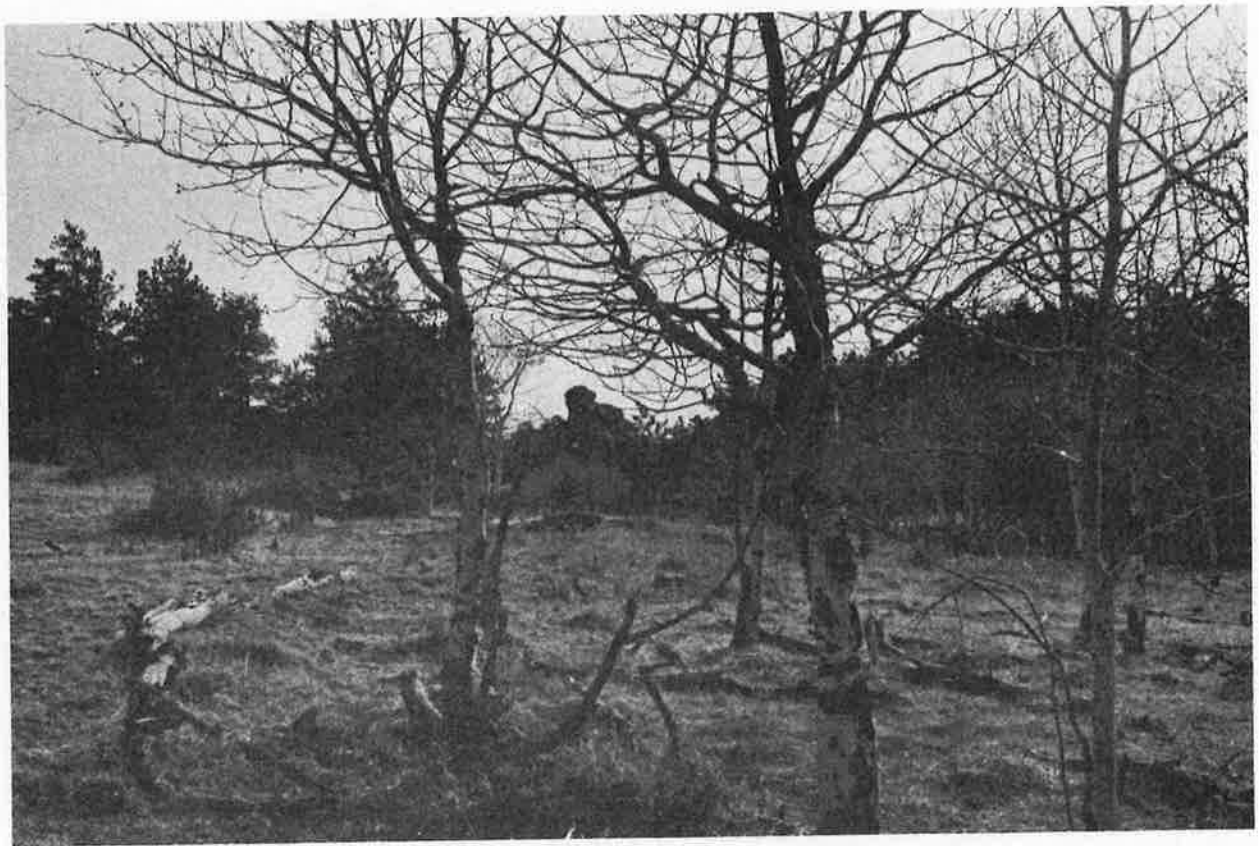
- D. Goal: The existing method of collecting campground fees at the park should be improved.

Objective:

1. Install fee drop-off box at each campground to reduce time spent collecting fees.

- E. Goal: Expand and improve park headquarters to serve as a visitor center.

1. Park headquarters should be further developed to enhance the experience of the growing number of visitors to the park.



Development Recommendations

DEVELOPMENT RECOMMENDATIONS

The development objectives provide direction and guidance for the formation of the Curt Gowdy Comprehensive Master Plan. The development recommendations are intended to serve the existing and future needs of the people who use the park while maintaining the qualities which make Curt Gowdy State Park an attractive recreational resource. This plan is organized into critical issues and area plans. The organizational format is as follows:

I. CRITICAL ISSUES FACING FUTURE DEVELOPMENT

- A. Indiscriminate use of park resources by motorized vehicles and individuals camping and picnicking in inappropriate locations.
- B. Inadequate staffing and funding will prevent proper operation and maintenance of the park.
- C. Acquiring a parcel of land in Section 22.
- D. Lack of signage, especially those designating handicap facilities.

II. AREA PLANS

- A. Park Headquarters/Hynds Lodge and Section 17.
- B. Granite Springs Reservoir.
- C. Crystal Lake Reservoir.

Conceptual site plans, at a scale of 1 inch equals 300 feet are presented for each of these three Area Plans.

I. CRITICAL ISSUES FACING FUTURE DEVELOPMENT

These problems and solutions are important in the implementation of the plan and should be considered in all aspects of the development process.

- A. Indiscriminate use of park resources by motorized vehicles and individuals camping and picnicking in inappropriate locations.

This indiscriminate use from free-form activities (activities that occur in an area where facilities for the activity are not provided) has caused undue erosion and destruction of fragile vegetation. Since the park cannot tolerate this type of use, free-form users should be encouraged to use the Forest Service lands that have areas designated for less structured use.

ACKNOWLEDGEMENTS

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Harlan Blake

Susan Borjeson

Peter Brewster

Theresa Eichhorn

Michael Fraysier

Mark Johnson

Jean Mansfield

Gary Max

John Neilson

Calin O'Brien

Lynn Schmitt

J. Sheehan

John Tammela

Anita Voogd

Michael Wade

Karen Watkins

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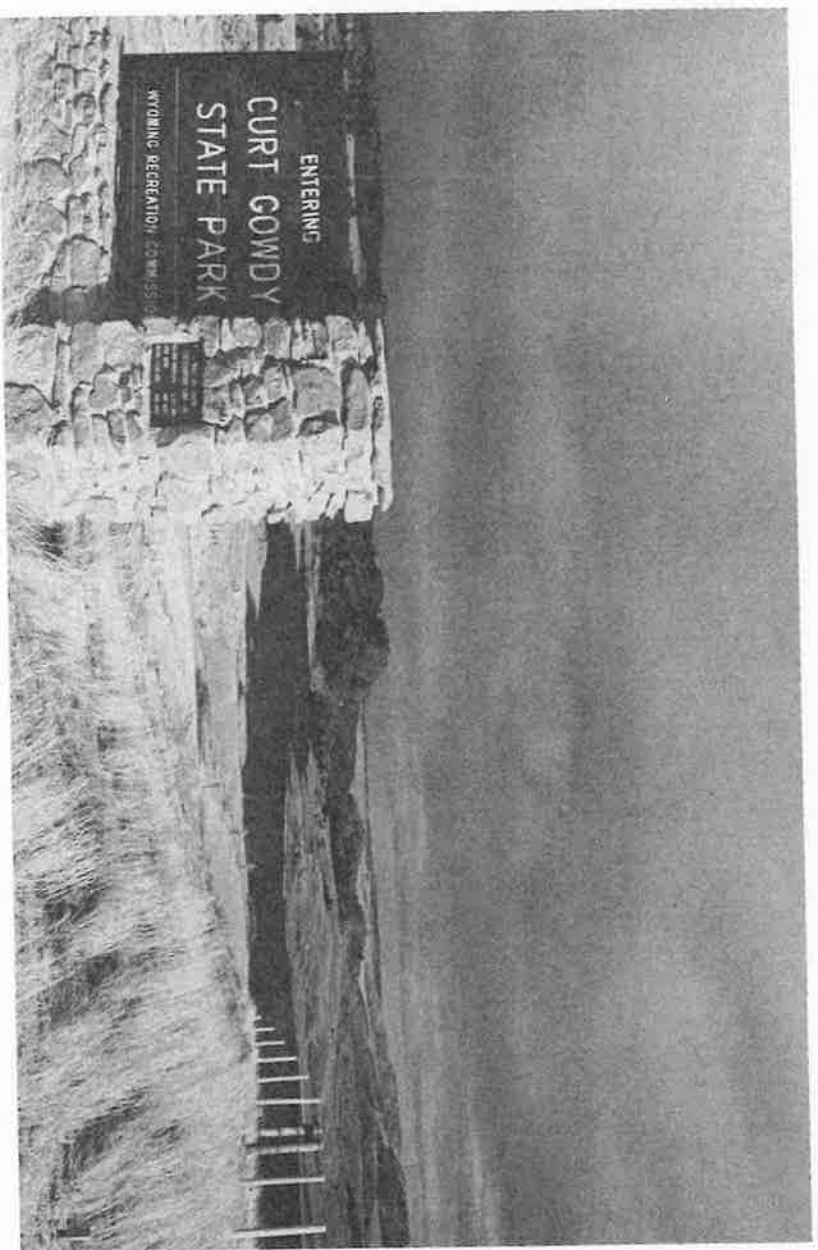
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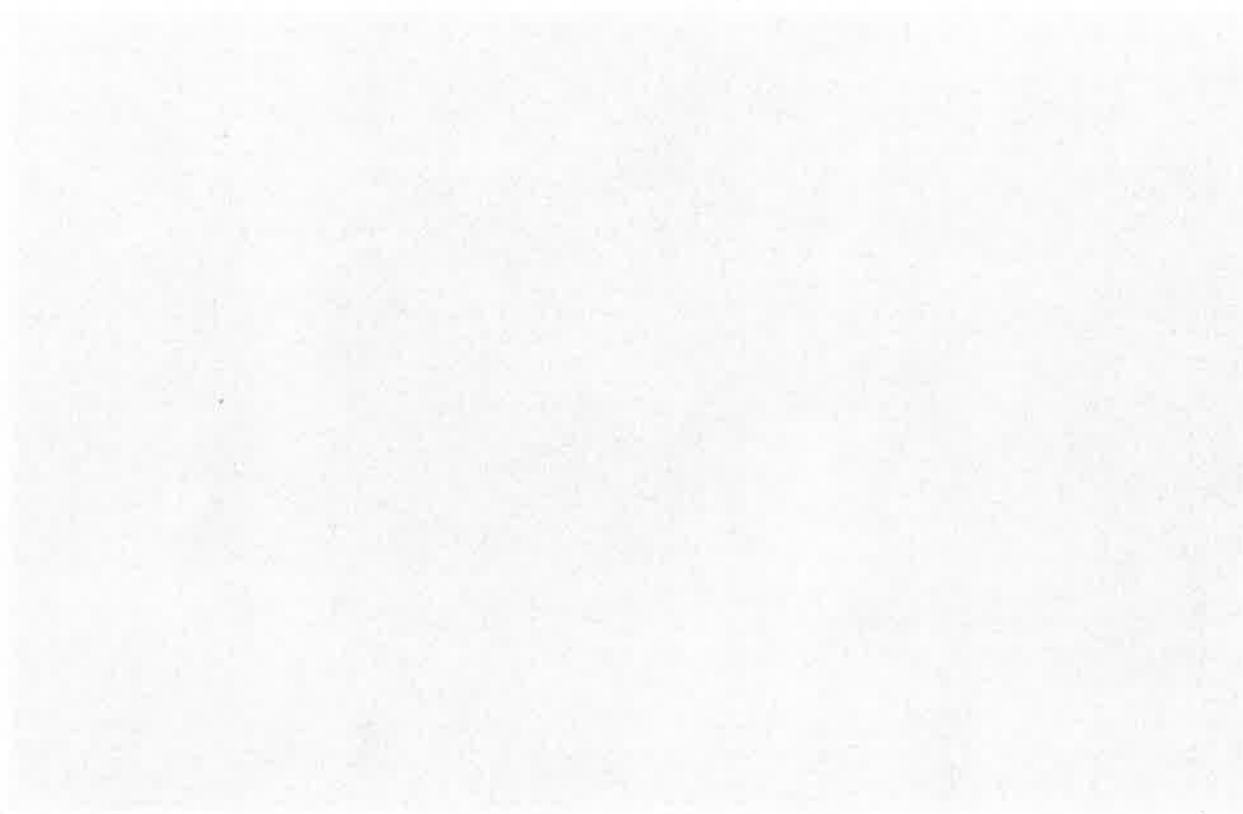
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Introduction



INTRODUCTION

Curt Gowdy State Park is located in southeastern Wyoming in the foothills of the Laramie Mountains. The park is easily accessible from Cheyenne, 26 miles to the east, and Laramie, 22 miles to the west. Map 1 indicates the park's location and its proximity to other communities and recreation areas in Wyoming and surrounding states.

The park includes Granite Springs Reservoir, Crystal Lake Reservoir, Hynds Lodge and the newly acquired Section 17. The total land area is 1645 acres, and the total water area is 285 acres. Because of a water shortage in the early 1900's, the City of Cheyenne built both Crystal and Granite dams to supply the city with drinking water. Curt Gowdy State Park was established in 1971 through a lease agreement with the City of Cheyenne and the Boy Scouts of America. Recreation facilities within the park boundaries are managed by the Wyoming Recreation Commission under an agreement with the City of Cheyenne. More information on the park operation and the factors which influence water levels are presented in Section V.

Other than Curt Gowdy State Park, the only water based recreation area near Cheyenne is North Crow Reservoir. Additional recreation resources in the region are the Medicine Bow National Forest, Glendo and Guernsey State Parks and Rocky Mountain National Park.

Visitation to Curt Gowdy State Park has increased steadily in response to the rapid population growth of the state. Visitation in 1981 totaled 67,012 and is projected to increase to 97,209 by 1990. More information on park visitation is presented in Section VI.

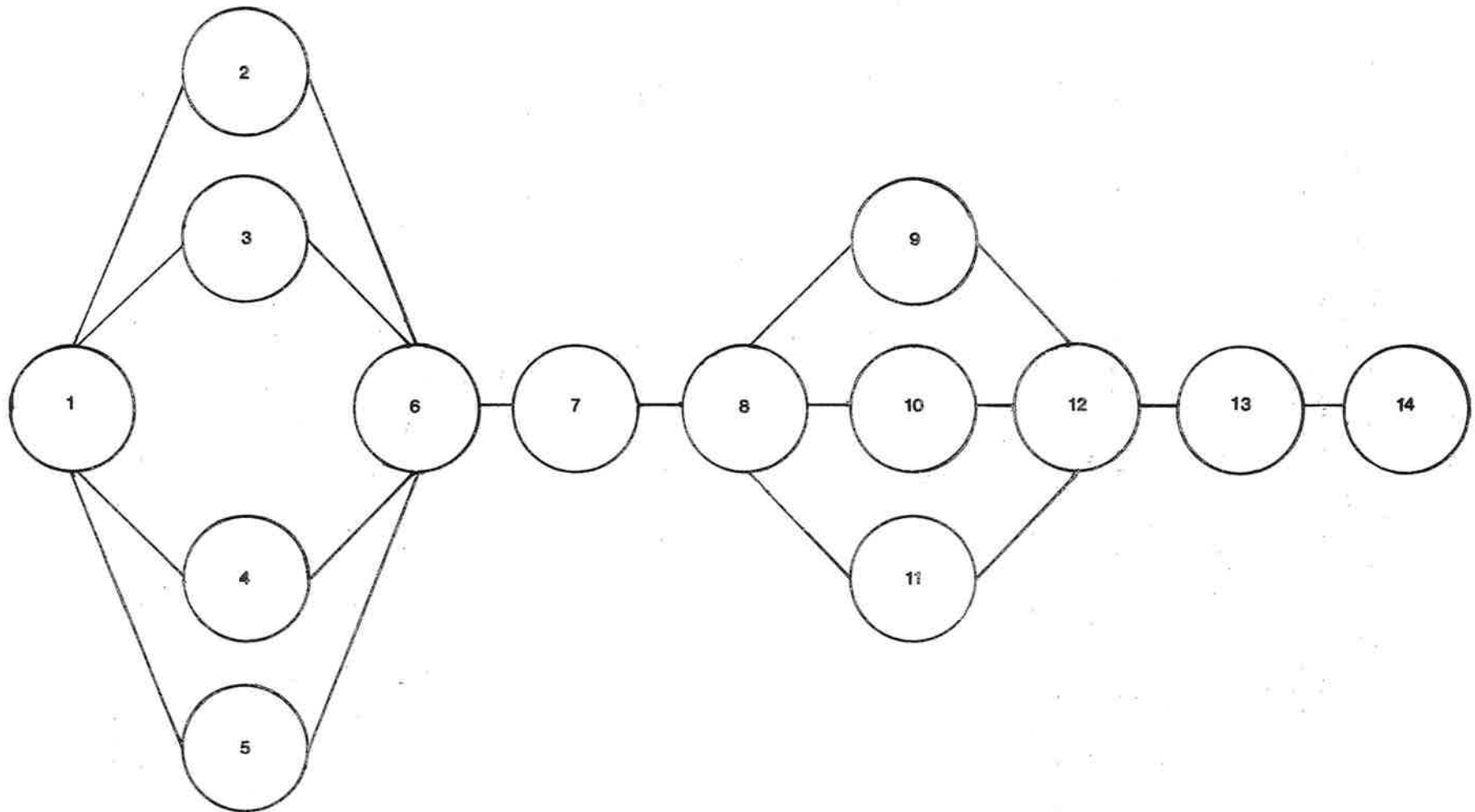
The development of recreation facilities within the park has not kept pace with growth in visitation. A shortage of facilities already exists, and will become worse if new facilities are not developed to serve the future demands of additional users.

The planning process (Figure 1) provided for the organized preparation of the Curt Gowdy State Park plan. This plan was developed to provide for the needs of existing and future visitors and to maintain the qualities for which Curt Gowdy State Park was established. It provides for the development of additional recreational facilities and the implementation of regulations designed to protect the park's natural resources and recreational values. Equally important is the overall development plan for the newly acquired Section 17. A detailed description of the plan is presented in Section VIII.

Comments received during the public meeting held in Cheyenne also provided valuable guidance to the development of the plan. These comments are summarized in Appendix A of the plan.

The plan was developed due to the recent acquisition of Section 17. The acquisition of this property may change the visitor use patterns. Therefore, updating of the visitor use data and a reevaluation of the development objectives and plan may be necessary every few years.

Figure 1
Planning Process



1 Start

2 Regional Context

3 Resource Mgt. Inventory

4 Park Visitor Inventory

5 Physical Resource Inventory

6 Program

7 Development Alternatives

8 Public Hearing

9 Graphics

10 Conceptual Site Plans

11 Development Plan

12 Cost Estimates

13 Development Phasing

14 Completed Master Plan



Regional Inventory

SUMMARY OF REGIONAL INVENTORY

Knowledge of the region's demography, travel patterns and recreational opportunities will assist in the planning of the various developments to be proposed at Curt Gowdy State Park. The population, traffic patterns and type of recreational opportunities located in the region are extremely diverse and have a strong effect on Curt Gowdy park visitation and use patterns.

The majority of visitors go to the park in order to shore fish, relax or picnic. There are a broad variety of recreational opportunities available at the many local, state and national parks and forests located throughout the region.

Existing travel routes to the park are sufficient to serve the park's future needs during summer use periods. However, if developments are proposed which will increase visitor use during the winter, access to the park will become a problem that will need to be resolved.

The rapid population growth projected for the area will also affect visitation to the park. The increased use of the park will pose serious problems for the development and operation of the park.

Regional Recreation Opportunities

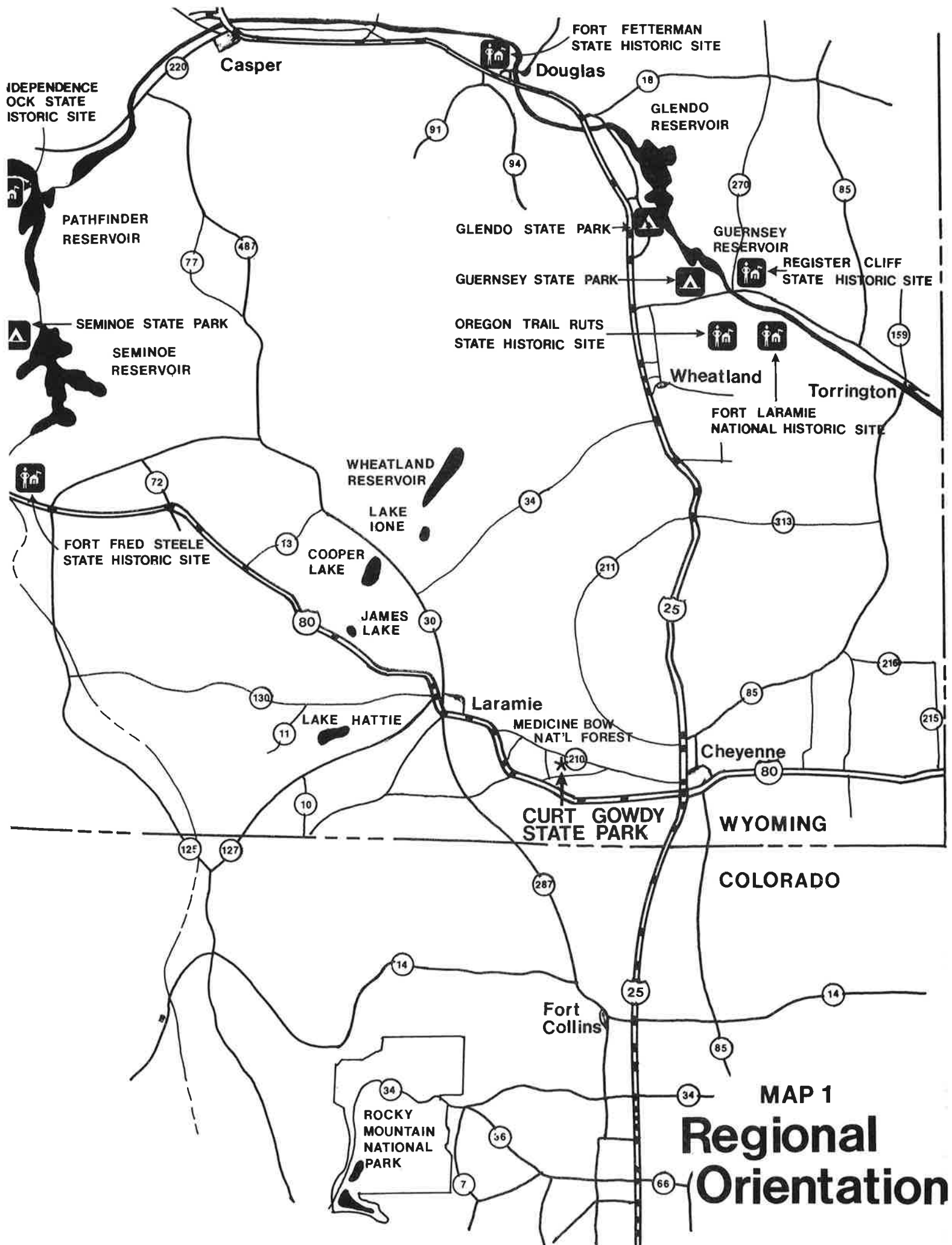
The region surrounding Curt Gowdy State Park contains a wide variety of both urban and rural recreational opportunities. A broad range of urban oriented recreational opportunities are available in Laramie and Cheyenne. Both cities have extensive municipal park systems, with playgrounds, tennis courts, softball fields and other amenities. Camping, picnicking and fishing are available in the nearby Medicine Bow National Forest as well as at Glendo and Guernsey State Parks. Outdoor recreation opportunities are also available at Rocky Mountain National Park which is easily accessible to the majority of Curt Gowdy State Park users.

The Pole Mountain District of the Medicine Bow National Forest is the closest recreation area which competes with the park for visitors. The Pole Mountain District provides three picnic grounds and four campgrounds all of which are within easy access of the park. There are also excellent hiking, climbing and fishing opportunities available. During the winter months, the Forest Service provides a variety of recreational opportunities, the most popular of which is ski touring.

The Snowy Range portion of the Medicine Bow National Forest offers recreational opportunities similar to the Pole Mountain District, but it also contains the Savage Run Wilderness Area.

Glendo and Guernsey State Parks are both located within easy access to the majority of the park users. The two parks are water-based and provide excellent opportunities for lake fishing, waterskiing, powerboating and sailing as well as picnicking and camping. Ice fishing is also popular at Glendo during the winter.

Rocky Mountain National Park offers a variety of recreation opportunities. Primitive and developed campgrounds are available inside the park along with a series of trails and other facilities while a resort community is located within easy access to the park. The park is popular on a national level and suffers from frequent overcrowding.



Access

The only direct access to Curt Gowdy State Park is the Happy Jack Road (State Highway 210). This two-lane paved road extends from Cheyenne to the entrance of the Medicine Bow National Forest. The road is made of gravel as it winds through the forest until it joins Interstate 25 at the Happy Jack exit. Alternative routes are gravel roads through Medicine Bow National Forest which are reached from Interstate 25 at the Buford and Vedauwoo exits.

The only road which is cleared during winter months is the Happy Jack Road from Cheyenne to the entrance of the national forest. This prevents many people from visiting the park during the winter season.

Existing routes to the park are not adequately marked. First time visitors to the park are confronted with difficulties in finding the site unless they have been provided with direction. Much of the existing signing does not provide adequate direction to the park nor describe recreation opportunities available at the park.

Regional Demographics

The 1981 visitor use figures for Curt Gowdy State Park indicate the majority of Wyoming residents visiting the park are from Laramie and Albany counties. Of the resident users, 90.8% are from Laramie County and 4.8% are from Albany County.

Wyoming residents account for 81.3% of the total visitation at Curt Gowdy State Park. The only other state with a noticeable use of the park is Colorado, which contributes 5.5% of the total visitation to the park.

TABLE 1

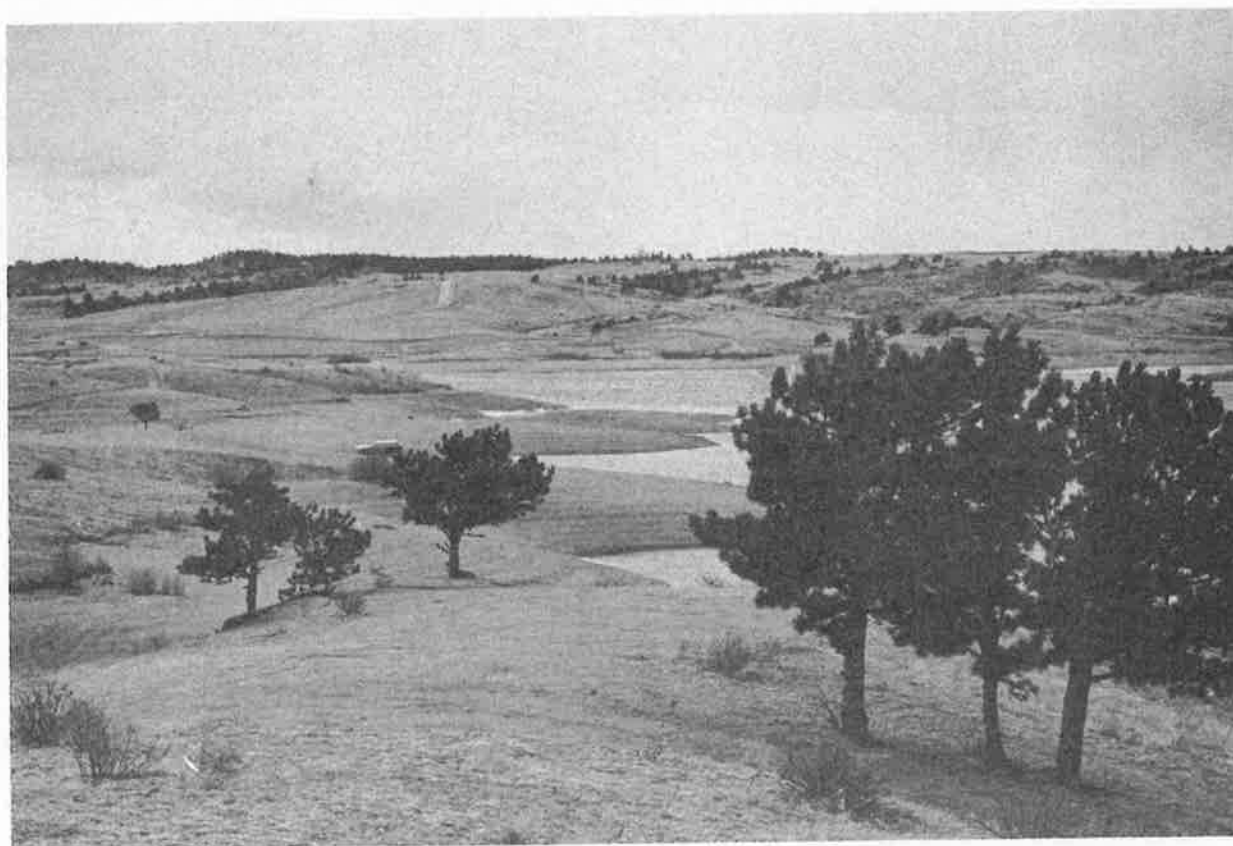
Population Trends and Projections

	1970 Pop. ¹	% Increase ²	1980 Pop. ¹	% Increase ²	1990 Pop.
Laramie City	23,143	5.5	24,410	N/A	N/A
Albany County	26,427	10.0	29,062	17.4	34,816
Cheyenne City	41,254	14.6	47,283	N/A	N/A
Laramie County	56,366	21.8	68,649	27.1	87,241
Wyoming	332,416	41.3	469,557	34.6	631,881
Colorado	2,207,259	30.9	2,888,834	N/A	N/A

¹Figures obtained from Department of Commerce Census Bureau.

²Figures obtained from State of Wyoming, DAFC, Division of Research and Statistics.

Areas contributing the majority of use at Curt Gowdy State Park are also expected to receive large population increases by 1990. The populations of both Laramie and Albany counties are projected to increase at a rate greater than the national average of slightly more than the 9% projected by the U.S. Bureau of Census. Although projections were unavailable for Colorado, it appears their growth will also exceed the national average. The increased growth in these areas should contribute to increased visitation at Curt Gowdy State Park.



Physical Resource Analysis

SUMMARY OF PHYSICAL RESOURCE

The physical resources of Curt Gowdy State Park present some opportunities for and limitations to development. Soils, although fertile, are shallow and unstable in many areas. Consequently, most development activities will require stabilization measures to insure erosion does not occur. Much of the park is characterized by steep slopes. While adding to the visual character of the area, slopes in excess of 10% pose serious development limitations and are probably best suited to non facility dependent forms of recreational use. Vegetation distribution and prevailing wind patterns are also important considerations when planning for future development. Facilities should be located so they are protected from prevailing northwesterly winds, making good use of existing wind-breaks or by using additional plantings where possible. Development within the park must not detract from the overall visual setting. Scenic corridors and vistas should also be protected.

Perhaps the most important physical resource consideration at Curt Gowdy State Park is the maintenance of high water quality in Granite and Crystal Reservoirs. These reservoirs constitute the public water supply for the City of Cheyenne. The entire park, including Section 17, lies within the immediate watershed of these two reservoirs and any future development activity within the park has a potential impact on the water quality of the reservoirs.

Climate

The climate of Curt Gowdy State Park can be described as semi-arid with annual precipitation ranging from 13 to 16 inches. Summer precipitation is in the form of showers with an occasional cloudburst. Winter snowfall averages 54 inches annually. Temperatures vary widely from -27 degrees Fahrenheit in winter to 98 degrees Fahrenheit in summer. December, January and February are the coldest months with an average daily high/low of 40/17 degrees Fahrenheit. The warmest months are June, July and August with an average daily high/low of 80/52 degrees Fahrenheit. The length of the frost-free season averages 130 days a year. Prevailing winds are from the northwest and are relatively strong, averaging 15 miles per hour in the winter months and 12 miles per hour in the summer months.

The climatic factor which has the greatest influence on recreation at Curt Gowdy State Park is wind. The reservoir affords little protection from the strong prevailing winds, making it difficult to launch and load boats. This is particularly true at Granite Reservoir where boating activity is high. In addition, future development at the park must consider local wind patterns and avoid natural wind tunnel areas. Rock outcropping plus trees and other shelter break plantings can effectively be used to reduce wind velocity and should be utilized where appropriate.

Solar orientation at Curt Gowdy State Park is another climatic factor which has implications for future development. There are an average of 233 days of sunshine annually. The sun reaches its highest point in the sky on June 22 (summer solstice) at a 73° angle while falling to an angle of 26° on December 22 (winter solstice). The amount of shade at the park will be less during the summer months due to the high angle of the sun. This fact, coupled with the potential for high daily temperatures during the summer indicates additional shade may be desirable.

Since data were not available specifically for Curt Gowdy State Park, data on Cheyenne climatic conditions were used. Precipitation and temperature data were furnished by the National Weather Service. Compensation for temperature differences were accomplished by subtracting 3 degrees from Cheyenne averages because Curt Gowdy State Park is approximately one thousand feet higher in elevation. Wind patterns were supplied by the park superintendent, and annual snow depths were obtained from the University of Wyoming Atmospheric Sciences Department.

Soils

Soil types within Curt Gowdy State Park are generally characterized by shallow depth to bedrock and range from sandy to clayey in structure. Shallow to very shallow soils provide adequate bases for many facilities such as picnic areas and playgrounds, but present an obvious limitation for the development of buildings and structures requiring foundations. A soil survey was conducted (see Table 2) which showed the majority of soils in the park contain a high concentration of sand. The most productive soil type in the park is silty loam, which is found along the southern shore of Granite Reservoir. The high amounts of organic matter in the soil south of Granite could support any native vegetation types. The sandy and silty loam soils found near the shorelines are capable of supporting revegetation efforts. Due to the shallow depth and sandy nature of the soils, any activity on the park, particularly the use of off road vehicles, will adversely affect groundcover.

NOTE: A more detailed soil analysis may be necessary for areas requiring more intensive development.

TABLE 2

Soil Analysis

Area	Soil Texture	Organic Matter % (A)	Available Phosphorus	pH (B)	Soluble Salts (C)	Special Analysis	
						Lime	Nitrate-Nitrogen
Section 17	Sandy	3.7	13.6	6.9	0.4	None	9.2
North Shore Granite Reservoir	Sandy	1.2	4.2	7.0	0.3	None	2.1
South Shore Granite Reservoir	Silty Loam	5.6	8.0	6.5	0.6	None	26.2
Crystal Reservoir	Sandy	1.6	5.9	6.9	0.2	None	1.8

NOTES:

(A) - 2.0 is normal (native) range.

(B) - Good pH range (6.5-7.0).

(C) - Good drainage overall - no salt problems.

Geology

Curt Gowdy State Park is set in the foothills of the southeastern edge of the Laramie Mountains. Along this section of land the Great Plains first meet the Rocky Mountains. The Laramie Mountains, a continuation of the Colorado Front Range, have been gradually reduced through time and erosion to low relief. Older Pre-Cambrian crystalline rock essentially make up the core of these mountains. Rock outcrops of Sherman Granite represent the youngest major Pre-Cambrian unit in the Laramie Range, and represent an important visual resource. Resting along the eastern front of the Laramie Mountains is a narrow remnant of the flatlying sedimentary rocks of the later Tertiary Period. These tertiary rocks (essentially sandstones, conglomerates and siltstone) rest on top of rocks of the Mesozoic and Paleozoic Ages (sands and gravels). Both Granite Reservoir and Crystal Reservoir are sedimentary rock basins caused by erosion.

Topography

Curt Gowdy State Park occupies roughly 1930 acres and segments of seven sections. The land varies in elevation from 7700 feet in the NW corner of Section 17 to 6969 feet at the spillway for Crystal Reservoir, or the NE corner of Section 26. The land's character includes low-lying meadows, gently rolling hills and precipitous slopes dotted with steep granite massifs.

Generally, slopes greater than 10% present some limitation to development. Such slopes are often characterized by unstable soils and are more susceptible to erosion than more gently sloping areas. Approximately 60% of the park land is of 10% slope or less and is suitable for some development activity.

Vegetation

Vegetation types at Curt Gowdy State Park include grasses, forbs, shrubs and trees. Within each of these vegetation types exists a wide diversity of plant species. Table 3 includes a listing of some of the more common species found in the park.

Generally, the park is characterized by Ponderosa Pine trees and short-growing grasses. Closer to the reservoirs, there is an increase in shrub and forb species. Section 17 is the most heavily forested area within the park and has excellent recreation potential.

The Park Superintendent is working jointly with the City of Cheyenne in controlling the noxious weed Canada Thistle. The herbicide being used is not selective, therefore other vegetation that comes into contact with it may be destroyed.

Vegetation within the park helps to determine the kind of recreational opportunities available. For example, wooded areas may be more suitable for camping and picnicking, while softball, kite flying and other more active recreational pursuits are more appropriate in open areas. Vegetation also determines the number, species and migration habits of wildlife at the park.

TABLE 3

Plant List

Curt Gowdy State Park

<u>Types</u>	<u>Species-common name</u>	<u>Types</u>	<u>Species-common name</u>
<u>Grasses</u>	Basin Wildrye	<u>Forbs</u>	Cocklebur
	Big Bluestem		Goldenrod
	Bluebunch Wheatgrass		Common Ragweed
	Blue Grama		Common Yarrow
	Bottlebrush Squirreltail		Gun Weed
	Canby Bluegrass		Milkvetch Family
	Cheatgrass		1. Field Milkvetch
	Crested Wheatgrass		2. Short Milkvetch
	Green Bristlegrass		3. Standing Milkvetch
	Green Needlegrass		Plains Larkspur
	Nuttall Alkaligrass		Prickly-Pear
	Mountain Brome		Short Buttercup
	Slender Wheatgrass		Sulfur Flower
	Western Wheatgrass		Tansey Mustard
			Thistle Family
			1. Canada Thistle
			2. Flodman Thistle
			3. Russian Thistle
			White Sweetcover
			Yellow Aster
			Yellow Sweetcover
<u>Shrubs</u>	Antelope Bitterbrush	<u>Trees</u>	Cottonwood
	Black Sagebrush		Juniper
	Bluebur Stickseed		Ponderosa Pine
	Golden Current		Rocky Mountain Maple
	Harefoot Loco		Willow
	Rubber Rabbitbrush		
	Saskatoon Serviceberry		
	Sagewort Family		
	1. Common Sagewort		
	2. Fringed Sagewort		
	3. Louisiana Sagewort		
	4. Tarragon Sagewort		

Fish and Wildlife

Both Granite Reservoir and Crystal Reservoir are stocked with fish three times a year. The Wyoming Game and Fish Department stocks both reservoirs with ten thousand rainbow trout (8") in April, again in May, and finally in June. The sixty thousand fish added to these two reservoirs makes these the two most heavily stocked bodies of water within the State of Wyoming. Several hundred broodcalls (16" to 20") are also put into these reservoirs over the same period. Some perch exist in Granite Reservoir, but it is not a stocked species.

Typical wildlife species to be found in the region of Curt Gowdy State Park are identified in Table 4. Although recent national trends have indicated a strong and consistent growth in non-consumptive recreational use of wildlife (photography, bird-watching, etc.), consumptive use of wildlife (fishing, hunting) continues to be the dominant recreational use of wildlife in and around Curt Gowdy State Park. The hunting of deer, elk, antelope, and birds has been and is expected to remain a major recreational activity on both private and federal lands surrounding the State Park.

TABLE 4

Wildlife Species*

Curt Gowdy State Park

Type	Species	Type	Species
Mammals	Shrew	Birds	Pintail Duck
	Jack Rabbit		Mallard Duck
	Squirrel		Blue & Green Teal
	Raccoon		Hawk
	Porcupine		Golden & Bald Eagle
	Badger		Turkey Vulture
	Spotted Skunk		Falcon
	Beaver		Rock & Mourning Dove
	Mouse		Night Hawk
	Chipmunk		Kingbird
	Fox		Woodpecker
	Mule Deer		Chickadee
	White Tail Deer		Mountain Bluebird
	Pronghorn Antelope		Blackbird
			Tanager
			Jay
			Wren
			Crow
			Robin
			Junco
			Towhee
			Finch
			Thrasher
			Sparrow
			Swallow
			Magpie
			Catbird
			Meadowlark
			Warbler

*Wildlife information was obtained from the Wyoming Game and Fish Department. The wildlife information is not specific to Curt Gowdy State Park and pertains to a larger area surrounding the park.

Water Quantity

The natural water drainage into Granite Springs and Crystal Lake Reservoirs amounts to 3,700 acre feet per year. An additional 7,400 acre feet per year is transported from Stage I and about 3,000 acre feet pumped to Cheyenne by city water wells. Middle Crow Creek feeds into Granite Springs Reservoir and the inflow into Crystal Lake is from the South Fork of Middle Crow Creek and from Granite Springs Reservoir.

The maximum surface area of Granite Springs Reservoir is 188 acres with a water holding capacity of 5,321 acre feet (approximately 90'). The minimum desired surface area is 50 acres with a water holding capacity of 510 acre feet (approximately 45'). For Crystal Lake Reservoir, the maximum surface is 122 acres with a water holding capacity of 3,620 acre feet (approximately 66'). The minimum surface area is 40 acres with a water holding capacity of 530 acre feet (approximately 45'). Water levels may be lowered below minimum levels if water demand dictates.

Yearly water level fluctuation data have been obtained for both Granite Springs and Crystal Lake Reservoirs. The average yearly fluctuation (1961 to 1976) for Granite Springs was 19 feet per year and 13 feet per year for Crystal Lake. These fluctuations are due to the variations in water supply and the City of Cheyenne's water demand.

Plans to inspect and possibly rebuild Crystal Lake Reservoir's dam have been discussed. A new dam may increase the water holding capacity as well as insure the safety of the general public.

At Gurt Gowdy State Park there are six water wells. Four of these wells are presently being used, while the other two are non-operational. Specific hydrologic data for each well is outlined in Appendix D.

Water Quality

The Wyoming Department of Environmental Quality (DEQ) is responsible for the water quality in Granite Springs and Crystal Lake Reservoirs. The DEQ water quality standard for these reservoirs is 200/100 ml. for fecal coliform (DEQ, 1982). The table below indicates water quality data collected from both reservoirs.

TABLE 5
Water Quality Data

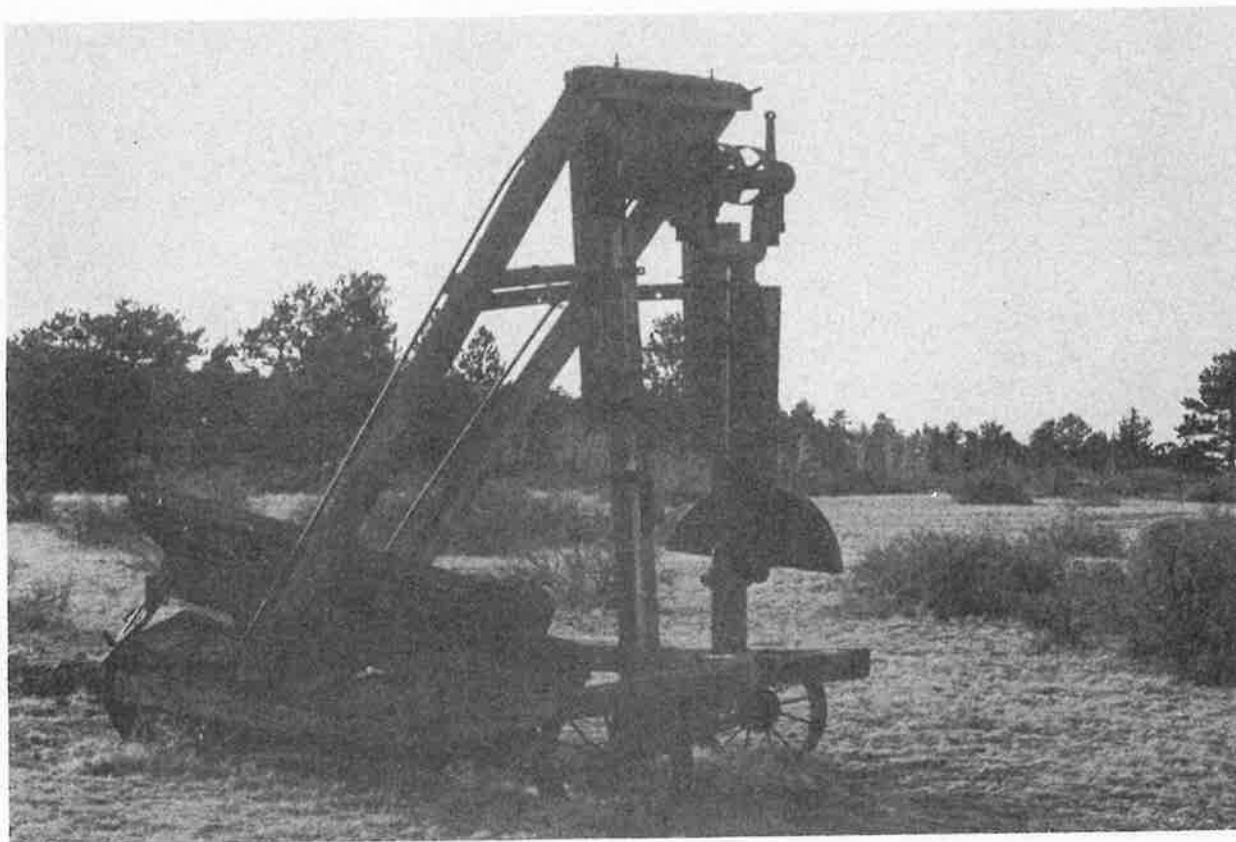
Lake	Date	Fecal Coliform
Granite Springs	6/11/81	0/100 ml
Granite Springs	7/13/81	18/100 ml
Granite Springs	7/21/81	6/100 ml
Crystal Lake	6/11/81	1/100 ml
Crystal Lake	7/13/81	26/100 ml
Crystal Lake	7/21/81	13/100 ml

The water quality standard required by the DEQ is met in both reservoirs. Even though the water quality in the reservoirs satisfied DEQ standards, swimming is not allowed because of the possible negative effects on water quality.

Visual

Curt Gowdy State Park offers a variety of scenic vistas from both off and on-site even though certain activities and management practices have detracted from the visual setting. A particularly striking view of the park is from Section 17 overlooking Granite and Crystal Reservoirs. Views such as this should be enhanced by proposed developments at the park. Development of campgrounds, picnic areas, restrooms and roadways should consider the impact on the visual resource.

Areas having visual significance are important assets to the park. These areas should be developed to take maximum advantage of the aesthetic values of the park. The visual character of the park should be improved in areas where development or use of the land has created any eyesore.



Existing Resource Management And Facilities

SUMMARY OF EXISTING RESOURCE MANAGEMENT AND FACILITIES

Activity at the park is regulated by both Federal and State law. Law enforcement at the park is the responsibility of the Laramie County Sheriff's Department, but is insufficient due to two reasons. First, the location of the park makes quick response to calls difficult. Secondly, the Sheriff's staff is limited in the manpower needed for providing adequate attention to the park. The Wyoming Game and Fish Department is the only other entity with enforcement capabilities at the park. The Game and Fish Department is responsible for enforcing restrictions pertaining to fishing, hunting and boating regulations. The Wyoming Recreation Commission is currently experiencing visitor control problems at Curt Gowdy State Park. Methods for improving law enforcement should be developed in order that future development can be successfully maintained.

Water levels at Granite and Crystal Reservoirs fluctuate widely due to water withdrawal by the City of Cheyenne. Levels are generally high in the spring and low in the fall. Each reservoir is affected differently however, with Crystal Reservoir maintaining a more constant level than Granite. Water demand from the reservoirs is projected to increase dramatically in future years, and although the Stage II water project has passed, the outlook for improved water level stability in the near future is not good. Therefore, water level fluctuations should be considered as an annual occurrence when planning development around the reservoirs.

No cultural resources have been identified within the park except for an old logging operation in the newly acquired Section 17. A survey of Section 17 is necessary for locating the precise locations of sites with significant historical or cultural interest, and should precede all development within this section. Outside the park, areas of historical interest have been identified including the old mining ghost towns of Hecla and Silver Crown. These areas are not factors affecting park development, but if properly interpreted to the public, may offer additional incentive for visitation within the area.

Vandalism and misuse hampers facility management within the park, and is in part due to facility placement. Picnic and campsites are widely dispersed and used indiscriminately. Future design should organize these functions with adequate separation of day and overnight use. Restrooms are of an acceptable architectural style, but are overly abundant, dispersed, and visually dominant. Planning of these facilities should consider the actual needs of each area, and strive to concentrate facilities to reduce vandalism. Restroom structures should also be placed so as to blend into the landscape, avoiding locations on hilltops or open fields. Potable water sources are few and their locations are not properly conveyed to the public. One dump station is found within the park, but its location is not well advertised to park visitors. A well-designed archery range exists at the park, but requires better signage for both safety and information purposes. Finally, roads should be analyzed as to their proper placement, and traffic and information signing improved to enhance maintenance and control of off-road vehicle travel.

Law Enforcement

Lack of adequate law enforcement is the most critical problem facing the future development of Curt Gowdy State Park. This problem is system-wide and must be given careful examination prior to facility expansion and development at all parks. Currently, the Wyoming Game and Fish Department is responsible for enforcing

hunting and fishing laws and U.S. Coast Guard boating regulations. Fishing licenses and catches are frequently verified and boaters are checked for proper registration and required safety equipment. Citations may be given by the Game and Fish Department to those operating boats recklessly or under the influence of alcohol.

Problems such as violation of park regulations, off-road vehicle abuse, littering, vandalism and other criminal acts currently are under the jurisdiction of the county sheriff's department. When a violation occurs, it is necessary to leave the main area of the park and drive to the park headquarters to phone the county sheriff's office. This situation has made law enforcement virtually impossible. Many of the existing resource problems such as excessive roads, vegetation damage, erosion, vandalism, and indiscriminate use of park facilities are a direct result of an unworkable law enforcement system.

Serious consideration should be given to the appropriateness of investing public monies in resource improvement and facility expansion until a workable system for protecting these resources is available.

Facilities and Circulation

The locations of picnic and campsites are widely dispersed within the park. Indiscriminate usage of the area occurs as a result of a lack of designated use areas. There are few differences between picnic and campsites. A clear differentiation between these use areas should be developed. In relation to equipment types, picnic tables are of a stable concrete style, trash cans are of steel, and grills are concrete and located on the ground. (Refer to Map 2.)

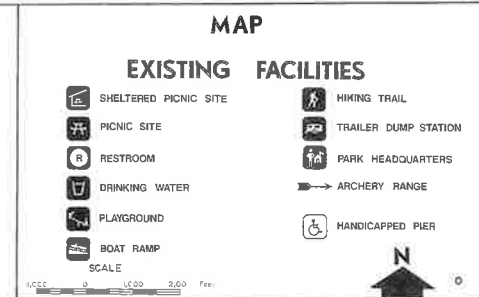
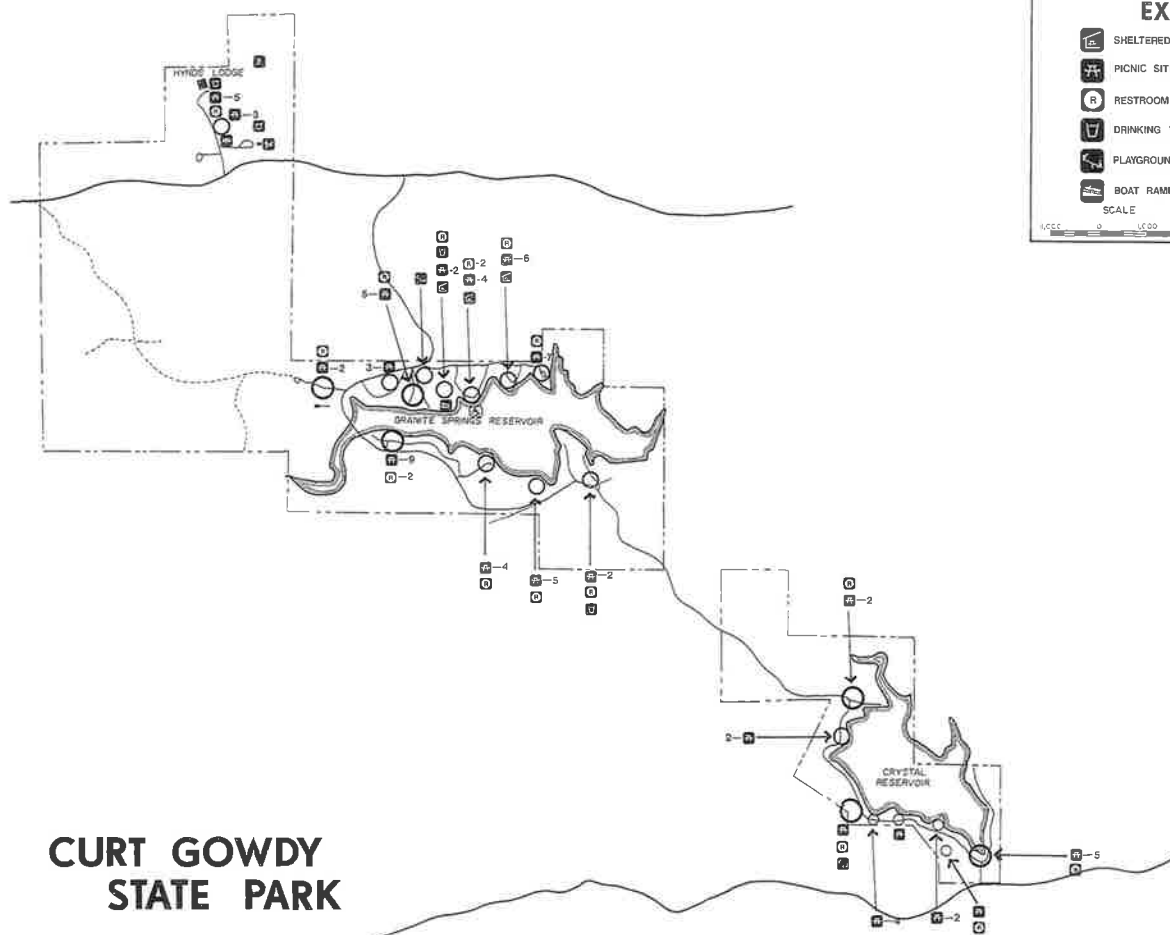
Vault-type restrooms are also widely dispersed and readily noticed by the visitor. There are two architectural styles of restrooms, each of which are acceptable, given proper location within the landscape.

Potable water sources are scarce in the park. Only two sources at Granite Reservoir are available for public use with additional sources at Hynds Lodge and the park office. One dump station now serves the park and is located near the park office. The locations of these water sources are not advertised well to the public. Currently, there is no potable water source available for the Crystal Lake area.

A large, well-designed field archery range also exists within the park, near the causeway of Granite Reservoir and adjacent to Section 17. Although use statistics are unavailable, it appears to offer a unique recreational opportunity for area archery and hunting clubs. The nature of the terrain on which this range is located precludes its use for alternate recreation development. Presently, there is inadequate signage describing the range and its location.

Indiscriminate off-road activity has occurred within the park and has created numerous unnecessary road systems. Loss of vegetation and erosion have resulted. Although there are a series of well-established roads within the park, better road planning may be necessary to accommodate future development. Additionally, increased signage may be necessary for directing traffic to various areas. Existing asphalt roads are located on an unstable soil base on a steep slope. The only asphalt road in the park is located on an unstable soil base on a steep slope. These conditions make maintenance of the surface very difficult. The majority of the road is also located on private land. Because of these factors, consideration should be given to moving the main entrance road.

CURT GOWDY STATE PARK



There is currently no interpretive signage or program at the park, but an interpretive plan has been scheduled.

TABLE 6

Existing Park Facilities

	Granite Reservoir	Crystal Reservoir	Hynds Lodge
Covered Picnic Tables	3	-	-
Picnic Tables	49	19	8
Grills	41	18	3
Trash Cans	11	7	-
Double Restrooms	3	1	-
Single Restrooms	7	3	1
Potable Water Sources	2	-	1
Lodge	-	-	1

Off-Site Historical Resources

The area surrounding Curt Gowdy has few known sites of potential historical significance. One of these is the old mining or ghost town known as Hecla, located twenty miles west of Cheyenne just off the Happy Jack Road, near Crystal Reservoir. Another is a short-lived mining camp called Silver Crown.

A fair-sized silver mining district was formed at Hecla in the spring of 1886. Largely the brainchild of Wyoming Territorial Geologist, Professor Aughery, there is evidence to suggest the boom was an intentional fraud. While claims sprang up rapidly and \$40,000 was quickly invested, the boom ended after only one season. Down the road, twenty two miles northwest of Cheyenne another camp evolved in the Silver Crown Hills. Like so many mining adventures of the era, the promotions proved to be greater than the resources. Silver Crown was abandoned almost at once and by 1886-87 the Cheyenne City Directory listed only a post office and three residents there.

Few realized at the time that the era of the open range cattle industry in the surrounding area was also drawing to an end. The severe winters and droughts of the late 1880's would end the open range forever and completely change the cattle ranching industry. The cattle industry, of course, revived and today remains as the principal enterprise of the area although it is now giving way somewhat to recreation. One or two local historic ranches also remain in pristine enough condition to warrant mention in any general interpretive display.

Recreational use of the area began as early as 1904 because of water development in the area. After various attempts to supply sufficient water for Cheyenne's demand and following several shortages, the Granite Springs Reservoir and supply line were completed in 1904. The reservoir provided Cheyenne water until 1910 when an additional supply was developed at Crystal Dam.

Presently, Silver Crown and Hecla are on privately owned land. From available information, both sites are difficult to locate and not easily accessible. Due to these limitations, we would consider the interpretive potential of these sites as quite low unless they can be incorporated into a more general display at the park which identifies some of the region's colorful history.

Cultural Resources

Currently, there have been no surveys for archaeological sites at Curt Gowdy State Park. Such a survey could be contracted at an estimated cost of \$7,500. In keeping with existing legislation, before the actual survey can be started, the following steps must be undertaken:

Class I - The Overview

Definition: A broad-brush inventory of a large geographic area, based on previously known or recorded information.

Objectives: 1) To compile, in one document all previously recorded data about the nature, distribution and values of cultural resources in the area covered, and 2) to derive estimates of potential values or likelihood of additional cultural resources existing in the area covered.

Class II - Partial Field Inventory

Definition: A field inventory of a project area or set of alternative project areas in which a systematic sampling strategy is used to select actual ground portions to be examined.

Objectives: 1) To predict, within the limits of sampling error, the total number, nature and distribution of cultural resources present in the area sampled, and 2) to locate and prepare an inventory record for each cultural resource present on ground portions actually field-examined.

Class III - Complete Inventory

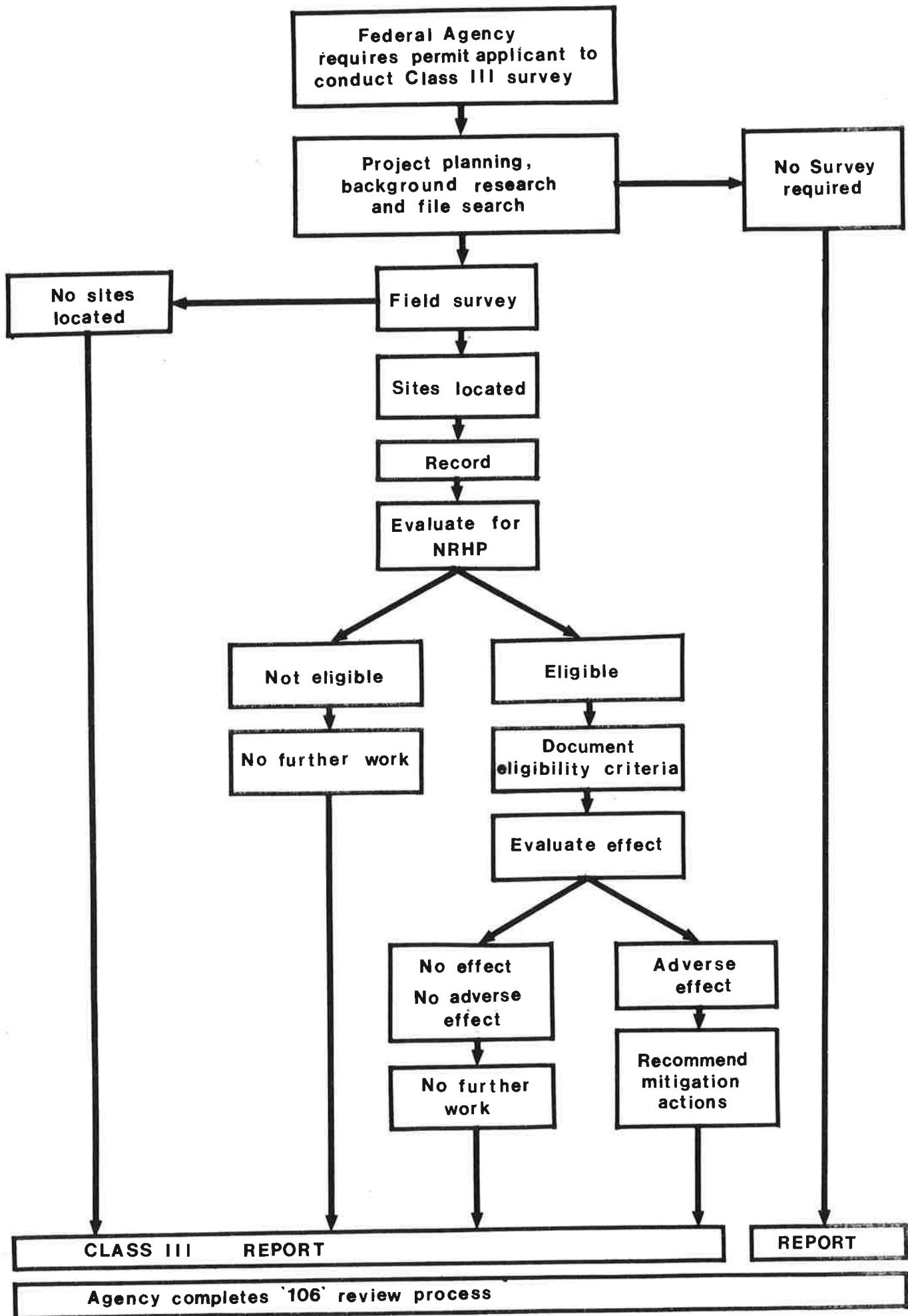
Definition: A comprehensive inventory of a specific project area; in almost all cases it includes a field examination of the project area and an evaluation of resources examined.

Objectives: 1) To locate and accurately describe 100% of the visible cultural resources in the project area, and 2) to evaluate any cultural resources located in the project area.

A flow chart follows, summarizing the above information.

Figure 2

Cultural Resource Survey



Cheyenne Stage II Water Development Project

The United States Forest Service plan known as the Cheyenne Stage II Water Development Project is projected to increase flow of water into Curt Gowdy State Park through a water diversion project. This flow will be increased by approximately 5400 acre feet annually, using water from the North Platte River drainage in the Medicine Bow National Forest. A future proposal of the Cheyenne Board of Public Utilities is the Cheyenne Stage III Water Development Proposal which will reportedly supplement the regional water reserves for Carbon, Albany, Natrona, Converse, Niobrara, Goshen, Platte, and Laramie counties. Water will be diverted from the Little Snake River headwaters and stored. It may then be used in the Snake River drainage or transported across the Continental Divide to the North Platte River drainage, and connected with the Stage II project.

Water Uses

The primary use of the water in Granite and Crystal Reservoirs has traditionally been, and will continue to be, Cheyenne's major source of drinking water. The Cheyenne Board of Public Utilities draws its water from Crystal Reservoir, and attempts to keep Crystal Reservoir at a constant level. Granite Reservoir acts as the supply for Crystal, and becomes subject to much greater fluctuations.

Recreation is a secondary function of the reservoirs and is the focal point of the majority of the park's visitors. Most recreational use of the reservoirs occurs as boating and fishing since both reservoirs are well-stocked with rainbow trout by the Wyoming Game and Fish Department.

For many recreationists, the wide range in reservoir levels at Granite Reservoir can cause some hardship. Surface acreage of Granite Reservoir may range from 188 acres to 50 acres or less, depending on rainfall, snowmelt and consumption by Cheyenne residents. Low water levels often expose islands, sandbars and old stumps. Boaters may become discouraged by such low levels, and choose to recreate in other areas such as Guernsey and Glendo State Parks. Another deterrent to boaters is the park's only boat launching site does not reach the water during late summer and becomes useless to boaters.

Reduced acreage may also inconvenience other users of the lakes, such as picnickers, sightseers, sailors, waterskiers, and motorboat racers. Fishermen may perceive the quality of the experience to be less than optimal as the density of fishermen around the lake increases, and as the acreage decreases. In addition, water temperatures may increase, causing algae to bloom and reach levels excessive for good trout habitat, and this may cause fishing to suffer.

The Cheyenne Stage II water diversification project should be of value to recreational users of Curt Gowdy State Park by alleviating much of the water level fluctuation problem. Increased water flows into Curt Gowdy State Park by the project should raise the water level and moderate fluctuations.



The Park Visitor

SUMMARY OF VISITOR USE

Approximately 81 percent of the total use of Curt Gowdy State Park is by Wyoming residents. Colorado visitors contribute an additional 5.5 percent while other states and countries contribute 13.2 percent. A more detailed analysis of the visitor use data indicates 88.9 percent of all Wyoming resident park visitors were from Laramie County.

Peak visitation occurs during the summer months of June, July and August, with approximately 64 percent of the visitation occurring during the weekends.

Participation patterns between campers and day users indicate several relatively distinct differences. Campers are described as Laramie County families visiting the park for an extended weekend. Campers are more likely to be found relaxing, sightseeing, hiking and boat fishing than day users.

Day users, in contrast to campers, tend to engage in activities which do not depend on a variety of support facilities. Day users can also be described as Laramie County families visiting the park to shore fish, picnic and relax.

The use projections for individual activities were calculated from data collected by the Wyoming Recreation Commission. Projections for 1985, 1990, and 2000 were computed using trend line analysis based on the park visitor use data for 1972 through 1981.

Results from the trend line analysis indicate a steady and progressive increase in participation for both water based and land based activities. Among the land-based activities, the greatest amount of use and the sharpest increase can be expected in picnicking. This anticipated growth can be expected to put an undue strain on existing facilities. Of the water-based activities, shore-fishing is expected to exhibit the largest increase in participation.

SURVEY RESULTS

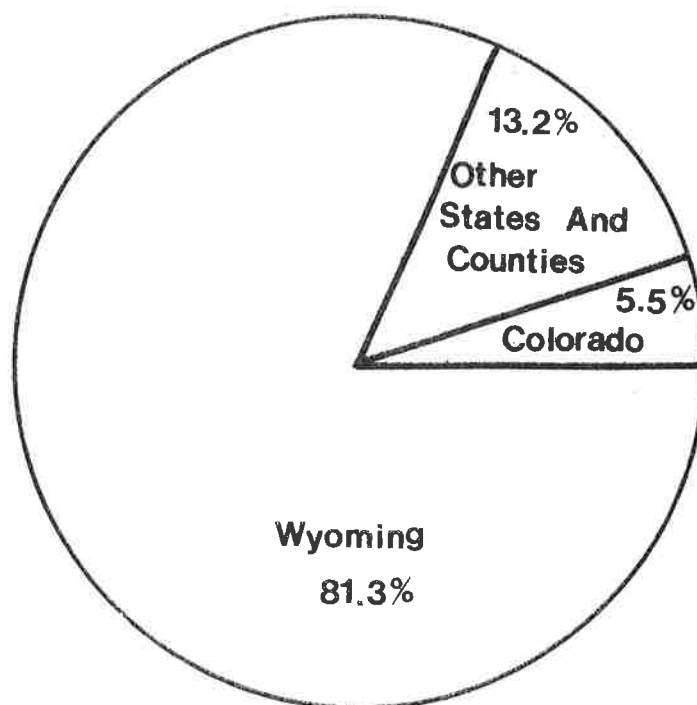
Visitation data gathered by the Wyoming Recreation Commission during the past decade were analyzed for Curt Gowdy State Park. In addition, a more detailed survey of visitors at Curt Gowdy State Park was conducted during May to September of 1981. The 1981 survey consisted of on-site interviews of 266 adult visitors (16 years or older) contacted throughout the park on randomly selected weekends and weekdays.

Place of Origin

Approximately 81 percent of the total use of Curt Gowdy State Park is by Wyoming residents. Colorado contributes an additional 5.5 percent of the total park visitation. Despite the large percentage of park visitors from Wyoming and Colorado, other neighboring states also contribute to the total park visitation. The origin of visitors to Curt Gowdy State Park is presented in Figure 3.

Figure 3

Origin of Visitors



As can be seen from the more detailed analysis in Table 7, 90.8 percent of all the park visitors from Wyoming were from Laramie County and Cheyenne. This is particularly important because it suggests the population growth anticipated for Laramie County will be the most significant factor affecting use at Curt Gowdy State Park. As a result, future development at Curt Gowdy should be carefully coordinated with recreation development within Laramie County.

TABLE 7

ORIGIN OF RESIDENT VISITORS TO CURT GOWDY STATE PARK -- 1981

City/County	%
Cheyenne/Laramie	88.9
Laramie/Albany	4.8
Laramie*	1.9
Goshen*	1.0
Miscellaneous**	3.4

*Visitors from these counties did not specify city of origin.

**All remaining locations contributed less than 1% of the total resident visitation.

Social Groups

As can be seen from Table 8 families and couples comprise the majority of campers at the park (69.5% combined). Families are the most frequent day user group (28.6%) although couples (19.5%) and family and friends (18%) also contribute substantially. Therefore, it is observed that families and couples are the most frequent users of Curt Gowdy State Park, both as campers and as day users.

TABLE 8

TYPE OF GROUP VISITORS ARRIVED WITH AT CURT GOWDY STATE PARK -- 1981

Group Type	% All Visitors	% Campers	% Day Users
Individual	7.9	5.3	10.5
Couple	25.9	32.1	19.5
Family Unit	32.7	37.4	28.6
Extended Family	8.6	6.9	10.5
Family and Friends	15.8	13.0	18.0
Friends	7.9	4.6	11.3
Organization	1.1	0.8	1.5

Columns may not add to 100% due to rounding.

Type of Vehicle Used

As indicated in Table 9 the most frequent vehicle unit used by campers is the pickup or camper (26.7%) although automobiles (23.7%), pickups pulling trailers (19.1%), and automobiles pulling trailers (13.7%) also contribute substantially. The majority of the day users (54.1%) use an automobile only, although pickups or campers (30.1%) are also used. Although the majority of campers and day users do not currently require trailer parking, trailer parking will need to be provided for camping areas.

TABLE 9

TYPE OF VEHICLE VISITORS ARRIVED IN AT CURT GOWDY STATE PARK -- 1981

Vehicle Type	% All Visitors	% Campers	% Day Users
Automobile	39.1	23.7	54.1
Automobile Pulling Trailer	7.1	13.7	0.8
Pickup or Camper	28.6	26.7	30.1
Pickup Pulling Trailer	11.7	19.1	4.5
Van	5.3	6.1	4.5
RV Motor Home	7.1	9.2	5.3
Miscellaneous*	1.1	1.5	0.8

*All remaining vehicle types contributed less than 1% of the total.
Columns may not add to 100% due to rounding.

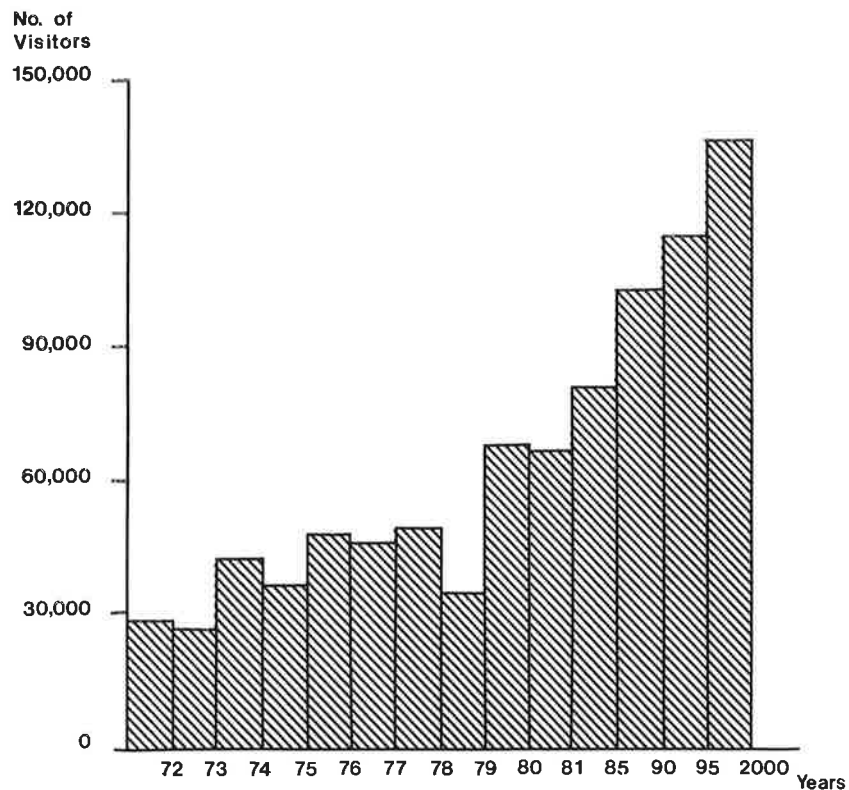
DESCRIPTION OF VISITOR USE

Visitation Levels

Figure 4 presents recent and projected annual visitation levels at Curt Gowdy State Park during the period from 1972-2000. In the nine year period between 1972 and 1981 visitation has increased by nearly 300 percent. Visitation is projected to increase by approximately 67,300 visitors to Curt Gowdy by the year 2000, or more than twice the level recorded in 1981.

Figure 4

Recent and Projected Visitation



Period of Use

As can be seen in Table 10, about 64% of the visitation at the park occurs on weekends. Although no data were available for year round use the main recreation season at the park appears to run from June to August. Therefore, future planning needs to consider the provision of summer recreation facilities, and especially those appealing to weekend users.

TABLE 10

CURT GOWDY STATE PARK

PERCENTAGE OF VISITATION BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	59.8	66.9	59.9	68.2	63.7	64.4
Weekday	40.2	33.1	40.1	31.8	36.3	35.6
Total Monthly Use	13.4	24.9	22.7	28.3	10.7	100.0

TOTAL NUMBER OF VISITORS BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	5,369.806	11,162.926	9,111.823	12,933.718	4,567.471	43,145.744
Weekday	3,609.802	5,523.062	6,099.901	6,030.678	2,602.813	23,866.256
Total Monthly Use	8,979.608	16,685.988	15,211.724	18,964.396	7,170.284	67,012.000

TOTAL NUMBER OF VISITOR DAYS BY WEEKEND AND WEEKDAY -- 1981*

	May	June	July	August	September	Total
Weekend	15,024.189	31,232.772	25,493.985	36,187.273	12,779.335	120,717.554
Weekday	10,099.873	15,452.985	17,066.926	16,873.246	7,282.416	66,775.446
Total Monthly Use	25,124.062	46,685.757	42,560.911	53,060.519	20,061.751	187,493.000

*Estimated from traffic counters and visitor use surveys.

Peak Use

During peak use, such as a three day weekend in the summer (Labor Day, Fourth of July or Memorial Day) Curt Gowdy State Park can receive as many as 1,867 visitors per day.

Length of Stay

The average length of stay for Curt Gowdy campers is 2.7 days. The average length of stay for day users is 5.26 hours.

Reason for Visiting

Although the large majority of park visitors (both resident and non-resident) consider Curt Gowdy State Park as their primary destination, some visitors travel to the park while en route to other locations (Table 11).

TABLE 11
REASONS FOR VISITING CURT GOWDY STATE PARK -- 1981

Reason	% Total Visitation	% Resident Visitation	% Non-Resident Visitation
Daytime stop en route to another destination	6.6	5.0	10.4
Overnight stop en route to another destination	4.6	2.0	16.7
Curt Gowdy State Park was the destination	88.8	93.0	72.9

TABLE 12
PERCENT OF INDIVIDUALS CAMPING BY LOCATION OF RESIDENCE

	All Visitors	Resident	Non-Resident
Day User	50.4	55.8	29.2
Camper	49.6	44.2	70.8

Activity Participation Patterns and Projections

Data from the 1981 Visitor Survey were analyzed to determine the percentage of park visitors participating in a variety of different activities available at Curt Gowdy State Park. This data is shown in Table 13.

Participation patterns between campers and day users indicate several relatively distinct differences. Campers are best described as Laramie County families visiting the park for an extended weekend. Campers are more likely to be found relaxing, sightseeing, hiking, and boat fishing than day users. Both campers and picnickers, however, enjoy shore fishing and picnicking. Planning of camping and picnic areas should consider the provision of facilities to accommodate these interests. Day users, in contrast to campers, tend to engage in activities which do not depend on a variety of support facilities. Day users can also be described as Laramie County families visiting the park to shore fish, picnic and relax.

TABLE 13

ACTIVITIES ENGAGED IN WHILE VISITING CURT GOWDY STATE PARK -- 1981

Activity	% All Visitors	% Campers	% Day Users
Shore Fishing	68.0	66.7	67.7
Relaxing/Doing Nothing	50.8	63.4	39.1
Picnicking	45.1	46.6	43.6
Sightseeing	35.7	43.5	28.6
Hiking	16.5	25.2	8.3
Boat Fishing	10.2	14.5	6.0
Nature Study	8.6	11.5	6.0
Swimming	4.1	3.1	5.3
Pleasure Boating	3.8	5.3	2.3
Water Skiing	10.4	4.6	2.3
Driving Off-Road Vehicles	2.3	2.3	2.3
Sailing	1.1	---	2.3

Use projections for individual activities were calculated from data collected by the Wyoming Recreation Commission. Projections for 1985, 1990, 1995 and 2000 were computed using trend line analysis based on the park's visitor use data for 1972 through 1981.

Results from the trend line analysis in Figures 5 and 6 indicate steady and progressive increases in participation in both water-based and land-based activities. Among the land-based activities, the greatest amount of use and the sharpest increase can be expected in picnicking. This anticipated growth can be expected to put an undue strain on existing facilities. Of the water-based activities shore fishing is expected to exhibit the greatest increase in participation.

Figure 5

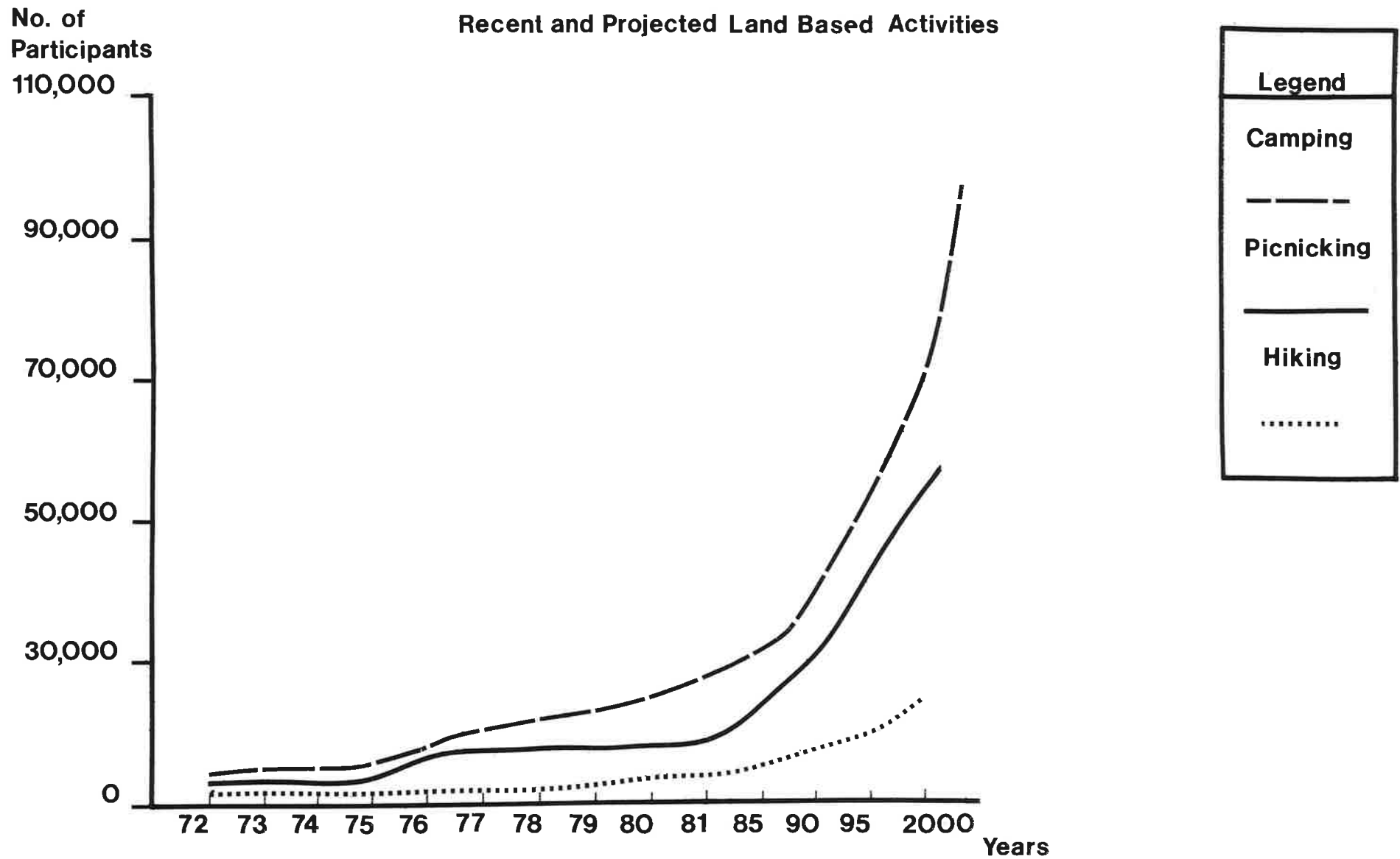
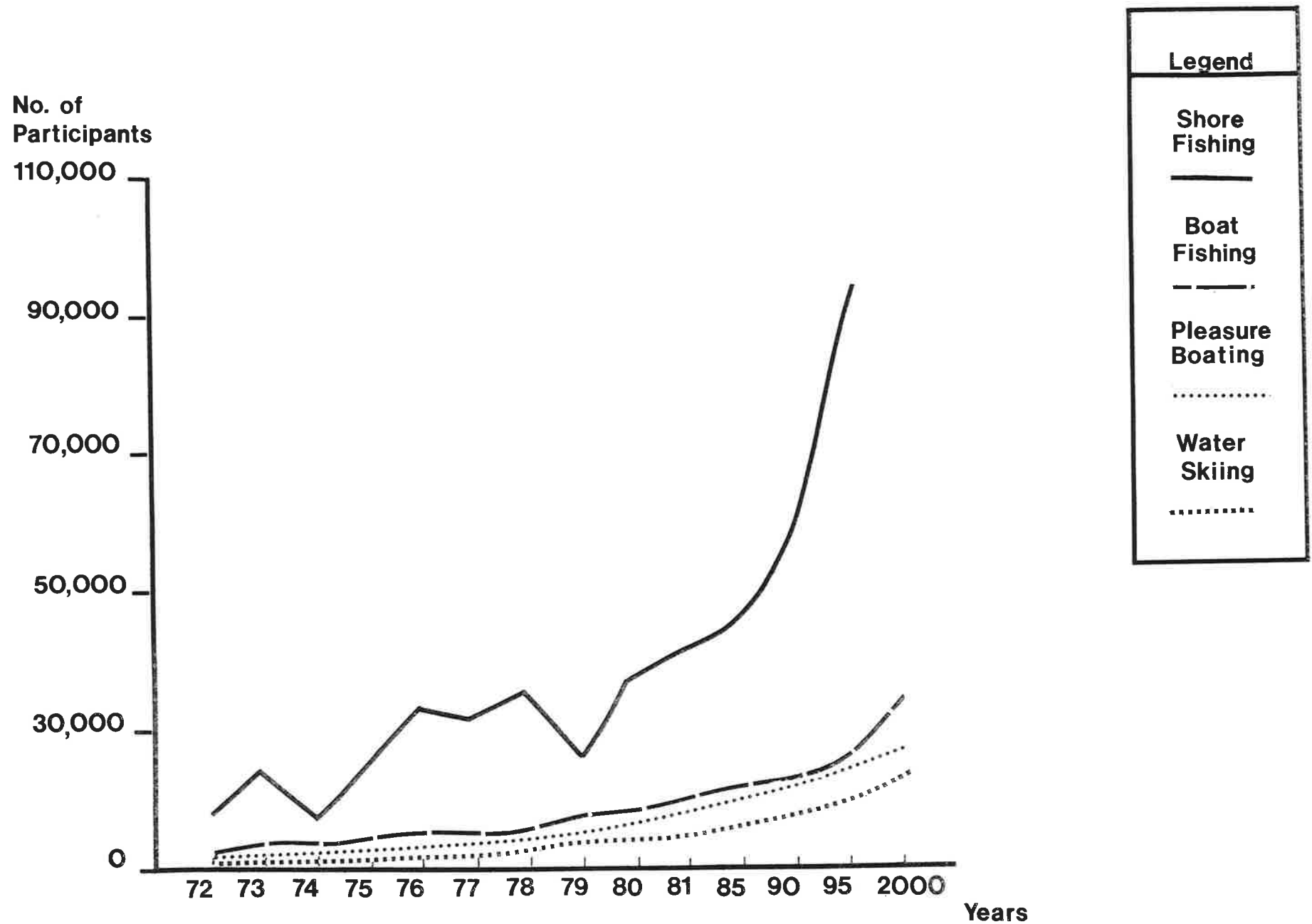


Figure 6

Recent and Projected Water Based Activities



Satisfaction With Existing Facilities

The survey also asked visitors if they were satisfied with the facilities presently provided at the park. Overall, both campers and day users were satisfied with all facilities. However, campers and day users differed as to the facilities they were least satisfied with. The campers were least satisfied with roads, police security, drinking water, and playgrounds. On the other hand, the day users were least satisfied with playgrounds, shade, boat ramps, and signs within the park. The results for all facilities are in Table 14.

TABLE 14

SATISFACTION WITH EXISTING FACILITIES AT CURT GOWDY STATE PARK -- 1981*

Facility	All Visitors	Campers	Day Users
Access to Lake Shore	4.30	4.26	4.34
Picnic Areas	4.28	4.33	4.25
Garbage Facilities	4.25	4.30	4.19
Parking Lots	4.27	4.44	4.13
Campgrounds	4.20	4.34	4.01
Beaches	4.09	4.13	4.04
Vegetation Density	3.99	3.99	3.97
Restrooms	3.95	4.07	3.82
Signs Directing Visitors to the Park	3.91	3.71	3.87
Dumping Station	3.89	4.01	4.00
Boat Mooring	3.87	4.00	3.77
Signs Within the Park	3.77	3.82	3.72
Boat Ramps	3.77	3.85	3.70
Shade	3.72	3.78	3.66
Playgrounds	3.67	3.68	3.66
Drinking Water	3.67	3.58	3.80
Police Security	3.48	3.59	3.38
Park Roads	3.45	3.53	3.81

*5=Very Satisfied

4=Satisfied

3=Neutral

2=Unsatisfied

1=Very Unsatisfied

Perceived Problems

In the 1981 survey, visitors were asked the extent to which they experienced a number of problems during their visit to Curt Gowdy State Park (Table 15). Overall, the problems were not major and did not appear to hamper the experience. The most commonly perceived problem for both campers and day users was litter, although the problem was perceived in different degrees. All problems perceived by visitors were slight. The major problems faced by campers were litter, broken tables and grills, and water pollution, while the major problems for day users also included reckless boating and noisy visitors. These problems and others could become larger in the future as visitation increases in the park. Therefore, these problems should be handled carefully and eliminated, if possible, before they affect more visitors.

TABLE 15

PROBLEMS ENCOUNTERED BY CURT GOWDY STATE PARK VISITORS -- 1981*

Problem	All Visitors	Campers	Day Users
Noisy Pets	1.22	1.15	1.30
Unreasonable Regulations	1.23	1.19	1.26
Conflicting Activities	1.32	1.20	1.45
Traffic Congestion	1.32	1.26	1.39
Unsafe Facilities	1.33	1.23	1.42
Inadequate Rule Enforcement	1.34	1.21	1.47
Excessive Camping Fees	1.35	1.31	1.37
Uncontrolled Pets	1.36	1.27	1.46
Reckless Driving	1.41	1.42	1.39
Vandalism	1.41	1.32	1.49
Rude Visitors	1.43	1.32	1.54
Overcrowding	1.49	1.44	1.53
Noisy Visitors	1.54	1.44	1.62
Broken Picnic Tables & Grills	1.56	1.58	1.52
Water Pollution	1.61	1.56	1.65
Reckless Boating	1.63	1.43	1.82
Litter	2.01	1.80	2.19

*5=An Extreme Amount
 4=Quite A Lot
 3=A Moderate Amount
 2=A Little Bit
 1=Not At All



Projections

PROJECTED FACILITY NEEDS AND IMPROVEMENTS

Facility Needs

Deficiencies in existing park facilities became apparent when considering visitor use data derived during the 1981 season. Long-range use projections are based on the visitor use data, and although specific user preferences and behavior may vary, the demand for all activities is expected to increase. To meet these increased demands, the number of facilities serving these activities must also be increased.

Future Developments and Improvements

Many of the respondents to the 1981 survey have expressed the need for a higher level of park development. Some campers do not necessarily seek a rustic experience and would like to see development of support facilities such as showers and electrical and water hookups. A number of day users desire the development of picnic shelters, lights in toilets, hiking trails and park rangers. Both campers and day users desire the development of a first aid center and flush toilets. These and other development and improvement needs are listed in Table 16.

TABLE 16

FUTURE DEVELOPMENTS AND IMPROVEMENTS
CONSIDERED APPROPRIATE BY CURT GOWDY STATE PARK VISITORS -- 1981

Developments/Improvements	% All Visitors	% Campers	% Day Users
First Aid Centers	25.6	23.8	27.9
Flush Toilets	25.6	23.8	25.6
Showers	22.1	28.6	16.3
Picnic Shelters	20.9	9.5	32.6
Lights in Toilets	19.8	9.5	30.2
Electrical & Water Hook-Ups	18.6	19.0	18.6
Hiking Trails	17.4	14.3	20.9
Park Rangers	15.1	7.1	23.3
Group Picnic Areas	14.0	11.9	16.3
Paved Roadways	14.0	14.3	14.0
Single Unit Picnic Areas	11.6	7.1	16.3
Group Campgrounds	10.5	11.9	9.3
Single Unit Campgrounds	10.5	14.3	7.0
Boat Docks	8.1	4.8	11.6
Developed Recreation Areas	8.1	9.5	7.0
Lights in Campgrounds	8.1	9.5	7.0
Boat Ramps	7.0	4.8	9.3
Park Personnel	7.0	2.4	11.6
Manned Visitor Center	4.7	2.4	7.0
Laundry Facilities	3.5	4.8	2.3

*I would like to make
a nasty comment on the
next two pages.*

Campsites¹: The 1980 Wyoming SCORP summary has identified that in 1979, Region One, which consists of Goshen, Platte, Laramie, Albany and Carbon counties, had a shortfall of 1020 campsites. The data from Curt Gowdy State Park showed an estimated shortfall of 152 campsites in 1981.

- a) $1981 \text{ use}^2 / \text{Average party size}^2 = \text{Number of camping parties}$
 $24,750 / 2.9 = 8,534$
- b) $\text{Season length}^3 / \text{Average length of stay}^2 = \text{Number camping parties per site}$
 $125 / 2.7 = 46.30$
- c) $\text{Number camping parties} / \text{Number parties per site}^2 = \text{Number of sites required}$
 $8,534 / 46.30 = 184$
- d) $\text{Number projected sites needed} - \text{existing sites} = \text{Present shortfalls}^4$
 $184 - 32 = 152$

In 1990, the Wyoming SCORP indicates an estimated shortfall of 2625 campsites. The park data estimates a shortfall of 262 campsites at Curt Gowdy State Park in 1990.

- a) $\text{Anticipated 1990 use}^5 / \text{Average party size}^2 = \text{Number of camping parties}$
 $39,470 / 2.9 = 13,610$
- b) $\text{Season length} / \text{Average length of stay} = \text{Number of camping parties per site}$
 $125 / 2.7 = 46.30$
- c) $\text{Number camping parties} / \text{Number parties per site} = \text{Number of sites required}$
 $13,610 / 46.30 = 294$
- d) $\text{Number projected sites needed} - \text{Existing site} = \text{Number additional sites needed by 1990}$
 $294 - 32 = 262$

¹The picnic sites on the south shore of both reservoirs and the sites near Hynds Lodge are the sites classified as campsites because they are larger and contain more vegetation.

²Figures obtained from 1981 State Park Visitor Use Summary.

³Season length was determined to have run from mid-May through mid-September for a total of 125 days.

⁴All shortfalls for campsites are based upon the assumption all campers camp in designated sites only.

⁵Figures obtained through trend line analysis of 1981 Visitor Use Data.

Picnic Facilities⁶: The 1980 Wyoming SCORP summary has identified that in 1979 Region One had no need for more picnic sites. The data from Curt Gowdy State Park shows a shortfall of 11 picnic sites in 1981.

- a) $1981 \text{ use}^2 / \text{Average party size}^2 = \text{Number of picnic groups}$
 $28,093 / 3.3 = 8,513$
- b) $\text{Length of season} \times \text{Turnover per day}^7 = \text{Number of picnic groups per site}$
 $125 \times 2.5 = 312.5$
- c) $\text{Number of picnic groups} / \text{Number of picnic groups per site} = \text{Number of sites required}$
 $8,513 / 312.5 = 27$
- d) $\text{Number of projected sites needed} - \text{Existing sites} = \text{Number additional sites needed}$
 $27 - 38 = -11^8$

In 1990, the Wyoming SCORP indicated an estimated shortfall of 585 picnic sites will arise. The park data estimates 8 picnic sites above what is needed in 1990.

- a) $\text{Anticipated 1990 use}^5 / \text{Average party size} = \text{Number of picnic groups}$
 $47,334 / 3.3 = 14,344$
- b) $\text{Length of season}^3 \times \text{Turnover per day} = \text{Number of picnic groups per site}$
 $125 \times 2.5 = 312.5$
- c) $\text{Number of picnic groups} / \text{Number picnic groups per site} = \text{Number of sites required}$
 $14,344 / 312.5 = 46$
- d) $\text{Number projected sites needed} - \text{Existing sites} = \text{Number additional sites needed by 1990}$
 $46 - 38 = 8^9$

⁶Picnic facilities are all the sites not classified as campsites such as those on the east and west shores of both reservoirs.

⁷Because most picnickers stay at a site for a short time, a turnover rate of 2.5 will be used.

⁸The negative number indicates that in 1981, Curt Gowdy State Park had 11 more picnic sites than it needed.

⁹By comparison of the shortfalls of camping sites and the abundance of picnic sites, it is recognized that extra picnic sites can be considered campsites. Therefore, the corrected 1981 need for campsites is:

Present shortfalls of campsites + Present shortfalls of picnic sites =
Corrected Need $152 + (-11) = 141$

The corrected 1990 need for campsites is:

Number additional campsite needed by 1990 + Number additional picnic sites needed by 1990 = Corrected Need
 $262 + 8 = 270$

Power Boat Ramps: Curt Gowdy State Park provides one boat ramp on Granite Springs Reservoir. No docking facilities are currently provided.

Present Needs:

a) $1981 \text{ use}^2 / \text{Average party size}^2 = \text{Number boating groups}$
 $5,948 / 3.2 = 1,859$

b) $\text{Season length}^3 \times \text{Number boats launched and removed each day} = ^{10} \text{Number boats accommodated}$

$$125 \times 12 = 1,500$$

c) $\text{Number boating groups} / \text{Number of boats per ramp} = \text{Number ramps needed}$

$$1,859 / 1,500 = 1$$

d) $\text{Number ramps needed} - \text{Number existing ramps}^{11} = \text{Present shortfalls}$

$$1 - 1 = 0$$

$$1 - 0 = 1$$

What About Replacement?

1990 Needs:

a) $\text{Anticipated 1990 use}^5 / \text{Average party size} = \text{Number boating groups}$

$$12,431 / 3.2 = 3,885$$

b) $\text{Season length} \times \text{Number boats launched and removed each day} = \text{Number boats accommodated}$

$$125 \times 12 = 1,500$$

c) $\text{Number boating groups} / \text{Number of boats per ramp} = \text{Number ramps needed}^{12}$

$$3,885 / 1,500 = 2$$

d) $\text{Number projected ramps needed} - \text{Number of existing ramps} = \text{Number additional ramps needed}$

$$2 - 1 = 1$$

¹⁰The figure was obtained by estimating each boat required $\frac{1}{2}$ hour to launch and $\frac{1}{2}$ hour to remove from the reservoir. With a single ramp and a 12 hour day, 12 boats could be launched and removed.

¹¹The existing ramp is a single ramp consisting of one lane.

¹²The number of ramps needed is actually 2.5, another complete ramp must be provided by 1990.

The addition of another boat ramp would cause an increase in the number of boats on Granite Springs Reservoir. The carrying capacity of this reservoir is limited and could easily be exceeded with increasing levels of use. The minimum area needed per boat is two acres, with water skiing requiring additional space.

Non-Power Boating Facilities

Curt Gowdy State Park is unique in that it provides for a variety of boating experiences. While power boating is popular at Granite Springs Reservoir, Crystal Reservoir is generally inaccessible to large power boats due to the lack of boat ramps, and is effectively reserved for small power boats and non-power boats. Crystal Reservoir is large enough to accommodate the projected increase in non-power boating at least through the year 2000.

Water Supply

The existing facilities for supplying water at the park consist of two water pumps at Granite Springs Reservoir. No water pumps are currently provided at Crystal Reservoir. A common standard for water supply is that the unit to be supplied with water should be located not more than 300 feet from the source of water. The water supply falls far short of this standard, particularly at Crystal Lake Reservoir.

Restrooms

There currently exist 17 restrooms at Curt Gowdy State Park. An accepted standard for restrooms is for one male/female restroom to service 150 people per day. The 1981 visitor estimate showed that during peak day use periods, 1,867 persons were on-site, indicating only twelve restrooms are required. Thus, the present supply of restrooms greatly exceeds the need. The 1990 visitor estimate is 97,209 people and only four additional restrooms will be required to service those people. Therefore, the restrooms provided at the park are in excess of present and projected needs.

Miscellaneous Facility Needs

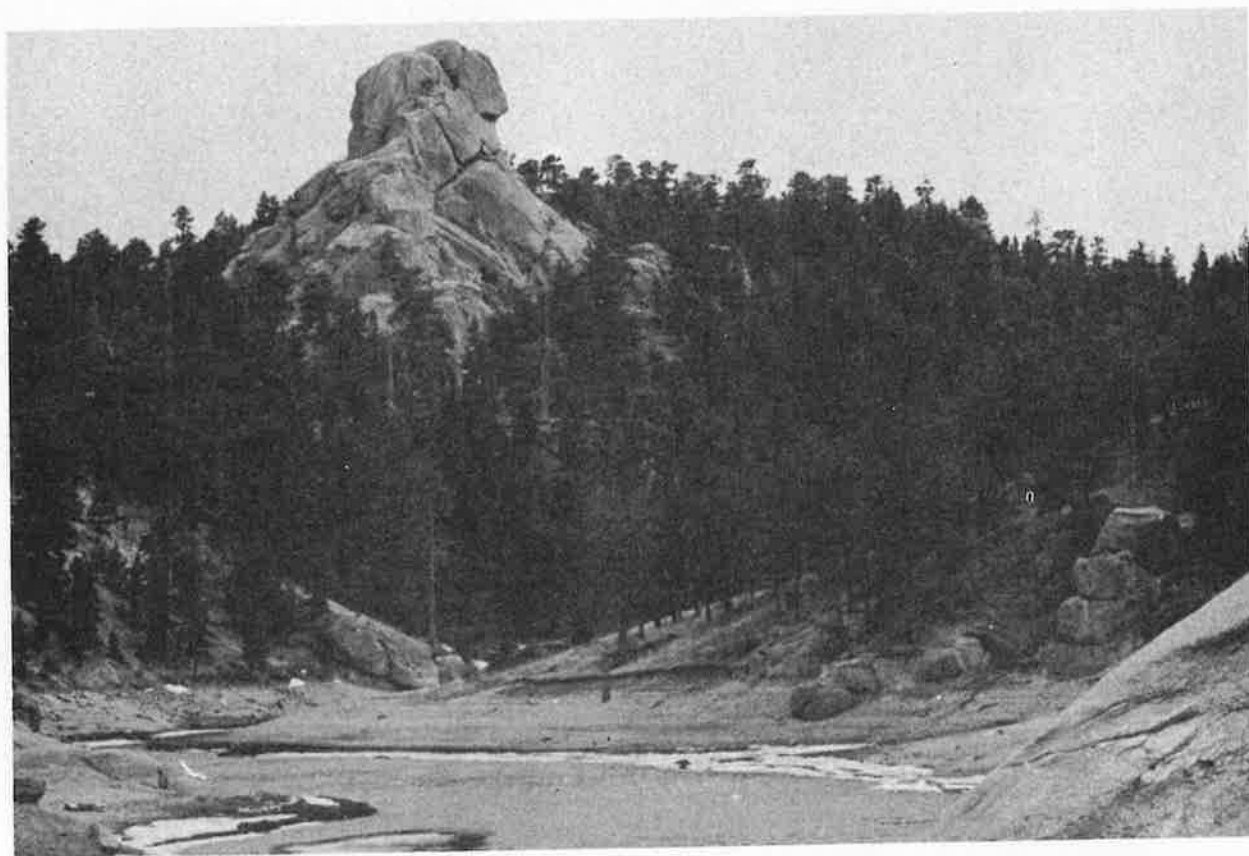
Curt Gowdy State Park provides many sites for the handicapped including a specially designed fishing pier. Handicapped facilities appear to be in adequate supply, given the low number of handicapped visitors utilizing the park; however, better signing is necessary. Signs should be provided which direct visitors to these sites as well as to other facilities such as water supplies, boat ramps and support facilities.

TABLE 17

PRESENT AND FUTURE FACILITY NEEDS

FACILITY	1981 NEEDS	1990 NEEDS
Campsites	152	262
Picnic Facilities	0	8
Power Boat Ramps	0	1
Non-Power Boat Facilities	0	0
Water Supply	**	**
Restrooms	0	0

**The estimated number of needed facilities is unknown.



Development Program

DEVELOPMENT PROGRAM

I. Maintain Natural Resources

Based on existing use patterns and the limitations of the natural resources, a moderate level of development is considered appropriate. The challenge is to maintain both a sense of security and a pristine atmosphere while accommodating the increasing recreation demand. Certain areas of the park will be better suited for more intense development while other areas should be kept in a natural state.

A. Goal: Development should be consistent with the character of the area.

Objectives:

1. Minimize disruption to existing topography and landform.
2. Minimize disruption to the park's existing vegetation.
3. Utilize native plant materials for landscaping in the park.
4. Utilize native materials when building structures whenever feasible.
5. Design structures which are compatible with the existing landscape.
6. Maintain and improve existing wildlife habitat within the park.

B. Goal: Development should maintain or improve visual quality at Curt Gowdy State Park.

Objectives:

1. Plan development so that scenic vistas and visual corridors are not disrupted.
2. Utilize scenic views in designing park facilities.
3. Improve areas in the park that are visually unattractive.

II. Clientele

Existing data indicate that families, moderate size groups, residents and day visitors are the primary users of Curt Gowdy State Park. In the future, the park should continue to provide recreation opportunities for non-residents and overnight visitors.

A. Goal: Opportunities for day and overnight use should be provided for families and other groups.

- A. Goal: Opportunities for day and overnight use should be provided for families and other groups.

Objectives:

1. Increase and improve playground facilities.
2. Provide open-field play areas in park development.
3. Provide trails for access to specific destinations or to interpretive areas.
4. Provide picnic shelters to accommodate groups or family outings.

- B. Goal: Provide adequate access to new and existing facilities for special populations.

Objectives:

1. Conform with existing federal and state regulations and standards for handicapped visitor access in the development of ramps, paths, entrances, handrails, furniture and restrooms.
2. Provide access for special populations in such a manner they are not segregated from other recreationists.
3. Provide signs that direct handicapped visitors to special facilities.

- C. Goal: Provide greater awareness of available recreation resources for non-resident users at Curt Gowdy State Park.

Objectives:

1. Improve existing and provide additional signs to direct non-resident visitors to and from the park.

III. Facilities/Activities

Facilities should be clustered at central locations to create better accessibility, provide more open-space, improve maintenance efficiency and deter vandalism.

- A. Goal: Major use areas should be developed with facilities placed to serve these areas efficiently.

Objectives:

1. Organize camping into major developed areas.

2. Organize picnicking into major developed areas.
3. Locate restrooms in camping and picnic areas.
4. Locate potable water sources in conjunction with restrooms.
5. Locate playgrounds in conjunction with picnic and camping areas.

B. Goal: Adequate opportunities for camping and picnicking are to be provided at both Granite and Crystal Reservoirs.

Objectives:

1. Locate camping facilities in accessible areas which provide visitors with a feeling for the natural setting.
2. Provide an appropriate number of campsites in the park to accommodate visitor demands while remaining within the environmental constraints of the area.
3. Design camping areas to accommodate tents, campers and trailers.
4. Design campgrounds into loop systems such that closures can be made for maintenance and adequate separation can be achieved between areas.
5. Provide a water source within 300' of each campsite.
6. Place trash containers between every campsite.
7. Provide a potable water source within 300' of major picnic areas.
8. Provide one trash container for every three picnic sites.
9. Provide one ground level grill and one concrete picnic table for each picnic or campsite.

C. Goal: Efficient circulation throughout the park should be promoted.

1. Control vehicular traffic to designated roads and revegetate unneeded roads through seedbed preparation and seeding.
2. Balance the need for direct access with safety and aesthetic considerations in the design on roads.
3. Design circulation routes to accommodate over-size recreational vehicles and trailers.

4. Develop an efficient and uniform signing system to improve traffic flow within the park.
 5. Develop a foot trail system for those areas where motorized access is unacceptable.
 6. Design secondary park roads to be unpaved in order to reduce development and maintenance costs.
- D. Goal: Section 17 should be maintained in a natural state while providing opportunities for controlled visitor exposure to the area.

Objectives:

1. Provide a limited number of designated campsites and picnic sites in order to maintain the natural environment.
 2. Provide a road through Section 17 or along its periphery with adequate pull-offs to serve day and/or overnight use.
 3. Provide a picnic area(s) with sites equipped with picnic tables and grills.
 4. Provide a primitive camping area with sites designated for fire rings and site numbers.
 5. Provide a more developed camping area with sites equipped with picnic tables and grills.
- E. Goal: Facilities at the Hynds Lodge area and associated picnic grounds should be maintained and expanded.

Objectives:

1. Consider the development of an outdoor amphitheater in the vicinity of Hynds Lodge to accommodate groups using the area and park visitors.
 2. The existing trail should be expanded to provide access to a larger portion of the Hynds Lodge area.
- F. Goal: Existing potable water sources and dump station should be maintained.

Objective:

1. Provide improved signing for existing facilities.
- G. Goal: Playground facilities in the park should be increased and improved.

Objectives:

1. Provide at least one playground area in close proximity to each major picnic area.
 2. Provide adequate play opportunities for children of all ages.
- H. Goal: Boating and swimming activity should be controlled in both reservoirs.

Objectives:

1. Limit boat access to the boat ramp.
 2. Provide adequate signs to inform the public of a "no swimming" policy.
- I. Goal: Encouragement of off shore, boat and ice fishing should be continued.

Objectives:

1. Consider the provision of a fish cleaning station at each reservoir.
 2. Utilize picnic shelters as warming huts during the winter to encourage ice fishing in Granite Reservoir.
- J. Goal: Eliminate all activities incompatible with Wyoming Recreation Commission policy, eco-system management, or visitor safety.

Objectives:

1. Prohibit firearms and hunting within park boundaries.
 2. Prohibit all motorized off-road activity within park boundaries.
 3. Prohibit camping in non-designated areas.
- K. Goal: The existing archery range should be maintained unless safety hazards develop.

Objectives:

1. Provide signing for safety and informational reasons.
2. Maintain the archery range unless the proposed usage of the surrounding area is not compatible with that activity.

IV. Management

Efficiency in management is required in order to reduce operating costs, provide for the visitor's comfort and well being, improve visual quality of the park and to improve the image of the Wyoming Recreation Commission as manager of Curt Gowdy State Park.

- A. Goal: Provide adequate law enforcement within the park.

Objective:

1. Expand law enforcement capabilities of the Wyoming Recreation Commission or improve current agreement with the Laramie County Sheriff's Department and Wyoming Department of Game and Fish.

- B. Goal: Maximum effort should be provided within the park to ensure the safety of visitors.

Objectives:

1. Limit access to Crystal Reservoir Dam through fencing.
2. Construct railings on and adjacent to Granite Reservoir Dam to ensure visitor safety.
3. Provide directional and informational signing promoting visitor safety within the park.

- C. Goal: Maintenance and operation of the park facilities should be made more efficient whenever possible.

Objectives:

1. Hire additional maintenance personnel on both a full-time and part-time basis.
2. Utilize wood cleared during normal maintenance operations as free firewood for visitors.
3. Construct facilities with durable materials.
4. Utilize facility designs that discourage vandalism and provide for simple maintenance operations.
5. Repair all facilities promptly to discourage further vandalism.
6. Carry out normal maintenance operations including road improvements and garbage collection in a timely and efficient manner.

- D. Goal: The existing method of collecting campground fees at the park should be improved.

Objective:

1. Install fee drop-off box at each campground to reduce time spent collecting fees.

- E. Goal: Expand and improve park headquarters to serve as a visitor center.

1. Park headquarters should be further developed to enhance the experience of the growing number of visitors to the park.



Development Recommendations

DEVELOPMENT RECOMMENDATIONS

The development objectives provide direction and guidance for the formation of the Curt Gowdy Comprehensive Master Plan. The development recommendations are intended to serve the existing and future needs of the people who use the park while maintaining the qualities which make Curt Gowdy State Park an attractive recreational resource. This plan is organized into critical issues and area plans. The organizational format is as follows:

I. CRITICAL ISSUES FACING FUTURE DEVELOPMENT

- A. Indiscriminate use of park resources by motorized vehicles and individuals camping and picnicking in inappropriate locations.
- B. Inadequate staffing and funding will prevent proper operation and maintenance of the park.
- C. Acquiring a parcel of land in Section 22.
- D. Lack of signage, especially those designating handicap facilities.

II. AREA PLANS

- A. Park Headquarters/Hynds Lodge and Section 17.
- B. Granite Springs Reservoir.
- C. Crystal Lake Reservoir.

Conceptual site plans, at a scale of 1 inch equals 300 feet are presented for each of these three Area Plans.

I. CRITICAL ISSUES FACING FUTURE DEVELOPMENT

These problems and solutions are important in the implementation of the plan and should be considered in all aspects of the development process.

- A. Indiscriminate use of park resources by motorized vehicles and individuals camping and picnicking in inappropriate locations.

This indiscriminate use from free-form activities (activities that occur in an area where facilities for the activity are not provided) has caused undue erosion and destruction of fragile vegetation. Since the park cannot tolerate this type of use, free-form users should be encouraged to use the Forest Service lands that have areas designated for less structured use.

- B. Inadequate staffing and funding will prevent proper operation and maintenance of the park.

The existing staff and budget is not sufficient to properly operate and maintain proposed developments. Adequate staffing and funding must be provided in conjunction with proposed development to prevent deterioration of both facilities and the resource.

- C. Acquiring a parcel of land in Section 22.

The existing road between Granite and Crystal Reservoirs is located on private land. A goal of the Wyoming Recreation Commission should be to acquire that parcel of land in Section 22 which the road is now situated on. Acquisition of this land would make the park one contiguous land mass. Because the topography is relatively flat, it may be suitable for future development or expansion.

- D. Lack of signage, especially designating handicap facilities.

A comprehensive uniform signage system is definitely needed in the park. Such a signage system would direct visitors to the various recreational areas in the park and inform them of the appropriate use of certain areas. The signs will also designate facilities that are accessible to handicapped visitors. These facilities will be open to use by all visitors when the park is full, but handicapped visitors will have priority and can reserve a site through a reservation system.

II. AREA PLANS

Adequate law enforcement capabilities are needed in all of the following areas to assure the protection of visitors, facilities, vegetation and road systems.

- A. Park Headquarters/Hynds Lodge and Section 17.

Future development in the Park Headquarters/Hynds Lodge area should include a new entrance road and a small amphitheater constructed from native materials. The conceptual plan for Hynds Lodge and Section 17 shows the locations of the proposed entrance and amphitheater.

Curt Gowdy State Park currently lacks a focal point for visitor control and information distribution. As a result, it is difficult to control the number of people using the park and the dissemination of information to the visitors is limited. These problems will be corrected by construction of an entrance road directly across from the Park Headquarters. The present road into the Park Headquarters should then be closed. A loop or turnaround area will need to be provided to allow a smooth flow of traffic for the dump station area. The new road will provide easier traffic flow to park headquarters, emergency facilities and the dump station, improve control over use of Hynds Lodge and decrease traffic flow near the Superintendent's housing.

The immediate objective for development of Section 17 is to restrict all use of the area until protection of the resource can be adequately provided. Also, an archaeological survey of this area should be completed before any development occurs. This area contains scenic rocky ridges and dense vegetation which serves as a cover for the abundant wildlife. This terrain allows for a large number of camping and picnicking sites. The development plan of Section 17 consists of three components.

The first component involves monitoring for snow pack in the area along the eastern boundary of Section 17. This area will include the new main entrance road, and snow pack should be monitored to determine the ultimate feasibility of the suggested road change. Also, a trail system that connects camping and picnicking sites and provides access throughout the section needs to be designated and developed.

Component two involves restricting Section 17 to foot traffic until the Wyoming Recreation Commission has adequate law enforcement capabilities. The provision of adequate law enforcement would allow for the development of a loop road system to camping and picnicking facilities in the area while still protecting the integrity of the site. Twenty five primitive campsites (numbered post and fire pit), seven picnic sites, and a central firewood collection area are proposed in Section 17.

Component three should be implemented after adequate law enforcement capabilities are provided to keep vehicular traffic on designated roads. This component involves moving the main entrance road to the park from its present location in the Granite Springs area to Section 17. The road would run south from the Park Headquarters along the eastern edge of Section 17 and exit the site at the current archery range parking lot. Moving the location of the main entrance road would allow increased control of visitor access, improve surveillance of visitor activities, provide for an improved method of disseminating information and provides for easier implementation of reservation and fee collecting systems. The road will also integrate the park as one unit, and will provide a particularly scenic view of Section 17 as well as Granite Springs Reservoir.

Section 17 offers a contrast to the predominantly water-based recreation activities of the park and adds to the diversity of experiences available. The additional campsites and picnic sites proposed for the section will further help to satisfy existing and future demands for these facilities.

B. Granite Springs Reservoir.

1. North Shore

The development for this area includes restructuring and rehabilitation of the existing facilities. The area is recommended for day use/picnicking only. The picnic sites are clustered around four loop roads

branching off from one main road. Each site includes one table, one fire pit, with access to water, restrooms, and trash disposal. The first loop has seven sites, the second loop has five sites, the third loop has three sites, and the fourth loop has four sites. The Granite Springs Reservoir conceptual map illustrates the location of each loop road and each individual site. Many secondary roads now exist on the north shore that need to be closed and reclaimed through regrading and reseeding. New plantings and their locations will be distinguished from existing vegetation. Near the picnic sites, an unstructured play/ball-field and a playground are planned for use by children and groups. The boat ramp is accessed through the day use area on the west shore of the reservoir. The existing boat ramp needs to be rebuilt and extended to make it usable at low water levels. The boat ramp parking area should also be enlarged and parking spots designated to accommodate more cars and trailers.

The day use/picnic area is situated in open and rolling topography on the edge of the reservoir. Development of the north shore is designed to take advantage of existing restrooms and water facilities, as well as existing picnic sites. Because an excess number of restrooms exist in this area, the unneeded ones should be removed and stored for relocation on newly developed areas within the park.

More water spigots need to be added and some of the existing tables and grills need to be upgraded or replaced.

2. South Shore

The major development features of the south shore are the redesign of existing sites for camping and possible expansion of camping facilities eastward and southward across the road. The camping area would consist of a group site (two 10 foot tables, two fire pits, and two large tent pads) and 49 individual sites (one table, one fire pit and one tent pad) clustered around central restrooms, water, and trash disposal facilities. The campground is designed to take advantage of existing trees and topography. More campsites could be developed, but this would require locating facilities at undesirable sites away from trees. The southeast shore of Granite Springs Reservoir, near the dam, could be used for both camping and picnicking by groups if needed. Groups would be able to reserve sites through a reservation system, which would force individual campers to utilize individual sites.

3. Archery Range

The only proposed development for the archery range is expansion of the parking and turnaround area, and the addition of informational signs. A warning system should also be added to notify users others are on the course.

C. Crystal Lake Reservoir.

A boat ramp is not recommended because the surface acreage of the reservoir is too small to accommodate large motorized boats. Crystal Lake Reservoir should be restricted to small motorized or non-motorized boats.

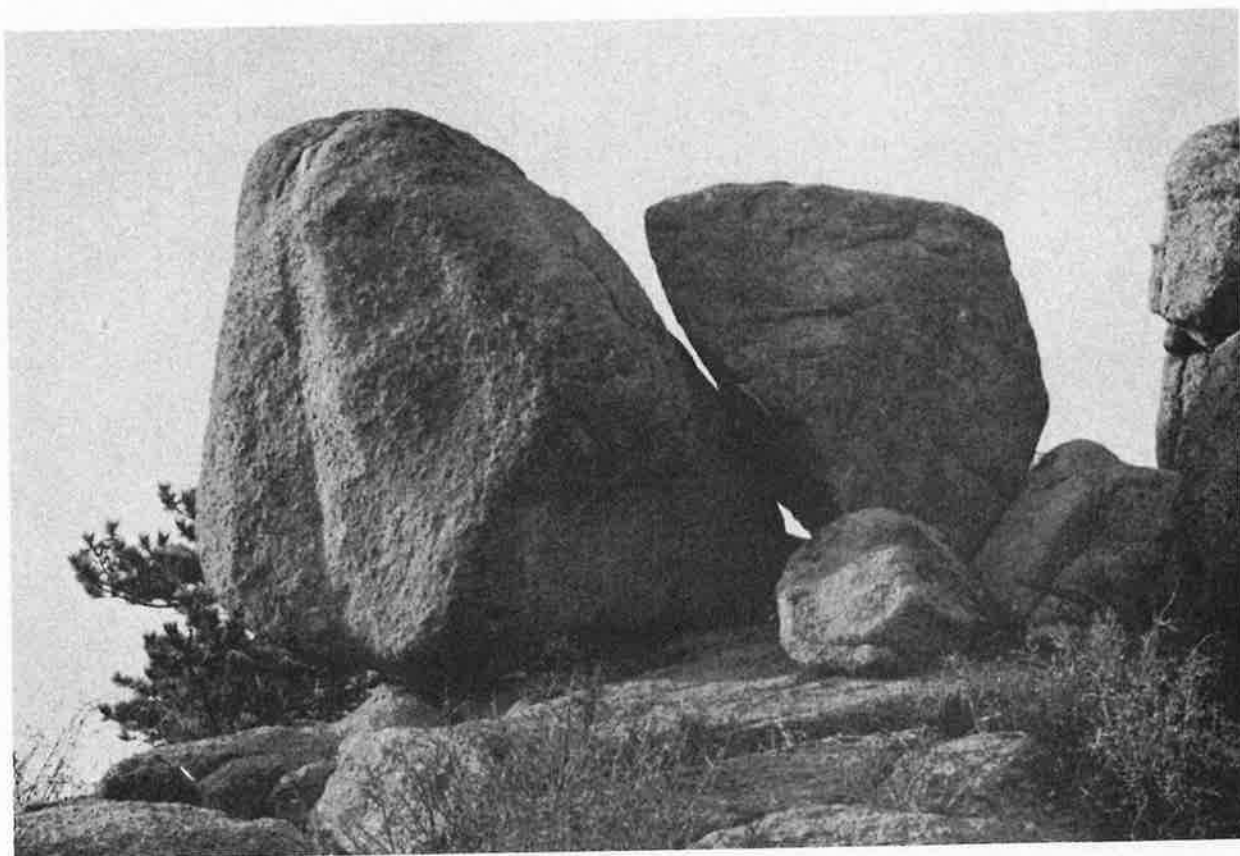
1. Northwest Shore

The northwest shore of Crystal Lake Reservoir contains the most open space and has the greatest potential for development of camping facilities. However, this area has received extensive off-road vehicle use which has caused erosion and irreversible damage to the present vegetation. Extensive revegetation is needed to return the area to an acceptable condition. Also, existing secondary roads need to be closed off and reseeded.

There are eleven individual campsites proposed which will be accessible by a loop road system.

2. South Shore

Very little land acreage exists within the park on the south shore of Crystal Lake Reservoir; therefore, the area should be restricted to limited camping and picnicking. Additional picnic sites need to be added and the existing sites upgraded. A total of ten campsites will be provided in the area. The picnic and campsites should be accessible to water, restrooms, and trash disposal facilities. Parts of the area should be revegetated to help curb existing erosion.



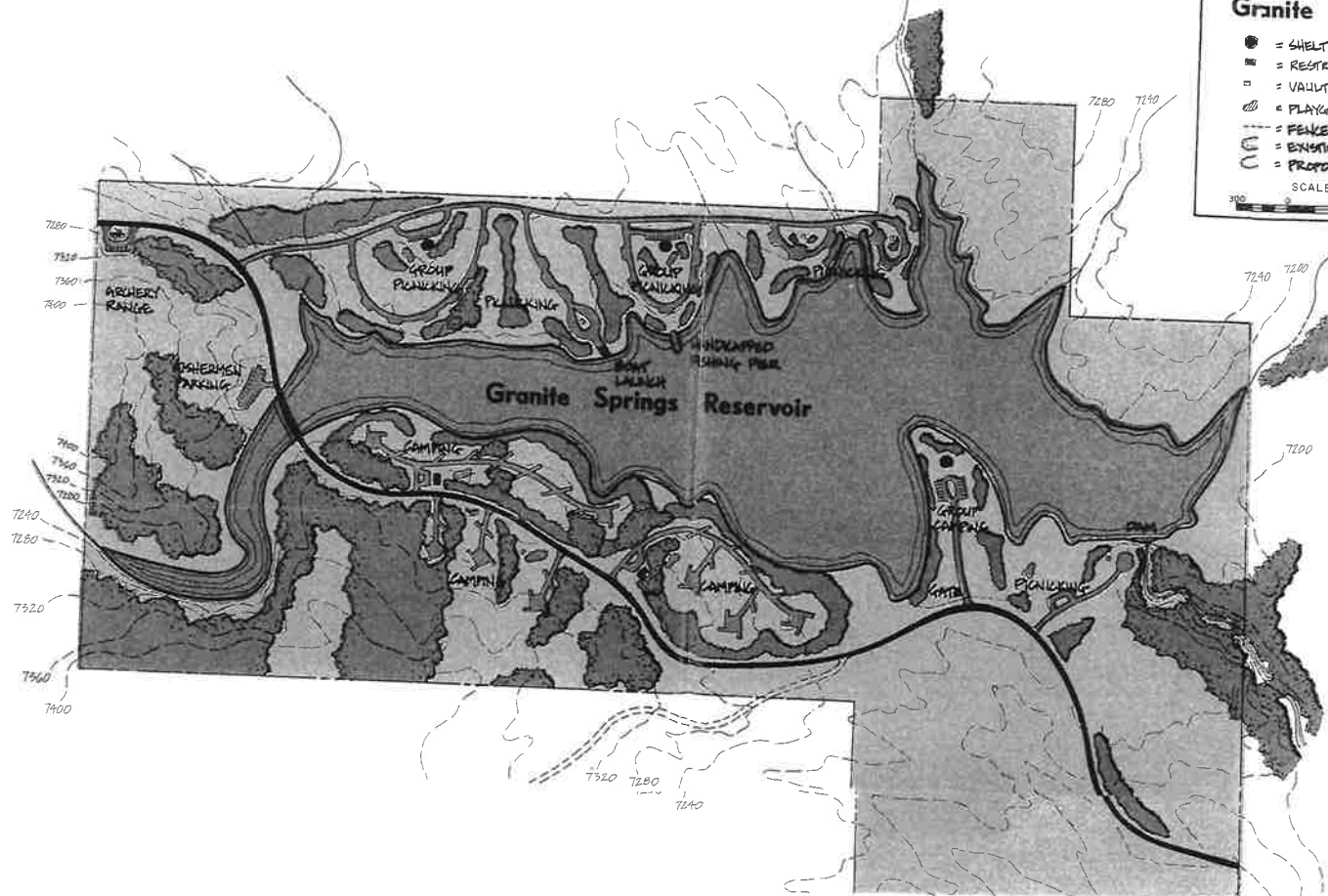
Conceptual Site Plans

CONCEPTUAL SITE PLAN Granite Springs Reservoir

- = SHELTER / RESTROOMS
- = RESTROOM
- = VAULT TOILET
- ⊙ = PLAYGROUND
- = FENCE
- = EXISTING VEGETATION
- = PROPOSED VEGETATION

SCALE

300 600 900 Feet



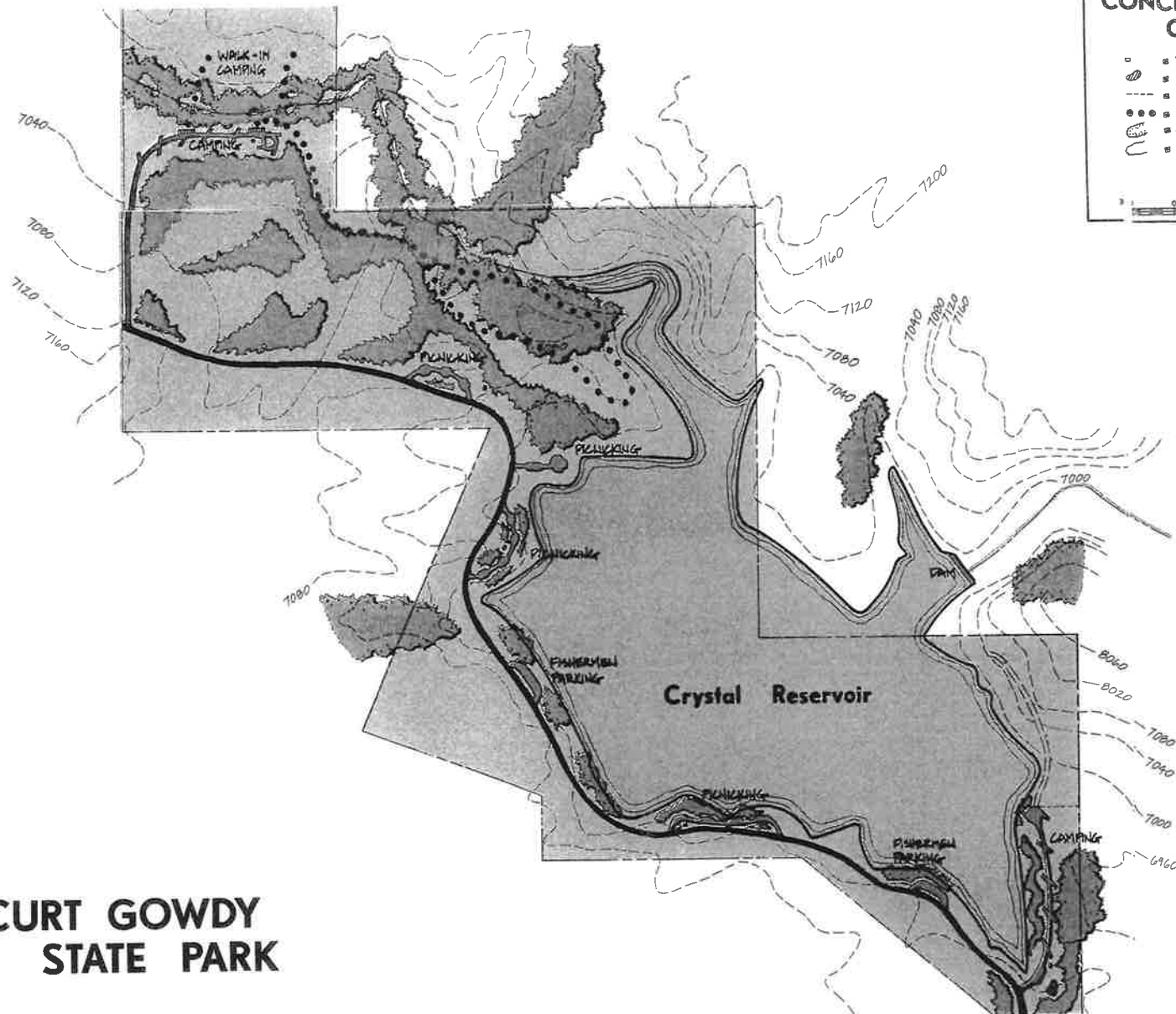
CONCEPTUAL SITE PLAN Crystal Reservoir

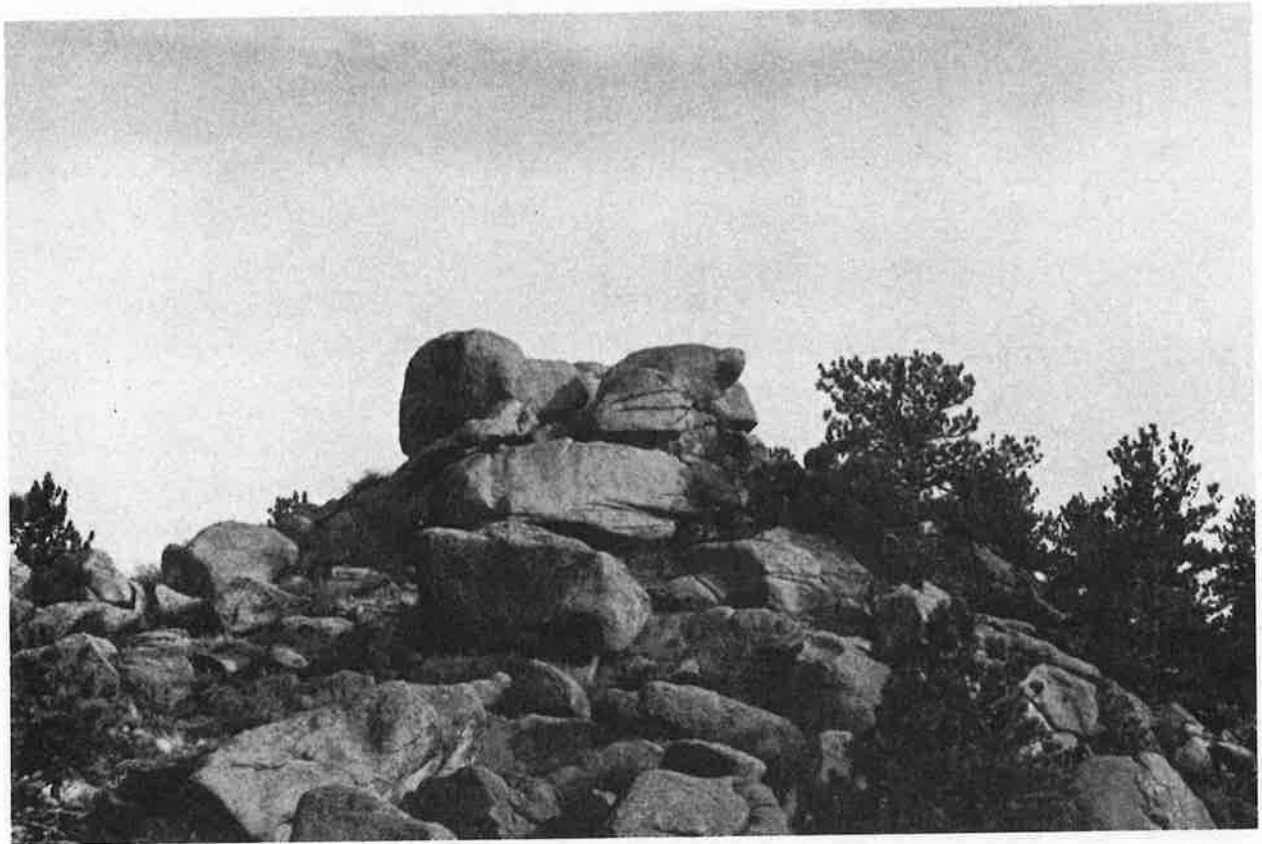
- VAULT TOILET
- PLAYGROUND
- - - FENCE
- ... HIKING TRAIL
- Existing Vegetation
- Proposed Vegetation

SCALE
0 100 200 Feet



**CURT GOWDY
STATE PARK**





Cost Estimates

CURT GOWDY STATE PARK

1982 Unit Cost and Source

Source	Item	Unit Cost
WRC	Concrete Boat Ramp (20' x 200')	\$ 150.00 LF
WRC	Asphalt Road (2-way)	20.00 LF
WRC	Gravel Road (2-way)	11.00 LF
WRC	Gravel Road (1-way)	6.00 LF
WRC	Gravel Parking Lot	1.00 SF
KH	Concrete Picnic Table (10' x 6')	500.00 EA
WRC	Wood Picnic Table (10' x 6')	200.00 EA
EKW	Fire-rings	150.00 EA
WRC	Restroom (Vault Type)	15,000.00 EA
WRC	Handicap Restroom (Vault Type)	18,000.00 EA
WRC	Restroom (Flush Type)	70.00 SF
KH	Numbered Wood Post	10.00 EA
WRC	Directional Wood Signs	20.00 EA
WRC	Informational Signs	1,500.00 EA
MDNR	Group Shelter	20,000.00 EA
WRC	Hiking Trails	2.00 LF
KH	Children's Playground (small)	15,000.00 EA
WRC	Footbridge	30.00 LF
WRC	Tent Pad	1.00 SF
WRC	Self-Registration Canisters	21.00 EA
KH	Trash Cans	13.00 EA
WRC	Restroom Removal	5,000.00 EA
KH	Drilling Water Well	30.00 LF
KH	Water Hydrant	200.00 EA
WRC	Waterline Installation	5.00 LF
WRC	Hand Pump	300.00 EA
WRC*	Site Preparation	1,800.00 Acre
WRC	Seeding	600.00 Acre
WRC	Fence (4 barbed wire)	.80 LF
WRC	Gate (20')	500.00 EA
UW	Boulder Placement	50.00 HR
WRC	Archaeological Survey	3,000.00 EA
UW**	Amphitheater	15,000.00 EA

* Site preparation costs vary according to terrain, etc.

** There was no exact cost estimate available.

KH - Keyhole State Park Master Plan
WRC - Wyoming Recreation Commission
EKW - Edness Kimball Wilkins State Park Master Plan
MDNR - Michigan Department of Natural Resources
UW - University of Wyoming

CURT GOWDY STATE PARK

Estimated Development Cost Detail 1982

<u>Location and Description</u>	<u>Direct Cost</u>
1) Park Headquarters/Hynds Lodge	\$
6 Picnicking Sites	
6 Concrete Picnic Tables	3,000.00
6 Fire-rings	900.00
3 Trash Cans	39.00
15,000 LF of Hiking Trails	30,000.00
1-6' Footbridge	180.00
Gravel Parking Areas	
2-10 Car Parking Areas (100' x 200' @)	40,000.00
1,200 LF of Waterline	6,000.00
2 Water Hydrants	400.00
4 Directional Signs	80.00
1 Gate (20')	500.00
3,060 SF Seeding	42.00
14,700 LF of Gravel Road (2-way)	161,700.00
Amphitheater	<u>15,000.00</u>
	Total \$ 257,841.00

2) Section 17

16 Picnicking Sites	
16 Concrete Picnic Tables	8,000.00
16 Fire-rings	2,400.00
8 Trash Cans	104.00
1 Vault Type Restroom	15,000.00
52 Primitive Camping Sites	
52 Numbered Wood Posts	520.00
52 Fire-rings	7,800.00
26 Trash Cans	338.00
1,800 LF of Waterline	9,000.00
1 Water Hydrant	200.00
48,000 LF of Hiking Trails	96,000.00
1-6' Footbridge	180.00

Barriers	
6,000 LF of Fence (4 barbed wire)	\$ 4,800.00
227.5 HRS of Boulder Placement	11,375.00
1 Informational Sign	1,500.00
4 Directional Signs	80.00
20,010 SF Seeding	276.00
33,600 LF of Gravel Road (2-way)	369,600.00
4,200 LF of Asphalt Road (2-way)	84,000.00
Archaeological Survey	<u>3,000.00</u>
Total	\$ 614,173.00

3) Granite Springs Reservoir

a) North Shore

46 Picnicking Sites	
46 Concrete Picnic Tables	23,000.00
46 Fire-rings	6,900.00
23 Trash Cans	299.00
4 Vault Type Restrooms	60,000.00
2 Group Picnicking Sites	
4 Wood Picnic Tables	800.00
2 Fire-rings	300.00
4 Trash Cans	52.00
2 Shelters	40,000.00
2 Flush Type Restrooms	84,000.00
Gravel Parking Areas	
2-10 Car Parking Areas (100' x 200' @)	40,000.00
1-6 Car Parking Area (60' x 120')	7,200.00
5,700 LF of Waterline	28,500.00
20 Water Hydrants	4,000.00
Barrier	
1,800 LF of Fence (4 barbed wire)	1,440.00
6 Directional Signs	120.00
15,690 SF Seeding	216.00
2 Playgrounds (small)	30,000.00
Concrete Boat Ramp (200')	30,000.00
8,550 LF of Gravel Road (2-way)	94,050.00
1,800 LF of Asphalt Road (2-way)	<u>36,000.00</u>

Sub-Total \$ 486,877.00

b) South Shore

3 Picnicking Sites	
3 Concrete Picnic Tables	\$ 1,500.00
3 Fire-rings	450.00
1 Trash Can	13.00
1 Vault Type Restroom	15,000.00
49 Camping Sites	
49 Concrete Picnic Tables	24,500.00
49 Fire-rings	7,350.00
49 Tent Pads (24' x 24' @)	28,224.00
21 Trash Cans	273.00
2 Vault Type Restrooms	30,000.00
1 Group Camping Site	
2 Wood Picnic Tables	400.00
2 Fire-rings	300.00
2 Tent Pads (30' x 30' @)	1,800.00
2 Trash Cans	26.00
1 Shelter	20,000.00
3 Flush Type Restrooms	126,000.00
Gravel Parking Areas	
1-20 Car Parking Area (200' x 400')	80,000.00
2-5 Car Parking Areas (50' x 100' @)	10,000.00
10,200 LF of Waterline	51,000.00
13 Water Hydrants	2,600.00
Barriers	
5,000 LF of Fence (4 barbed wire)	4,000.00
1 Gate (20')	500.00
8 Directional Signs	160.00
14,490 SF of Seeding	200.00
3 Playgrounds	45,000.00
5,250 LF of Gravel Road (2-way)	57,750.00
6,900 LF of Asphalt Road (2-way)	138,000.00
Archery Range	
3 Warning Signs (1' x 2' @)	60.00
1 Directional Sign (4' x 6')	240.00
Sub-Total	\$ 645,346.00

4) Crystal Lake Reservoir

a) North Shore

38 Picnicking Sites	
38 Concrete Picnic Tables	19,000.00
38 Fire-rings	5,700.00
19 Trash Cans	247.00
3 Vault Type Restrooms	45,000.00

11 Camping Sites	
11 Concrete Picnic Tables	\$ 5,500.00
11 Fire-rings	1,650.00
11 Tent Pads (24' x 24' @)	6,336.00
6 Trash Cans	78.00
Gravel Parking Areas	
2-6 Car Parking Areas (60' x 120' @)	14,400.00
5,400 LF of Waterline	27,000.00
12 Water Hydrants	2,400.00
2 Water Wells and Pumps (300' @)	18,600.00
6,300 LF of Hiking Trails	12,600.00
2-6' Footbridges	360.00
Barriers	
3,600 LF of Fence (4 barbed wire)	2,880.00
29.5 HRS of Boulder Placement	1,475.00
4 Directional Signs	80.00
27,600 SF of Seeding	380.00
2,850 LF of Gravel Road (2-way)	31,350.00
3,600 LF of Asphalt Road (2-way)	72,000.00
Sub-Total	\$ 267,036.00

b) South Shore

8 Picnicking Sites	
8 Concrete Picnic Tables	4,000.00
8 Fire-rings	1,200.00
4 Trash Cans	52.00
2 Vault Type Restrooms	30,000.00
10 Camping Sites	
10 Concrete Picnic Tables	5,000.00
10 Fire-rings	1,500.00
10 Tent Pads (24' x 24')	5,760.00
5 Trash Cans	65.00
Gravel Parking Areas	
2-10 Car Parking Areas (100' x 200' @)	40,000.00
3,900 LF Waterline	19,500.00
4 Water Hydrants	800.00
1 Water Well and Pump (300')	9,300.00
Barriers	
1,600 LF of Fence (4 barbed wire)	1,280.00
4 Directional Signs	80.00
6,510 SF of Seeding	90.00
1 Playground (small)	15,000.00
2,400 LF of Gravel Road (2-way)	26,400.00
5,100 LF of Asphalt Road (2-way)	102,000.00
Sub-Total	\$ 262,027.00

CURT GOWDY STATE PARK

Estimated Development Cost Totals by Area 1982

Location	Direct Cost	Total Cost
1) Park Headquarters/Hynds Lodge	\$ 257,841.00	\$ 257,841.00
2) Section 17	\$ 614,173.00	\$ 614,173.00
3) Granite Springs Reservoir		
North Shore	\$ 486,877.00	
South Shore	\$ 645,346.00	\$ 1,132,223.00
4) Crystal Lake Reservoir		
North Shore	\$ 267,036.00	
South Shore	\$ 262,027.00	
Total 1982 Cost		\$ 529,063.00
		\$ 2,533,300.00

CURT GOWDY STATE PARK

Total Estimated Development Cost for 1982

1) Park Headquarters/Hynds Lodge	\$ 257,841.00	\$ 317,660.00
2) Section 17	614,173.00	756,661.00
3) Granite Springs Reservoir	1,132,223.00	1,394,899.00
4) Crystal Lake Reservoir	529,063.00	651,806.00
Total 1982 Cost	\$ 2,533,300.00	\$ 3,121,026.00 (A)
	\$ 2,533,300.00	1982 Direct Cost, May 1982
	303,996.00	12% Inflation (B)
	\$ 2,837,296.00	
	283,730.00	10% Landscape Architect
	\$ 3,121,026.00	TOTAL COST DECEMBER, 1982

(A) Include Direct Cost, Inflation, Profit, Survey Costs and Landscape Architect Fees

(B) Estimated Inflation, May, 1982, to December, 1982

PHASING COSTS

Phase I (1984-86)

Development Areas:

A. GRANITE SPRINGS RESERVOIR

1. Picnic and Camp Sites
 2. Playgrounds
 3. Unstructure Ballfield/Play Area
 4. Restrooms
 5. Re-Vegetation
 6. Water
 7. Boat Ramp
 8. Archery Range
- \$ 975,017.00

B. CRYSTAL RESERVOIR

1. Fence Around Dam
 2. Water
 3. Access Road
 4. Re-Vegetation
 5. Restrooms
- \$ 139,153.00

C. PARK HEADQUARTERS - HYNDS LODGE

1. New Entrance
- \$ 318,121.00

D. SECTION 17

1. Trail System
 2. Access to Trails
- \$ 151,476.00

TOTAL \$1,583,767.00

43% of Total Park Cost

PHASING COSTS

Phase II (1986-88)

Development Areas:

A. GRANITE SPRINGS RESERVOIR

1. Road Improvement \$ 237,187.00

B. CRYSTAL RESERVOIR

1. Picnic Sites
2. Camp Sites
3. Road Improvements \$ 410,277.77

C. PARK HEADQUARTERS - HYNDS LODGE

1. No Improvements -0-

D. SECTION 17

1. Camp Sites
2. Picnic Sites
3. Water
4. Restrooms
5. New Road \$ 644,215.00

TOTAL \$1,291,679.00

35% of Total Park Cost

PHASING COSTS

Phase III (1988-90)

Development Areas:

A. GRANITE SPRINGS RESERVOIR

- 1. Main Road Removal
 - 2. Road Paving
 - 3. Signing
- \$ 315,375.00

B. CRYSTAL RESERVOIR

- 1. Road Paving
- \$ 315,120.00

C. PARK HEADQUARTERS - HYNDS LODGE

- 1. Amphitheater
- \$ 27,150.00

D. SECTION 17

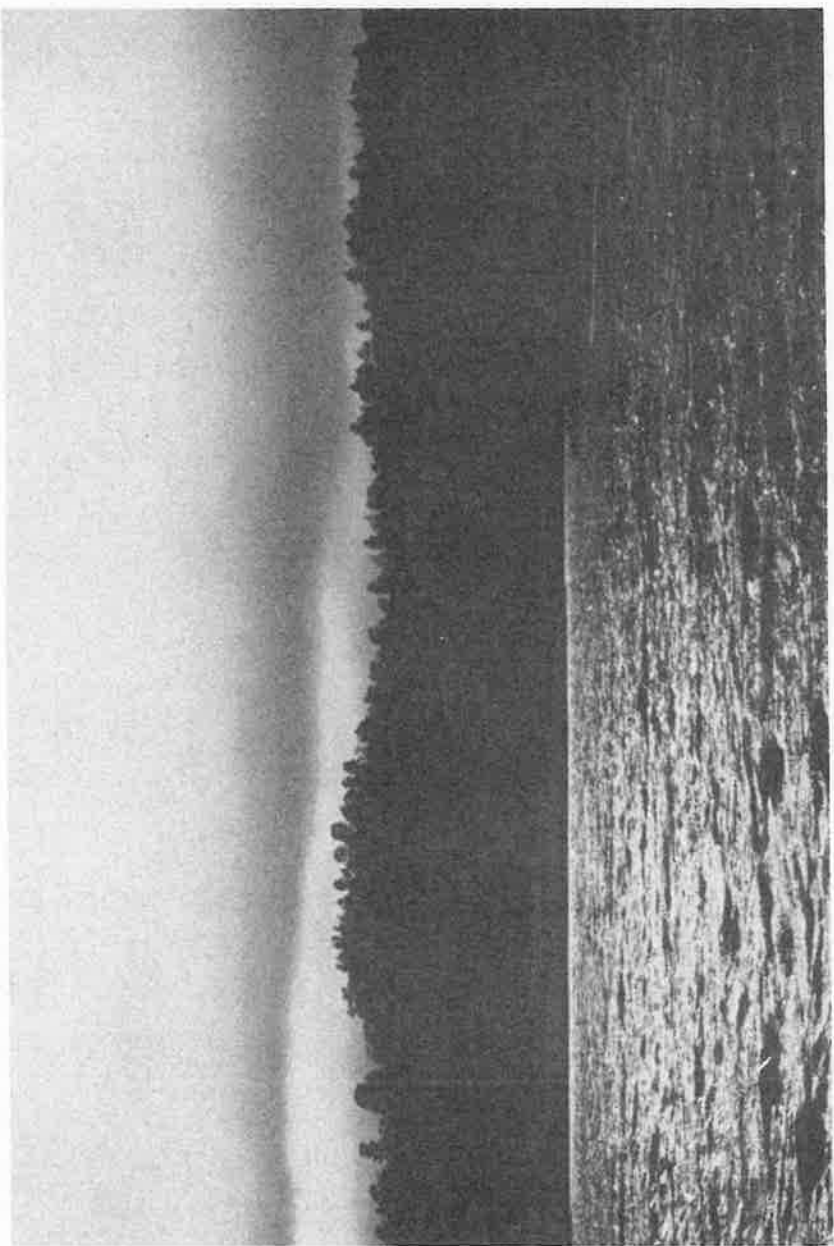
- 1. Road Paving
 - 2. Fee Collection System
 - 3. Information Signs System
- \$ 154,899.00

TOTAL \$ 812,544.00

22% of Total Park Cost

*Total Project Cost \$3,687,990.00

*Adjusted for 12% yearly inflation rate over entire project length.



Phasing

DEVELOPMENT PHASING AND RATIONALE

Development Area	Phase I	Priority Rationale
Granite Reservoir	1984-1986	Granite Reservoir was determined to have the greatest need for development and improvement due to the high recreational use of the area and the major cost of proposed improvements. Existing camping and picnicking sites need to be improved, and new sites constructed. Wells for water should be drilled, and restrooms relocated to accommodate these sites. The boat ramp must be replaced and extended, playgrounds relocated and an unstructured combination ballfield/play area developed. Re-vegetation will enhance the scenery, and reduce off-road driving. Signing and fencing around the archery range should help prevent accidents and increase use of the area.
<ul style="list-style-type: none"> 1) Picnic Sites 2) Camp Sites 3) Boat Ramp 4) Playground Area 5) Water Wells 6) Re-vegetation 7) Restrooms 8) Archery Range 9) North Access Road 10) Unstructured ballfield/play area 11) Off-Road Driving 		
Crystal Reservoir		Unsafe conditions necessitate restricting access to the Crystal Reservoir dam. Relocation of restrooms and the addition of water sources are needed to accommodate future expansion. Re-vegetation will increase the visual aesthetics of the area and reduce off-road driving by better delineating designated roads. An agreement should be reached between the Wyoming Recreation Commission and the Laramie County Road and Bridge Department for maintenance and improvement of the Granite/Crystal road.
<ul style="list-style-type: none"> 1) Dam 2) Water 3) Access Road 4) Re-vegetation 5) Restrooms 		
Park Headquarters and Hynds Lodge		The new entrance road will improve access to Park Headquarters, emergency facilities, and dump station. It will also improve surveillance for users of the Hynds Lodge area.
<ul style="list-style-type: none"> 1) New Entrance Road 		
Section 17		A foot trail system will be developed in Section 17, in order to open the area to visitors while still protecting the natural integrity of the site. Access will be provided by a fence stile which will prevent vehicular access onto the site.
<ul style="list-style-type: none"> 1) Trail System 2) Access to Trails 		

Development Area	Phase II	Priority Rationale
Granite Reservoir	1986-1988	The main road through the park will be widened and graded to accommodate paving.
1) Road Improvement		
Crystal Reservoir		Existing picnicking and camping sites will be re-structured and rehabilitated, and new sites will also be developed. The main road will be widened and graded to accommodate paving.
1) Picnic Sites		
2) Camp Sites		
3) Road Improvements		
Park Headquarters and Hynds Lodge		No development or improvements are scheduled in Phase II.
Section 17		Picnic sites and primitive campsites will be constructed to help meet the increasing demand. A gravel road will be constructed along the eastern border of Section 17, directly across from park headquarters. Water sources and sanitation facilities will be provided for picnickers and campers.
1) Camp Sites		
2) Picnic Sites		
3) Water		
4) Restrooms		
5) Road		

Development Area	Phase III	Priority Rationale
Granite Reservoir	1988-1990	Once the new access road through Section 17 is opened, the old access road into Granite Reservoir will be closed and removed. The major road through the park will then be paved. Signs will be installed to provide direction to interpretive information.
1) Road Paving		
2) Road Removal		
3) Signage		
Crystal Reservoir		The only development in the third phase will be the paving of the major road through the area.
1) Road Paving		
Park Headquarters and Hynds Lodge		A small amphitheater will be constructed from native materials for use by campers and visitors.
1) Amphitheater		

Development AreaPhase IIIPriority Rationale

Section 17

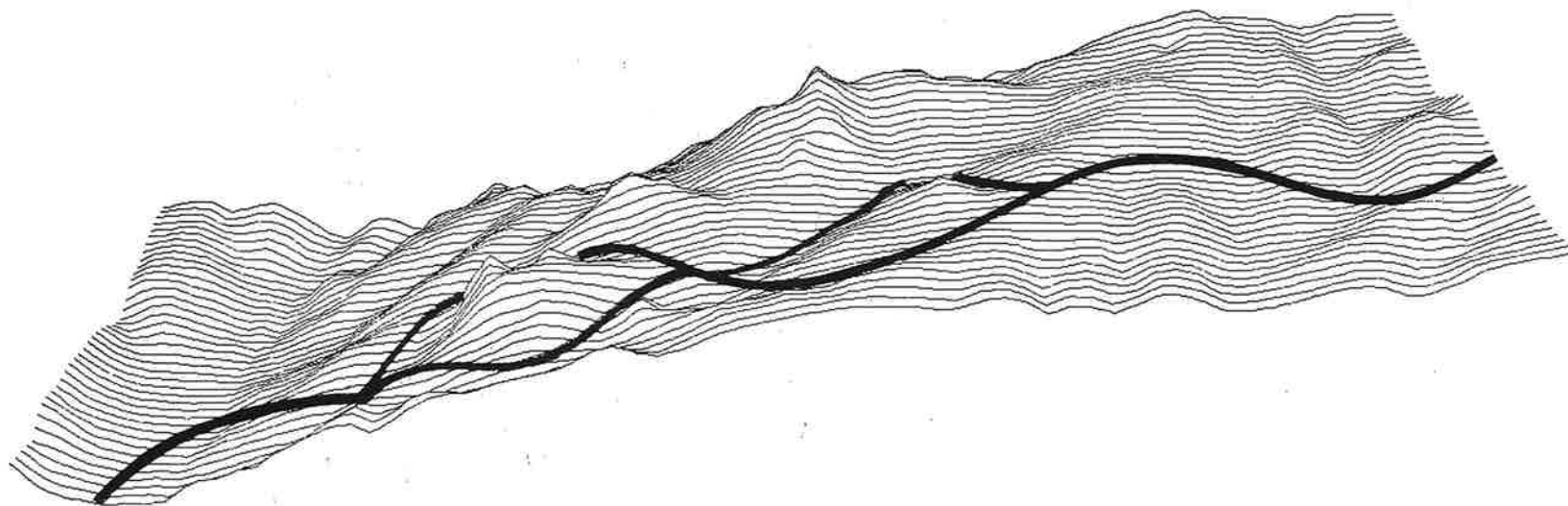
- 1) Road Paving
- 2) Fee Collection System
- 3) Information System

The new access road through the area will be paved and informational signs and a fee collection box will be located at the park entrance.

SECTION 17

CORRIDOR OF PROPOSED ENTRANCE ROAD





SECTION 17

CORRIDOR OF PROPOSED ENTRANCE ROAD



Appendixes

APPENDIX A

PUBLIC MEETING

A public meeting was held in Cheyenne on March 22, 1982. The purpose of this meeting was to obtain guidance in the development of the plan and to identify facility needs. A variety of facility needs and concerns were identified at the meeting by the general public. These suggestions and concerns included:

- * Road Improvements. The main entrance road into the park should be repaved.
- * Law Enforcement. Inadequate law enforcement was identified as a serious problem.
- * Play/Ball Field. The lack of a designated area for groups to participate in organized games was identified.
- * Archery Range. Warning signs and an additional restroom facility for the archery range was identified as a problem. A member from a Cheyenne archery club pointed out that warning signs and another restroom facility on the course are needed.
- * Secondary Roads. The need to close and revegetate roads created by indiscriminate use of the resource was a major concern.
- * Boating Restrictions. It was suggested a motor restriction be placed on Crystal Reservoir by the Wyoming Game and Fish Department due to the small size and heavy use which occurs there.
- * Russian Thistle. Concerns were expressed regarding the lack of a recognized weed control program within the park; specifically for the noxious weed, Russian Thistle.

APPENDIX B

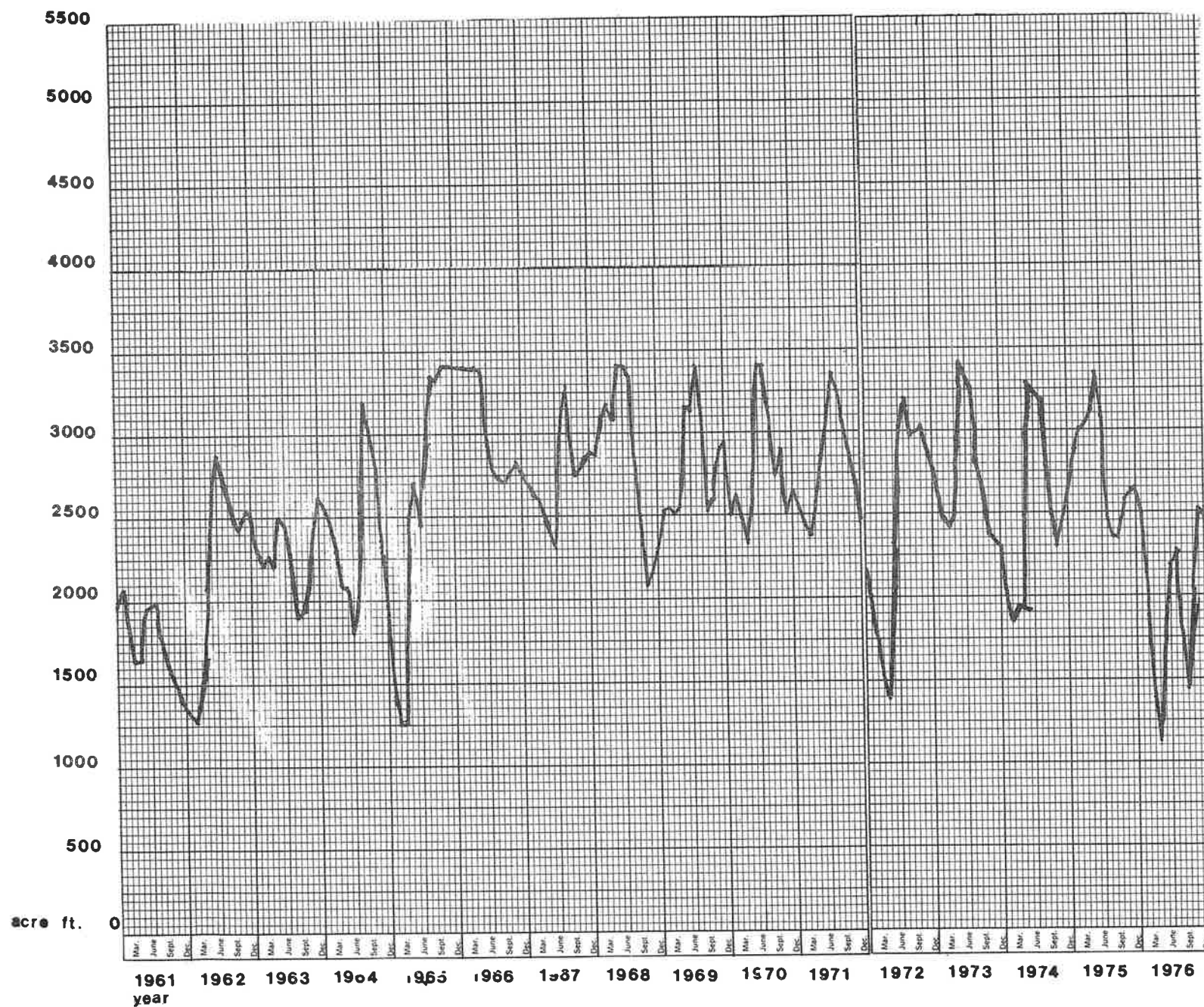
Granite Springs Reservoir

(FT) Elevation	(Acres) Area	(AF) Capacity
7112	0	0
7115	2	2
7120	4	30
7125	5	40
7130	7	60
7135	14	115
7140	35	240
7145	46	420
7150	60	740
7155	69	1150
7160	84	1470
7165	100	1930
7170	113	2500
7175	131	3100
7180	149	3800
7185	169	4550
7190	188	5321

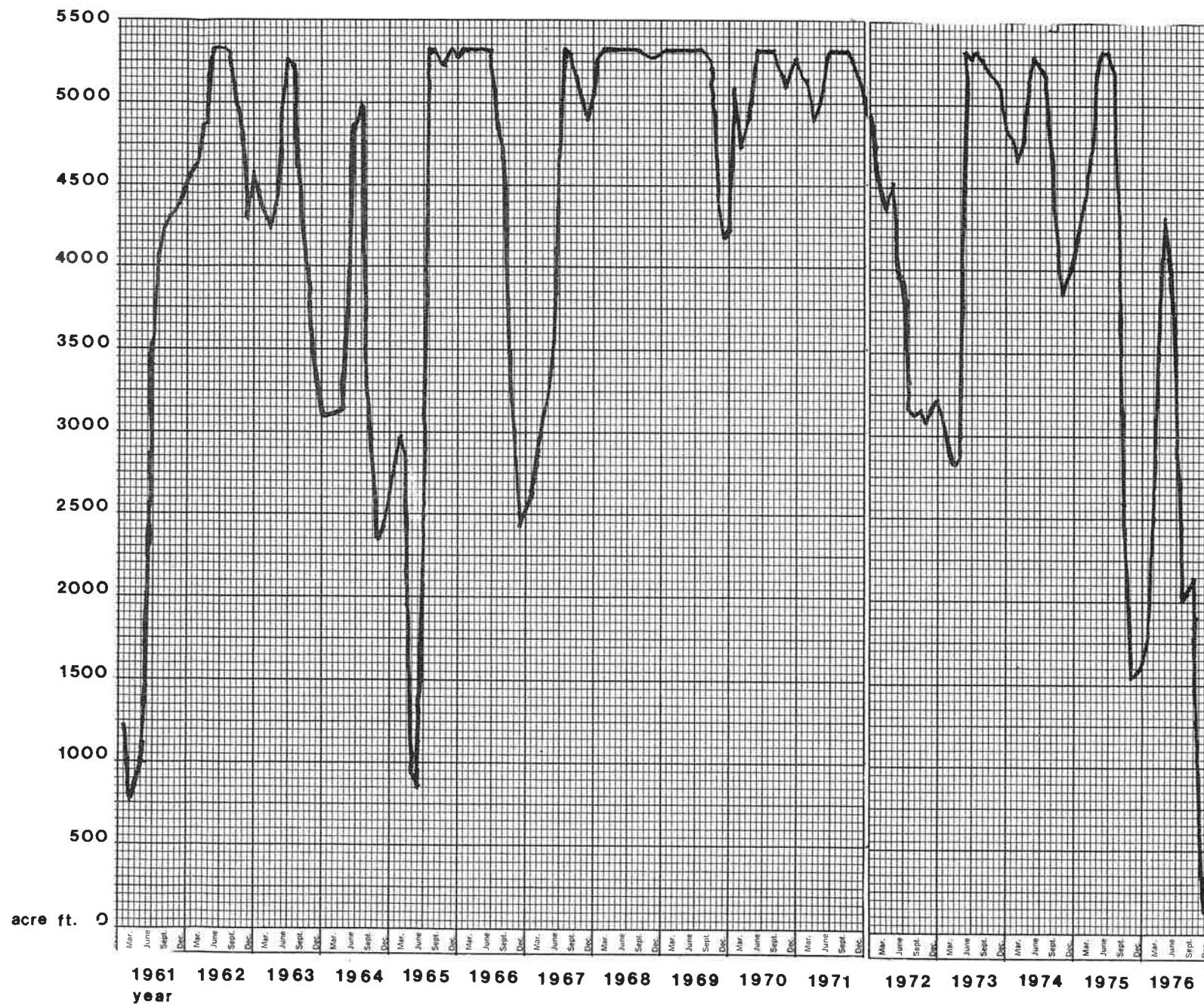
Crystal Lake Reservoir

(FT) Elevation	(Acres) Area	(AF) Capacity
6888	0	0
6890	5	3
6900	17	120
6910	34	380
6920	50	800
6930	70	1360
6940	87	2180
6950	109	3150
6954	122	3620

APPENDIX C
Crystal Lake Reservoir
end of month storage



APPENDIX C
Granite Springs Reservoir
(end of month storage)



APPENDIX E

THREE DIMENSIONAL PERSPECTIVES OF PORTIONS OF CURT GOWDY STATE PARK

The following maps were generated by the computer to show topographic relief in three dimensions. The major portion of this mapping project involved the development of perspective maps for the corridor of the proposed entrance road through Section 17. The maps were used as a tool in locating the best route for the new entrance road. Several perspective maps were also developed for the archery range within the park.

The input data for the perspective maps of Section 17 consisted of a matrix of 1850 individual points (74 rows and 25 columns). The elevation data were obtained from a topographic map of Section 17 depicting two foot contour intervals at a scale of one inch equals 100 feet. This matrix corresponds to a rectangle of 3650 feet long by 1200 feet wide located along the northeastern edge of Section 17. Elevations were recorded every 50 feet. Four perspective maps of the corridor of the proposed entrance road were produced, one looking to the north, one to the south, one to the east, and one to the west.

The input data for the perspective maps of the archery range consisted of a matrix of 81 individual elevation points (9 rows and 9 columns) obtained from the United States Geological Survey Hecla 7.5 minute quadrangle (scale - one inch equals 2000 feet; contour interval - 20 feet). This matrix corresponds to a 2000 foot by 2000 foot square with elevations recorded every 250 feet. Six perspective maps of the archery range were produced from various directions.

In order to better distinguish between steeply sloping areas and more gently sloping areas, the vertical relief of both sets of maps has been exaggerated. Vertical relief is depicted three times greater than it actually is.

Both sets of perspective maps were developed through use of the PERSPCT computer mapping program in cooperation with the Geography Department at the University of Wyoming in Laramie.

Examples of the three dimensional topographical perspective maps have been included in these appendices. The two maps show the proposed road through Section 17 from the east looking west and from the south looking north.

APPENDIX D

Wells

Curt Gowdy Headquarters #1 (NE $\frac{1}{4}$, SE $\frac{1}{4}$; SW $\frac{1}{4}$, SE $\frac{1}{4}$; SE $\frac{1}{4}$, SW $\frac{1}{4}$ of Section 8)

1. Used for headquarters building, recreational drinking water and to supply recreation vehicles at two hydrants and shop.
2. Also used for five mobile home lots, two hydrants and shop.

Well Depth - 42 feet

Gallons Per Minute - 25

Hynds Lodge #2 (NW $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 8)

1. Used for restrooms and drinking water at Hynds Lodge.

Well Depth - 50 feet

Gallons Per Minute - 25

Gowdy North #1 (NW $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 16)

1. Water is used for recreational purposes in the park by means of a hand pump.

Well Depth - 114 feet

Gallons Per Minute - 25

Gowdy #1 (NW $\frac{1}{4}$, SW $\frac{1}{4}$ of Section 22)

1. Water is used for recreational purposes in the park by means of a hand pump.

Well Depth - 140 feet

Gallons Per Minute - 20

Hynds #1 (NE $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 8) Non-Operational

Well Depth - 40 feet

Gallons Per Minute - 25

Gowdy North #2 (NW $\frac{1}{4}$, SE $\frac{1}{4}$ of Section 16) Non-Operational

Well Depth - 100 feet

Gallons Per Minute - 25