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UNITED STATE DEPARTMENT OF THE INTERIOS

THE CURECANTI UNIT OF THE COLORADO RIVER STORAGE PROJECT

COLORADO

RECREATION POTENTIAL
(A Professional Analysis and Report)

United States
Department of the Interior
National Park Service

July 1965



Vista of Blue Mesa reservoir basin eastward from new Highway 50 crossing over Gunnison River.

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FOREWORD

The Curecanti Unit of the Colorado River Storage Project will consist of a chain of three reservoirs on the Gunnison River in west-central Colorado, impounding the river for most of the distance between the town of Gunnison and Black Canyon of the Gunnison National Monument. The Blue Mesa reservoir, farthest upstream, will be by far the largest body of water. Morrow Point and Crystal reservoirs, successively farther downstream, will both be narrow, fiordlike pools beneath towering canyon walls. The three impoundments will be contiguous or nearly so, with little or no free stream between them.

In December 1962, representatives of the Southwest Regional Office of the National Park Service began a professional study of the Curecanti Unit to assess its recreational potential. Among others, these specific questions were analyzed: What will the new values be? How many people will be attracted by them? Where will the people come from?

The study was continued in the spring of 1964. This report is the result of that study. It presents an analysis of the recreational values to be created at the Curecanti Unit

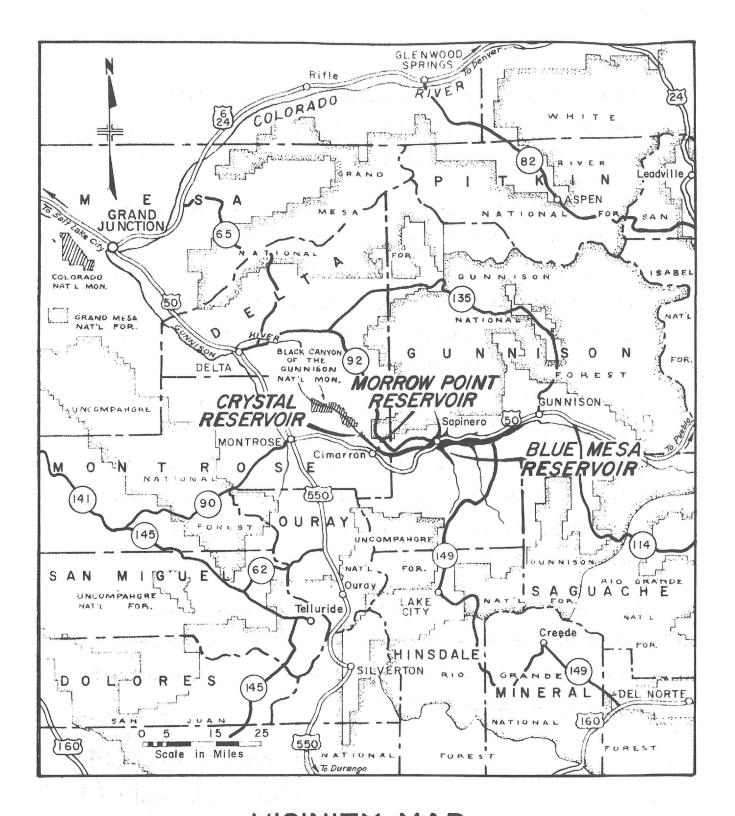
and a discussion of possibilities for the management of these values in coordination with the management of other recreational resources of the area.

This professional report is being distributed now to solicit the comments and suggestions of interested parties. It is the first step in arriving at a final report. The final report will recommend, among other things, the managing agency and the status of the area, including whether it qualifies as a National Recreation Area. These two matters involve determinations to be made by the Bureau of Outdoor Recreation. On the basis of this professional report and the additional information developed from the comments submitted in response to this report, the Bureau of Outdoor Recreation will make these determinations. They will be included in the final report.

It is requested that comments and suggestions on this report be sent to the Regional Director, Midwest Region, National Park Service, 1709 Jackson Street, Omaha, Nebraska 68102, by September 30, 1965.

George B. Hartzog, Jr.

Director



VICINITY MAP

CURECANTI PROJECT

COLORADO

INTRODUCTION

Under authority of Section 8 of the Colorado River Storage Project Act of 1956, the Secretary of the Interior is directed to investigate, plan, construct, operate, and maintain public recreational facilities on lands withdrawn or acquired for the project's purposes, and to provide for appropriate public use and enjoyment of the same and of the water surface created by the project. Further, under the memorandum of February 17, 1958, from the Director of the National Park Service to the Secretary, setting forth the joint recommendations of the Director and the Commissioner of Reclamation, and approved by the Secretary on April 12, 1958, the Service has been designated as the agency responsible for carrying out the Department's obligations (except with respect to fish and wildlife) under Section 8 of the 1956 act.

As one of the four principal authorized elements of the Colorado River Storage Project, the Curecanti Unit, comprised of three reservoirs in the deep canyon of the Gunnison River, will provide power production, river control, and significant recreation benefits. Construction of Blue

Mesa Dam, a 400-foot-high earth structure, began in 1962. Morrow Point Dam, 12 miles downstream from Blue Mesa Dam, was started in 1963. Crystal Dam will be built later downstream from Morrow Point Dam. It is expected that the Blue Mesa Dam will be closed in November 1965 and completed by March 1966, and that the lake behind it will fill to deadstorage pool level after one heavy runoff season, and to capacity after several years. Power production will begin by June 1966. Target dates for the Morrow Point construction are dam completion by December 1966, a storage reservoir within six months, and power production by October 1967. Plans for Crystal reservoir are not yet as far along, but it is expected that there will be water storage by some time in 1968. The National Park Service has prepared plans for basic recreation developments around the Blue Mesa reservoir and preliminary plans for Morrow Point and Crystal reservoirs. Construction of basic recreational facilities, which for the entire project have been estimated to cost approximately \$4 million, is scheduled to commence at Blue Mesa reservoir with 1965 fiscal year funds.

ACCESS AND POPULATION

Situated in Gunnison and Montrose Counties in the heart of Colorado's western slope, the three Curecanti reservoirs will augment the attractiveness of a tourist destination and vacation region long considered to be of first magnitude. In Gunnison County, tourism ranks first among basic industries in terms of employment. The region is well publicized and widely known throughout this country and, indeed, the world. Its renown is well justified, for it is, in general, an area of rugged high country, open mesa lands, and rushing mountain streams. Within this scenic province there is a variety of recreation opportunities sufficient to satisfy nearly every vacationer's taste. The high, forested country in the Gunnison and San Isabel National Forests immediately to the north and east is heavily used, particularly for big game hunting in the The Sawatch Range to the northeast contains the highest peaks in the Rocky Mountains. The rugged San Juan Mountains to the south and southwest are nationally known for their scenery. The precipitous gorge through which the Gunnison River flows in Black Canyon of the Gunnison
National Monument, adjacent to the Curecanti Unit on the
west, is one of the dramatic highlights of the region.

The high quality of the recreational values of the area draws visitors from all over the Nation and will continue to do so. U.S. Highway 50, a major east-west transcontinental route for vacationers, bridges the Blue Mesa reservoir at two points in its traverse of the entire reservoir complex. Significant use of the Curecanti impoundments is expected as a result of this travel. The bulk of visitor use, however, is expected to emanate from Colorado, New Mexico, and the adjacent plains states to the east.

In consideration of these facts and based on existing and projected travel data, it has been conservatively estimated that the Curecanti Unit will receive some 520,000 annual visitor-days of recreational use. Most of this use will be on and around the Blue Mesa reservoir. Added to this, of course, will be the already substantial recreational use of the surrounding region.

The resident population of this recreational region is low. Within a 50-mile radius there are approximately 38,000 people (all figures are from the 1960 census). Within a hundred miles there are but two cities larger than 10,000 people (Durango, 10,530, and Grand Junction, 18,694), and the total population is about 175,000. Within a 250-mile radius there is a population of nearly $2\frac{1}{2}$ million, including four standard metropolitan statistical areas: (929,383), 150 airline-miles away; Colorado Springs (143,742), 140 miles; Pueblo (118,707), 145 miles; and Albuquerque (262,199), 240 miles. Using a 500-mile radius (found by the U.S. Bureau of the Census in their national travel study of the Lake of the Ozarks to contain 88 percent of that lake's vacation and pleasure travel market), there is a population of approximately $7\frac{1}{2}$ million for Curecanti. It is expected that significant attendance will originate from these more distant points. Considerable enroute stopover of transcontinental travel is expected. Despite low population in the immediate vicinity, the recreational and esthetic values are such that high and consistent use is assured.

REGIONAL DESCRIPTION AND AREA VALUES

The region in which the Curecanti Unit lies is one of great altitudinal range. The Gunnison River in the bottom of the Black Canyon leaves the project area below Crystal reservoir at an elevation of 6,527 feet, and within 30 miles of the main visitor-use centers on the Blue Mesa reservoir there are peaks higher than 14,000 feet.

The immediate topography of the proposed recreation area is of two dissimilar types. Gentle slopes, flat benches, and occasional steep bluff faces characterize most of the landscape to be seen from the surface of Blue Mesa reservoir. These slopes and flats are mostly grassland, with some low brush and with trees restricted almost entirely to cotton-woods along stream channels and conifers on some sheltered north slopes. From the axis of the lake there are occasional scenic views up the canyons and valleys of the major tributaries to forest-covered mountain slopes, dramatically eroded cliff faces, and snowclad peaks.

Both Morrow Point and Crystal reservoirs lie at the bottom of a spectacular fiordlike gorge. There the scenery is

perhaps the single most important recreational value. Steep walls of the upper Black Canyon of the Gunnison, although less spectacular than those within the National Monument, are worthy of the attention of any traveler. In places the walls are intricately dissected by the forces of weathering and erosion, and throughout their length they are sufficiently detailed in pattern to provide compelling surroundings that change constantly with the viewer's position and with the time of day.

The geologic story of the scenery is an interesting one -a story that will complement rather than duplicate that at
Black Canyon of the Gunnison National Monument. It is essentially a story of volcanic outpourings and the powerful
forces and tremendous heat of metamorphism, and that of
the subsequent bandsaw action of a rushing stream that has
incised itself deep into the landscape.

The climate of the area is one of long, cold winters and short, beautiful summers, the latter punctuated by the violent thunderstorms common to the Rocky Mountains. Late spring and early summer are dry; moisture comes mostly as snow in winter and early spring. Minimum winter temperatures

often dip well below zero; summer maximums rarely exceed 85°. Although winter days are rarely warm, summer nights are almost invariably cool. The water-oriented use season will probably last from May through October.

The biological values in the region are significant particularly from the standpoint of wildlife. The bottomlands along the river in the Blue Mesa area are extremely important wintering grounds for deer and elk and the Gunnison River has long been recognized as a nationally significant trout stream.

The historical values in this area of the Gunnison River are sufficient to warrant interpretation. The Gunnison River valley was the approach to the Great Basin used by 18th century Spanish explorers and slave traders based in New Mexico; it was a popular stream with the American fur trappers of the early 19th century; and it was part of one of the several proposed transcontinental railroad routes explored in the 1850's by the Army's Pacific Railroad Surveys — taking its name, in fact, from Capt. John W. Gunnison, whose 40th parallel survey of 1853 was terminated by an Indian attack in Utah that took his life.

PRESENT LAND AND RECREATION USE

The climate and present area values have given rise to four main economic uses of the region: lumbering in the national forests surrounding the Gunnison River valley; ranching on the grassy slopes and bottomlands and seasonally in the higher country; mining mostly in the surrounding mountains; and recreation traditionally based on fishing, big game hunting, and backcountry camping, and recently augmented by developed winter sports activities.

The Gunnison National Forest extends to lake level on the Soap Creek arm of the Blue Mesa reservoir, and it also enters a small part of the Crystal reservoir, placing a total of 670 acres of the forest within the Curecanti Unit boundaries under consideration.

Although recreation use has long been courted in this area, there has been some conflict between grazing and wildlife interests. Within the region sizeable herds of deer and elk alternate their summer range in the mountainous sections with winter foraging in the lower valleys. As is the case in many other big game winter range areas,

the competing use of the bottomlands to their full potential for ranching has meant that winter carrying capacity for game in the overall region has been restricted far below summer capacity. In severe winters there has often been heavy mortality.

Mining has not been a significant economic activity in the immediate vicinity of the Curecanti Unit. Lake City, which was once a booming mining town, has changed its character to a resort center instead of ghosting into oblivion.

RESERVOIR OPERATING PLAN

The plan of operation proposed by the Bureau of Reclamation for this three-reservoir complex will render the lakes more than usually suitable for public recreation. Crystal and Morrow Point reservoirs, although difficult to reach, will be essentially stable. It is expected that a 5- to 10-foot drawdown of Crystal reservoir will occur each weekend in the summer. Because of the exceptionally steep shores of these two reservoirs, minor drawdown will cause little problem for boat launching or other recreation uses.

Blue Mesa reservoir, which will certainly attract the huge majority of recreation users, will have a considerably different drawdown pattern. In periods of average precipitation and runoff, the reservoir will be lowered some 20-25 feet by the end of May, and then will fill to near maximum capacity during the early summer. From June through October the water surface is expected to fluctuate no more than 8 feet below maximum pool elevation. During cycles of deficient precipitation, however, there may be

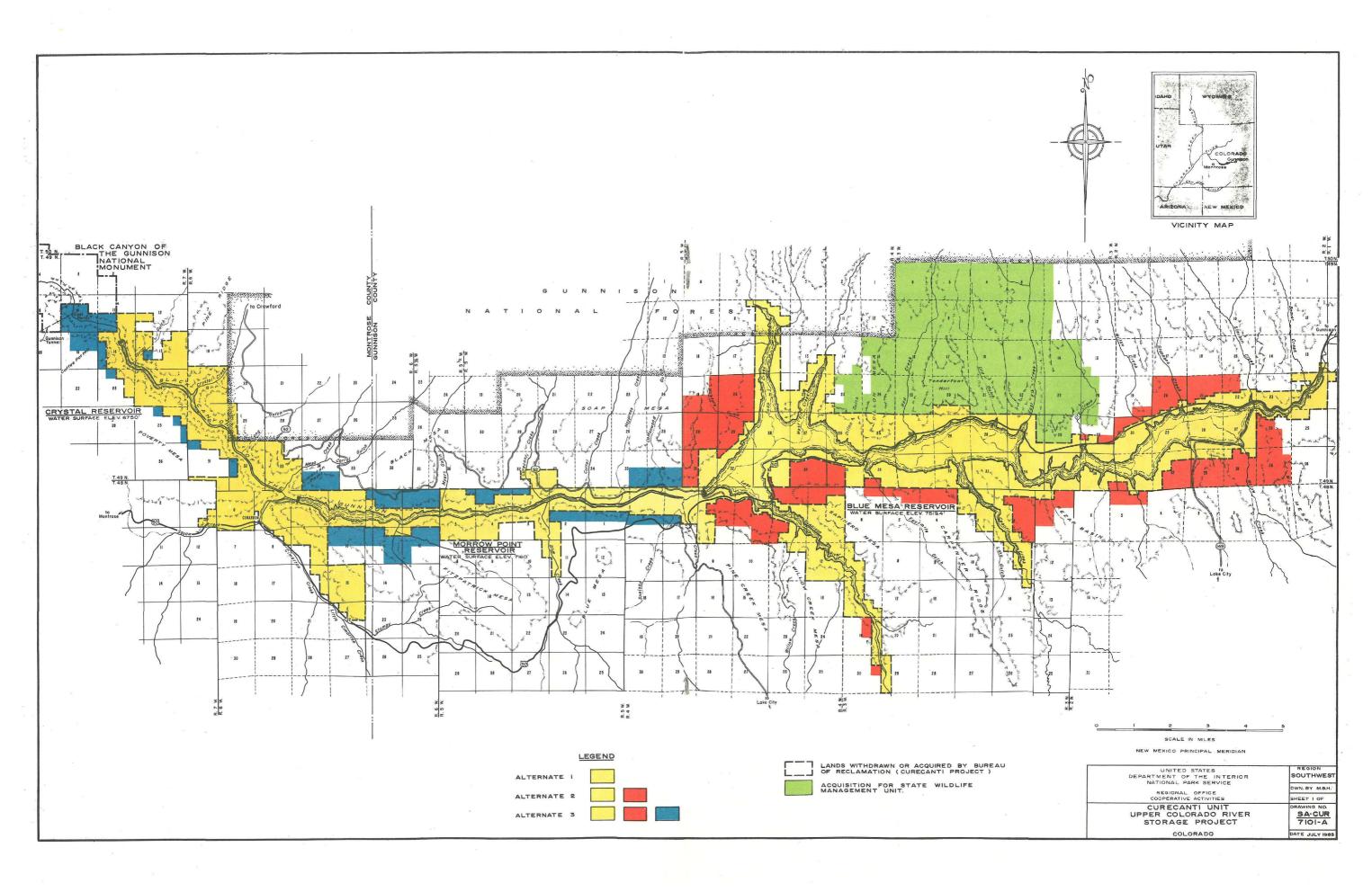
periods of as much as 4 years during which the reservoir will be drawn down some 70 feet and will not, during those periods, reach maximum elevation. The position of Blue Mesa's shoreline, then, may be subject to considerable horizontal migration, since in many places the shores are gently sloping. However, because the lake will be large in surface area even at minimum water level, full and continuing recreation use will be assured.

At maximum elevation of 7,519.4 feet, Blue Mesa will have a surface area of 9,180 acres. At minimum elevation of 7,393 feet, it will still be 2,790 acres in extent. Comparable figures for Morrow Point are: maximum elevation of 7,160 feet -- 817 acres; minimum elevation of 7,140 feet -- 740 acres. For Crystal: maximum elevation of 6,750 feet -- 392 acres; minimum elevation of 6,700 feet -- about 270 acres.

RECREATION SUITABILITY

Analysis of the Curecanti Project locale, the reservoir operating plans, the present recreation use, and the expected travel figures and patterns indicate that recreation suitability of the Curecanti Unit will be exceptionally high. The considerable variety of scenery and water conditions indicates that there will be recreation opportunities for all visitors.

Fishing - A very significant quality-fishing resource will be altered by impoundment of the Gunnison River. However, for many miles above the Blue Mesa reservoir the Gunnison and its tributaries will continue to provide superb, internationally famous trout fishing. This will be supplemented on the reservoirs themselves (most particularly Blue Mesa) by boat and bank fishing for trout which should be good to excellent. It is expected that tailwater fishing in the short stretches of river between one dam and the head of the next lower lake will be very popular. In addition, good access to the tailwater below Crystal reservoir made possible by dam construction requirements will facilitate



use of the stream in the depths of the Black Canyon within the National Monument. Thus, fishing use and attendant administrative responsibility within the monument can be expected to increase.

Hunting - The Gunnison River valley and surrounding highlands provide outstanding hunting for elk and deer. The lowlands around Blue Mesa reservoir are now, and will in the future be even more, vital to the management of the big game herds in the area.

Boating - Three kinds of boating use, and possibly a fourth, can be expected on the reservoirs of the Curecanti Unit.

Powerboating and attendant water skiing will be most attractive on Blue Mesa reservoir. Fishing will be a boating use on all three reservoirs, but will be heaviest by far on Blue Mesa. Sightseeing by boat, although occurring on all three, will probably be most intensive and most significant on Morrow Point and Crystal reservoirs, provided safe access can be developed to these deep-seated lakes.

Since Blue Mesa will be an unusually large body of water for Colorado, sailing can become an important recreational

use. However, it is not yet possible to predict the number of sailboats to be expected, nor the dollar value of such recreation to the area.

Shoreline Use - Camping will be popular at this reservoir complex. Not only will recreationists camp here in order to enjoy use of the lakes, but, because of the proximity of U.S. Highway 50, heavy wayside use of the camping facilities is expected to take place. Other forms of overnight accommodations will get similar use. The water in Blue Mesa reservoir will be cold and swimming will be a marginal activity. Some trail use along the shores can be expected, particularly where it involves scenic viewing and interpretation of the natural features.

Interpretation - An important aspect of the expected use of the proposed Curecanti Unit is the interpretation of its natural and manmade values. People using the area will be, to a certain extent, the same people who use the National Parks in the West. Their immediate aim may be somewhat different, for they may come to Curecanti for fishing or water skiing or hunting, but their basic

interests remain the same -- enjoyment gained through learning about an interesting subject and from learning more about a subject with which they are familiar. In consideration of their immediate interests, the agency responsible for recreation administration will have an opportunity and an obligation to interpret the facts behind the visible features of the area.

In cooperation with the Bureau of Reclamation, there should be explained the purpose of the dams and reservoirs, their functions, and their relationships to the other units of the Colorado River Storage Project and to the regional economy. This can be done most effectively close to or at the dams through interpretive facilities to be jointly developed by the two agencies. Growing from the story of the dams is the basic geologic account of the area which has, of course, determined the feasibility and suitability of dam construction along this stretch of the Gunnison River. This background must be told so as to complement the geologic story revealed at Black Canyon of the Gunnison National Monument. The two are part of a whole which has shaped the entire basin visible from the area. Waysides

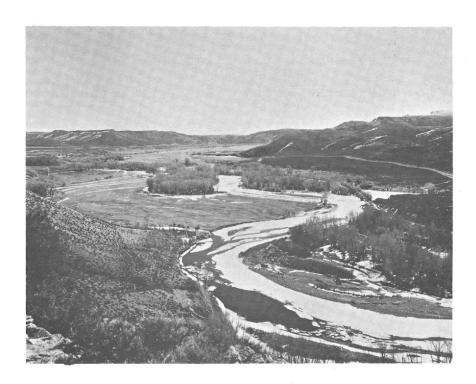
along roads within the area and interpretive trails, where appropriate, will help present this aspect of the scenery. Few visitors to the area can be immune to the scenic impact of the canyons nor to the intricately dissected volcanic bluffs on Soap and Elk Creeks. These dramatic elements of the scenery demand interpretation.

Wildlife, too -- including the science of big game management -- deserves interpretation. Visitors will often see deer and elk in the vicinity, and the account of those animals' relationship to their environment can be a fascinating one. Modern game and fishery management principles can be explained within this frame of reference. The Colorado Department of Game, Fish, and Parks and the Bureau of Sport Fisheries and Wildlife should contribute in presenting this chapter of the Curecanti story.

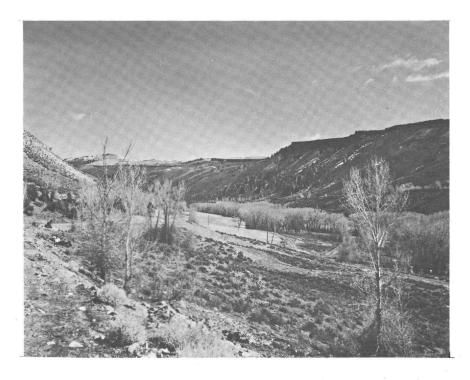
Information regarding fishing in the Gunnison River and the reservoirs will be in demand. An important part of the interpretive program will deal with the life history of the fisheries resource to acquaint visitors with the natural ecological picture as well as that of the fishery management which are both pertinent and fascinating.

Informational service should be available to answer visitor questions on how and where to enjoy the area's recreational resources. This will also give the administering agency an opportunity to disseminate information on hazards and to stress safety tips, and generally to familiarize the visitor with area rules and regulations.

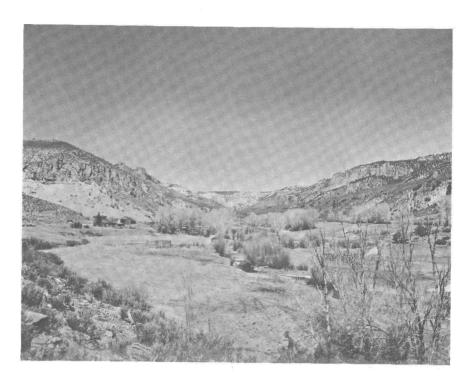
Interpretive coordination with the Bureau of Land Management and the U.S. Forest Service -- both prominent in this setting -- should provide complementary parts of a regional story. This is particularly applicable since the Curecanti Unit will be touched at many places by public domain, and a small part of it lies within the boundaries of the Gunnison National Forest.



Blue Mesa reservoir site - view east up Gunnison River in Iola Basin.



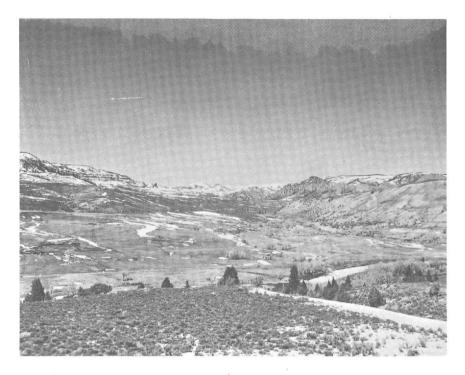
Blue Mesa reservoir site - view north up East Elk Creek.



Blue Mesa reservoir site - view north up West Elk Creek arm.



Blue Mesa reservoir site - view north from relocated Highway 50 to rugged crags near West Elk Creek arm.



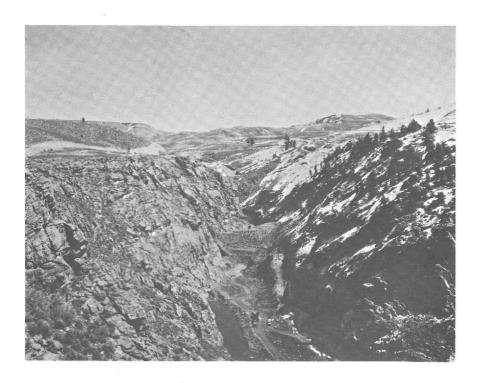
Blue Mesa reservoir site — view north from relocated Highway 50 up Soap Creek arm. Distant mountains are in Gunnison National Forest.



Blue Mesa reservoir site — view west from present Sapinero post office location. Lake Fork of the Gunnison River traverses center of photo from left to right to its junction with main river. Damsite about one mile farther in distance.



Blue Mesa reservoir site — view southeast up Lake Fork of Gunnison River. Bridge is on abandoned Highway 50 to be inundated; relocated highway in distance.



View upstream to Blue Mesa dam under construction.



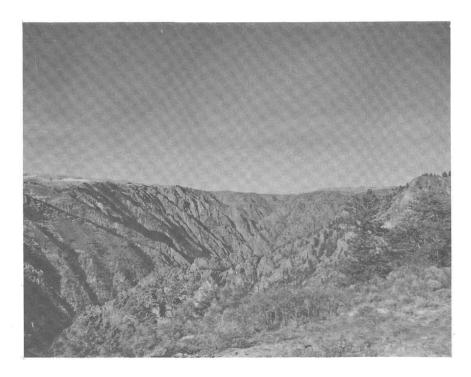
Morrow Point reservoir site - view down Gunnison River at head of reservoir from observation point below Blue Mesa Dam.



Morrow Point reservoir site - view south across Black Canyon of the Gunnison River to Round Corral Creek, from State Route 92.



Morrow Point reservoir site - view up Black Canyon of the Gunnison River to damsite.



Crystal reservoir site - view northwest down Black Canyon of the Gunnison River from State Route 92.

ALTERNATIVES OF RECREATION POTENTIAL

The Curecanti reservoirs and their surrounding lands embrace resources that in total will make possible a highly enjoyable visitor experience if properly developed and managed. The primary market which the Curecanti reservoirs will serve is Colorado and the adjacent states to the south and east, as well as national travel seasonally.

Alternate No. 1 - This alternative involves management of the reservoir complex on the basis of only those lands presently withdrawn or acquired by the Bureau of Reclamation. Such lands are located within what is referred to as a "takeline." Generally the takeline encompasses lands to be inundated or required for operational purposes, and the lands are normally described by designated rectangular township subdivision lines. Exceptions occur for various reasons, necessitating modifications of the takeline and using metes-and-bounds descriptions instead, such as the edge of a highway right-of-way. Conversely, there are occasions where severance values are such

that small acreage appendages are included that normally would not be within the takeline.

The present takeline as shown on Drawing No.

SA-CUR-7101A includes some additional land for recreation development sites over and above that needed for purely reclamation purposes. However, authority under existing law (Colorado River Storage Project Act, 70 Stat. 105) is not broad enough to provide adequate perimeter lands for the management and protection responsibilities that are commensurate with the scenic and recreation values inherent in this water-resource development area.

Lands within the contiguous takeline for the Curecanti Project total 41,103 acres (shown in yellow on the drawing). This total includes 670 acres of Gunnison National Forest land. If no additional lands are withdrawn or acquired, recreational development will be restricted by lack of space and reduced esthetic quality. Management of such a unit would be primarily concerned with water-

oriented recreation and little or no emphasis could reasonably be placed on land-based activities such as picnicking, hiking, horseback riding, nature study, and sightseeing.

Alternate No. 2 - This alternative involves an expansion of Alternate No. 1 by enlarging the Blue Mesa sector with 10,309 additional acres of public and private lands and interests therein. These supplemental lands are needed to realize the total potential of the Blue Mesa reservoir by providing opportunity for full development and protection of its significant recreation values. Such an expansion would permit not only additional facilities for land-based recreational enjoyment but also a special consideration for vista control surrounding the development sites to preserve the natural scene at these locations. All of the additional lands are necessary to protect adequately the scenic vistas and offscapes which will be visible from the reservoir, its shoreline developments, and approach roads.

Under this alternative, then, it would be possible to expand both quantity and quality of the total recreational experience available at Blue Mesa.

Alternate No. 3 - This alternative involves a further expansion of Alternate No. 1 by applying the same principle for realizing total recreation potential to all three reservoirs in the Curecanti complex. In this alternative, another 4,464 acres of public and private lands and interests therein would be added at the Morrow Point and Crystal reservoirs. Below Blue Mesa reservoir, land needs become primarily important as they concern the development of road access and campground facilities at Morrow Point reservoir.

On the following page is a tabular breakdown of the land needs under the three alternates.

				1	Acreage	
Alternate No	. 1					
	thdrawn or acq i Unit by Bure ion		or		41,103	
Alternate No	. 2					
	quired to full ect the Blue M	-	***			
Prop	rnate No. 1 ab osed public la osed private 1	nds	41,103 4,455 5,854			
	Total				51,412	
Alternate No	. 3					
	quired to full ect the entire	*	PM			
Prop	rnate No. 1 ab osed public la osed private 1	nds	41,103 6,620 8,153			
	Total				55.876	

Of the 14,773 acres of land lying outside the existing takeline which are vital to the optimum protection of the recreation values of the Curecanti reservoirs, 5,854 at Blue Mesa and 2,299 at Morrow Point and Crystal are in private ownership; the rest are public domain. On the private lands, acquisition of an adequate lesser interest than fee might suffice. Most important are the private lands associated with Blue Mesa reservoir on which at least scenic easements should be taken, if possible; otherwise the lands should be acquired in fee.

An alternative to the acquisition of scenic easements would be a county zoning plan of sufficient effectiveness and coverage to protect through building control the significant scenic qualities of this reservoir complex. For several years a pilot land-use study covering Gunnison County has been underway under the sponsorship of the State of Colorado Division of Commerce and Development. This comprehensive study, financed with funds from the HHFA 701 program under a P-17 urban planning grant, has been most concerned with the changing land-use patterns and the need for county zoning in the Blue Mesa reservoir vicinity. Approval of

zoning regulations by the County Commissioners which will recognize and protect this important recreation resource would be most important in the future of the Curecanti Unit reservoirs.

Approximately \$4 million of Federal funds are presently programmed over a five-year period for recreation development at these reservoirs. This development, however, is limited to basic facilities only, comprising minimum shore lands, roads, boat ramps, campgrounds, utility systems, and administrative requirements. These minimums must be supplemented by rather large outlays for accessory programs to be financed by the administering agency if this prime recreational resource is to serve the mounting needs of the people of the region and the Nation for outdoor recreation.

In addition to varied accessory administrative development, there will be demands for floating boat-handling equipment, navigation aids, communication systems, visitor service facilities, and an immediate need for more reservoir perimeter lands or scenic control thereover. Equally important is the necessity for a carefully conceived

operating and management program which will assure an enjoyable experience for the visiting public on a sustained basis. Such a program to be fully effective should give special recognition to the interstate and regional recreational significance of these reservoirs, their favorable relationship to other adjacent recreation resources, and the scale of necessary accessory land acquisition and development.

The area should be planned and managed to recognize outdoor recreation as the dominant or primary resource management objective. Natural resources within the area should be utilized and managed for additional purposes where such uses are compatible with fulfilling the recreation mission of the area.

