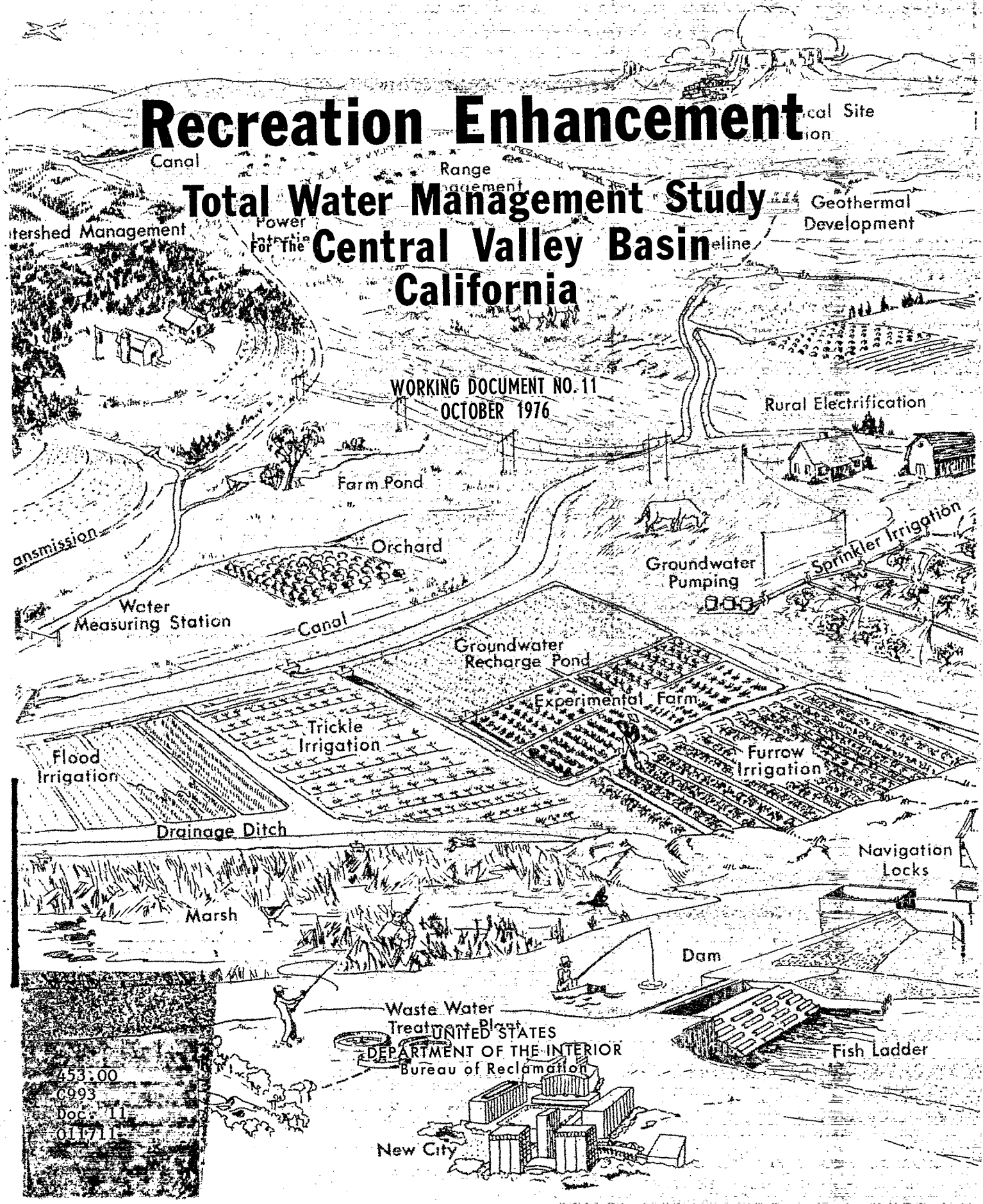
Recreation Enhancement

Total Water Management Study For The Central Valley Basin California

WORKING DOCUMENT NO. 11
OCTOBER 1976



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TOTAL WATER MANAGEMENT STUDY FOR THE CENTRAL VALLEY BASIN, CALIFORNIA

RECREATION ENHANCEMENT

WORKING DOCUMENT NO. 11

October 1976

THIS REPORT WAS PREPARED PURSUANT TO FEDERAL RECLAMATION LAWS (ACT OF JUNE 17, 1902, 32 STAT. 388 AND ACTS AMENDATORY THEREOF OR SUPPLEMENTARY THERETO). PUBLICATION OF THE FINDINGS AND RECOMMENDATIONS HEREIN SHOULD NOT BE CONSTRUED AS REPRESENTING EITHER THE APPROVAL OR DISAPPROVAL OF THE SECRETARY OF THE INTERIOR. THE PURPOSE OF THIS REPORT IS TO PROVIDE INFORMATION AND ALTERNATIVES FOR FURTHER CONSIDERATION BY THE BUREAU OF RECLAMATION, THE SECRETARY OF THE INTERIOR, AND OTHER FEDERAL AGENCIES.

Bureau of Reclamation

Mid-Pacific Region

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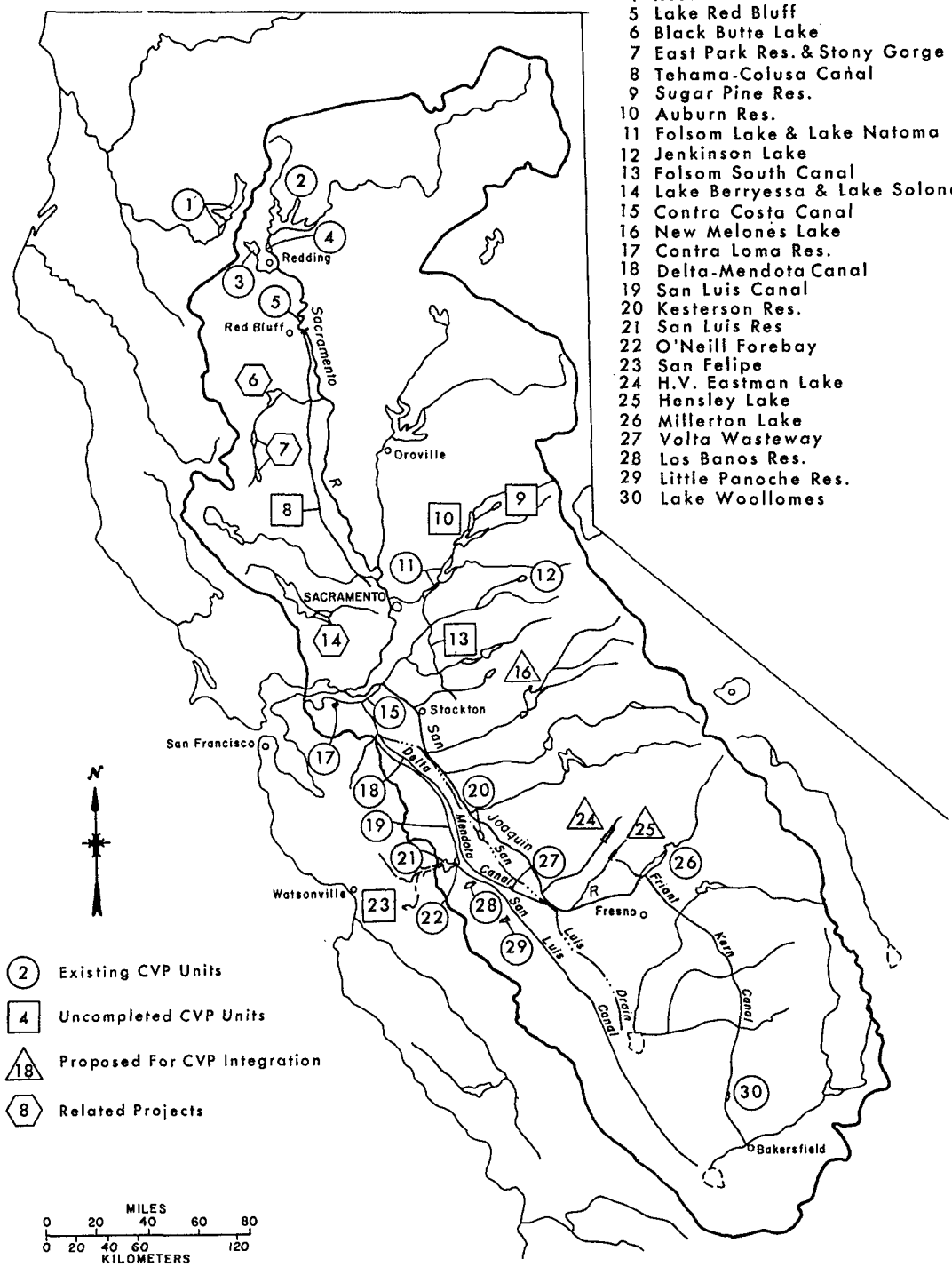
PLATE 1

RECREATION AREAS

1 Clair Engle Lake & Lewiston Lake
2 Shasta Lake
3 Whiskeytown Lake
4 Keswick Res.
5 Lake Red Bluff
6 Black Butte Lake
7 East Park Res. & Stony Gorge Res.
8 Tehama-Colusa Canal
9 Sugar Pine Res.
10 Auburn Res.
11 Folsom Lake & Lake Natoma
12 Jenkinson Lake
13 Folsom South Canal
14 Lake Berryessa & Lake Solona
15 Contra Costa Canal
16 New Melones Lake
17 Contra Loma Res.
18 Delta-Mendota Canal
19 San Luis Canal
20 Kesterson Res.
21 San Luis Res
22 O'Neill Forebay
23 San Felipe
24 H.V. Eastman Lake
25 Hensley Lake
26 Millerton Lake
27 Volta Wasteway
28 Los Banos Res.
29 Little Panoche Res.
30 Lake Woollomes



LOCATION MAP
RECREATION AREAS

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Recreation enhancement--An investment in the quality of life

Fishing on the Sacramento River

"People who cannot find time for recreation are obliged sooner or later to find time for illness."

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INTRODUCTION

The watersheds of the Sacramento and San Joaquin Rivers and the streams flowing into them provide the Central Valley's most important natural recreation resources. Bureau of Reclamation reservoirs and canals in the valley afford substantial recreation opportunities for the public.

Although the recent energy crisis and the current economic conditions might suggest that visitation to recreation areas would decrease, quite the opposite has occurred. Because of the relatively easy access to the areas from urban population centers, increasing pressures of visitation are being realized.

Urban pressures have encouraged increasingly frequent impromptu visits to recreation areas which require neither advance planning and preparation nor specialized skills for their enjoyment. The recreation experience at Central Valley reservoirs and canals offers a pleasant yet inexpensive retreat from contemporary problems.

PURPOSE AND SCOPE

The purpose of this working document on Recreation Enhancement is to:

1. Delineate the land, water, and existing physical facilities available for recreation at units of the Central Valley Project, and the closely related Solano and Orland Projects.

2. Indicate the potential of these lands, water, and physical facilities to enhance recreation opportunities, broaden the variety of recreation experience, and conserve the project's natural, cultural, and developed resources.

3. Recognize the overall changing needs and objectives of the Central Valley Project.

Future enhancement potential was determined by utilizing master plans, development plans, and management plans, as well as the recommendations and observations of administrators, attendants, water operators, and visitors. In some instances, recreation areas were visited to observe the resources at first hand. Recommendations made did not consider existing legal constraints.

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Monetary or funding considerations were not regarded as a constraint. Recreation potential of all areas was measured or estimated by considering those factors which would increase the recreation experience to the public without analysis of comparative cost. Implementation of any plans suggested in this document would, of necessity, include a thorough financial analysis.

Because of the document's emphasis on development of recreation at specific reservoir sites rather than general or regional plans, the parkway development along the American River below Nimbus Dam, and the impact of the proposed Peripheral Canal on recreation enhancement in the Sacramento-San Joaquin Delta are not discussed.

RELATIONSHIP TO TOTAL WATER MANAGEMENT STUDY

This working document is one of a series being prepared for the Central Valley Total Water Management Study. The document analyzes project features from a recreational viewpoint and presents possibilities which would enhance recreation opportunities. However, recreation is only one of the multiple uses for which Reclamation projects are constructed. Thus, an important and continuing problem will be the extent to which recreation and other multiple uses can be fitted together. Analyses of other project functions which are included in the series of Total Water Management studies will provide additional information for consideration of this problem.

The objectives of the Total Water Management Study are to:

1. Analyze changing needs and objectives of the Central Valley Project.

2. Examine and evaluate the Central Valley Project to determine if operations and facilities should be modified to achieve better management for today's needs and objectives.

3. Describe alternative means of meeting changing conditions within the constraints of existing authority and with some constraints removed.

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RECLAMATION'S ROLE IN RECREATION

The Bureau of Reclamation plans, constructs, and operates projects which develop water resources for multiple uses including recreation as authorized by Federal law.

The act authorizing the Trinity River Division of the Central Valley Project (69 Stat. 719, Aug. 12, 1955) provided only for minimum basic facilities to maintain public health and safety, and protection of property. Later, the Congress enacted legislation to provide for the Whiskeytown-Shasta-Trinity National Recreation Area (16 U.S.C. 4609) because of its recreation potential.

The Federal Water Project Recreation Act of 1965 (P.L. 89-72) and other legislation enable Reclamation to become directly involved in the development of recreation and fish and wildlife enhancement facilities, and use of lands within a project area. P.L. 89-72 encourages non-Federal management of recreation areas, and requires that the Federal government and the non-Federal agency equally share some of the costs of the recreation and fish and wildlife functions.

That act was amended by the Water Resources Development Act of 1974 (P.L. 93-251), which changed the cost-sharing of fish and wildlife enhancement so that non-Federal interests are responsible for one-fourth of those costs.

Need for recreation development was also recognized by the acts authorizing San Luis Unit (P.L. 86-488), and the Auburn-Folsom South Unit (P.L. 89-161).

The trend in Federal land acquisition for Reclamation projects has been away from minimum acreage acquisitions for access and control. With the support of the Bureau of Outdoor Recreation and the Fish and Wildlife Service, current policies for project planning include recommendations for acquisition of additional lands for recreation and fish and wildlife preservation.

Management of reservoirs in or adjacent to national forests is transferred to the Department of Agriculture's Forest Service. Reservoirs in national recreation areas are managed by Interior's National Park Service. For the remaining reservoirs, Reclamation encourages State and local agencies to assume management.

To help insure that non-Federal agencies adequately develop and properly manage recreation facilities, Reclamation enters into

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a recreation management agreement with a public recreation agency and requires that it prepare a recreation management plan. The managing agency plans, develops, and operates the facilities at its own expense, except for the development costs. These are shared by the Federal government under the authority of the Federal Water Project Recreation Act (P.L. 89-72), as amended by the Water Resources Development Act of 1974 (P.L. 93-251), and by funding provided under the Soil and Moisture Conservation Program.

In a few instances, no responsible public agency is available to assume the operation and management of a recreation area. Without agreement by a managing agency to provide financial assistance and operational support or specific enabling legislation, Reclamation can only provide the minimum basic facilities for public health and safety. For the Solano Project, Reclamation was authorized by P.L. 93-493 to take over the recreation management role at Lake Berryessa.

COORDINATION WITH INTERIOR AGENCIES

The National Park Service until recently has been responsible for all postauthorization assistance, involving development planning, interpretation, and operation of recreation areas, management planning, and negotiation of agreements for administration of reservoir recreation areas. Its present assistance is limited to the review of recreation-related documents.

The Bureau of Outdoor Recreation is responsible for coordination of Federal plans and programs relating to outdoor recreation on public lands. Its objective is to assure the effective and efficient use of all available outdoor recreation resources. As part of its program, the Bureau of Outdoor Recreation is responsible for the recreation aspects of comprehensive river basin planning. It is also responsible for preauthorization recreation planning on Reclamation projects, including the updating of feasibility planning where warranted. It administers land and water conservation funds which may be used on Reclamation areas by sponsorship through State or local recreation agencies.

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PROJECT RESOURCES AND VISITATION

The Central Valley Project is an important recreation resource, providing facilities both at its reservoirs and along its waterways. The 21 Bureau of Reclamation reservoirs in the valley, listed in table 1 and described in this document, contribute significantly to meeting the recreation needs of northern California. Outdoor recreation uses at these locations include camping, fishing, picnicking, swimming, boating, water skiing, hiking, and sightseeing. During 1975 Shasta Lake was the most popular area as evidenced by usage, with 4,432,850 visitor days recorded. Table 2 summarizes the 1975 recreation use at Bureau of Reclamation reservoirs in the Central Valley.

Conveyance facilities offer recreation opportunities, with fishing access sites developed along the Delta-Mendota and San Luis Canals, and on Putah Creek, and recreation trails provided along the Contra Costa and Folsom South Canals. Visitors can tour two fish hatcheries, Nimbus and Trinity River, and observe their operation. These facilities and the visitor-days at each during 1975 are summarized in table 3.

Over 14.7 million visitor-days of use were recorded at Bureau of Reclamation reservoirs and canals in 1975. Recreation activities of visitors at all project areas in 1975 included:

	Millions of visitor-days (rounded)
Boating	3.58
Sightseeing	2.79
Picnicking	1.65
Swimming	1.71
Camping	1.50
Other[a]	1.29
Fishing	1.19
Water skiing	1.04

[a] Nature studies, photography, bicycling, unauthorized off-road vehicle (ORV) use, and hunting.

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Table 1. Bureau of Reclamation reservoirs in the Central Valley

	Water surface elevation[a]	Total water area (acres)	Land area available for recreation (acres)	Shoreline length (miles)	Fishery reservoir release (acre-feet)
Clair Engle and Lewiston Lakes					
Clair Engle Lake	2,370	16,500	35,165	145	-
Lewiston Lake	1,902	610	5,250	15	121,000
Contra Loma Reservoir	211	82	689	2	-
East Park and Stony Gorge					
East Park	1,200	1,820	600	25	7,240
Stony Gorge	841	1,275	1,161	18	-
Folsom Lake and Lake Natoma					
Folsom Lake	466	11,850	4,875	75	-
Lake Natoma	126	500	783	14	224,000
Jenkinson Lake	3,471	640	1,375	8	2,000
Kesterson Reservoir	81	2,500	3,400	N/A	-
Keswick Reservoir	587	630	570	19	1,716,000
Lake Red Bluff	261	605	373	19	-
Lake Woollomes	401	300	20	4	-
Lakes Berryessa and Solano					
Lake Berryessa	440	19,328	6,088	165	-
Lake Solano	132	110	135	5	-
Little Panoche Reservoir	670	354	321	3	-
Los Banos Reservoir	354	470	1,702	12	-
Millerton Lake	578	4,900	1,950	47	18,000
O'Neill Forebay	225	2,190	3,346	12	-
San Luis Reservoir	544	13,800	9,184	65	-
Shasta Lake	1,067	30,000	28,279	370	-
Volta Wasteway Reservoir	-	50	2,847	9	-
Whiskeytown Lake	1,210	3,250	41,940	36	42,000

[a] Feet above sea level.

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Table 2. 1975 recreation use at Bureau of Reclamation reservoirs in the Central Valley

	Sightseeing	Picnicking	Camping	Swimming	Water skiing	Boating	Fishing	Hunting	Other	Total
Clair Engle and Lewiston Lakes										
Clair Engle Lake	98,400	16,800	145,350	35,600	91,500	1,356,600	44,800	4,800	209,700	2,003,550
Lewiston Lake	32,400	6,600	12,850	0	0	39,600	10,000	6,600	207,000	315,050
Contra Loma Reservoir	10,630	14,200	0	88,000	0	350	5,650	0	0	118,830
East Park and Stony Gorge Reservoirs										
East Park Reservoir	710	1,774	10,643	7,095	5,321	3,548	6,030	0	355	35,476
Stony Gorge Reservoir	4,824	9,558	29,887	2,643	20,735	827	4,948	0	783	74,205
Folsom Lake and Lake Natoma										
Folsom Lake	569,055	847,165	59,900	278,109	38,507	241,741	81,294	0	23,532	2,139,303
Lake Natoma	8,519	114,787	6,053	11,882	0	12,555	7,174	0	63,223	224,193
Jenkinson Lake	5,557	33,057	30,557	8,057	13,057	5,557	23,057	0	5,557	124,456
Kesterson Reservoir	313	0	0	0	0	0	0	3,464	12	3,789
Keswick Reservoir	1,632	78	0	0	0	3,172	4,141	1,285	212	10,520
Lake Red Bluff	64,125	2,640	4,995	1,980	1,920	1,947	8,817	0	8,000	94,424
Lake Woollomes	329,863	155,082	0	111,253	0	647	5,337	0	69	602,251
Lakes Berryessa and Solano										
Lake Berryessa	330,327	103,291	501,757	154,036	332,191	239,785	168,838	0	3,500	1,833,725
Lake Solano	4,834	2,468	25,186	2,101	0	1,678	5,563	0	564	42,394
Los Banos Reservoir	11,943	1,855	5,536	570	0	172	9,803	64	0	29,943
Millerton Lake	307,724	200,020	61,843	83,555	65,546	51,020	28,061	0	6,635	804,404
O'Neill Forebay	15,832	30,450	59,979	7,690	8,700	690	76,764	93	112	200,310
San Luis Reservoir	21,501	0	0	0	258	2,920	172,701	125	0	197,505
Shasta Lake	435,600	56,400	476,350	688,000	372,200	1,443,300	386,200	4,800	570,000	4,432,850
Volta Wasteway Reservoir	749	0	0	0	0	0	4,596	7,540	195	13,080
Whiskeytown Lake	420,512	52,146	77,868	237,372	85,470	170,940	73,000	8,760	147,949	1,274,017
Total	2,675,050	1,648,371	1,508,754	1,717,943	1,035,405	3,577,049	1,126,774	37,531	1,247,398	14,574,275

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Table 3. Fishing access sites, fish hatcheries, and recreation trails

Unit	Land area (acres)	Water area (acres)	Shoreline length (miles)	Trail length (miles)	1975 recreation use: Sight-seeing	Fishing (visitor-days)	Other (visitor-days)	Total (visitor-days)
FISHING ACCESS SITES								
Delta-Mendota Canal								
Site 2a	87	31	5		560	500		1,060
Site 5	570	230	25		350	22,675		23,025
Nimbus Dam Shoals	20					6,000		6,000
Putah Creek	30				1,200	800		2,000
San Luis Canal								
Avenal Cut-off	1	1				10,950		10,950
Canyon Road	1	1				1,485		1,485
Fairfax	1	1				6,020		6,020
Huron	1	1				4,000		4,000
Mervel	1	1				2,845		2,845
Three Rocks	1	1				5,510		5,510
FISH HATCHERIES								
Nimbus	20				97,665			97,665
Trinity River	13				13,331	718		14,049
RECREATION TRAILS								
Contra Costa Canal				12				
Folsom South Canal				4			3,200	3,200

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Young visitor displaying motto
appropriate to recreation resources

Recreation resources are irreplaceable. Today with an unprecedented number of people visiting its reservoir areas, the Bureau of Reclamation is concerned with finding ways to protect and enhance its lands and waters for maximum recreation enjoyment by the general public.

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CONCLUSIONS AND RECOMMENDATIONS

Many Reclamation facilities in the Central Valley area were designed and built before recreation received its present emphasis. Thus comparisons between present and optimum recreation conditions indicate obvious (1) limitations of authority, (2) needs for adequate funding, and (3) problems involved in coordinating recreation with other functions in project operations.

The improved management of recreation would have many advantages. Of importance is the ability to meet the public's ever-increasing needs for recreation. Recreation services to the public should be provided with greater efficiency. Restoration of land resources should be accelerated. The Federal government could assume a more equitable share of the operation funding, and thus relieve local agencies of some of their burden. Reclamation's ability to serve the public and to fulfill its responsibilities in land and water resource management would thus be improved.

In any action taken in developing the full recreation potential on Reclamation lands, the public should be involved in order to provide a plan for the highest and best use of resources for their benefit.

The conclusions and recommendations which follow present overall suggestions for maximizing recreation potential, based on experience gained in operating the project facilities. Additional funding, increased personnel ceilings, and realinement of the recreation function of Reclamation would of necessity be required. In most instances, the necessary project reauthorization might prove the greatest obstacle to any further action.

Specific limitations at individual units have been identified in the descriptions of those units. General limitations regarding the sites, the managing agencies, and the Bureau of Reclamation, together with the recommendations concerning those limitations, follow.

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SITE

Limitations	Recommendations
1. Lack of land suitable for recreation uses within takeline boundaries.	1. Identify and procure lands for recreation use outside of takeline if benefits exceed costs.
2. Land unavailable for recreation within takeline boundaries because of limited use policies.	2. Identify and open lands within takeline boundaries for recreation use if compatible with other uses.
3. Overemphasis on development of traditional recreation facilities.	3. More creative planning concepts should be incorporated into future development. Identify new recreation activities and develop facilities if compatible with other uses. Maintain flexibility by developing facilities in stages.
4. Lack of awareness of user needs and resource capability in site design.	4. Redesign recreation use areas (campgrounds, picnic areas), based on user needs instead of arbitrary standards. Site should not be excessively modified by grading or paving if alternative methods are suitable.
5. Preclusion of recreation benefits through the design and operation of canals and reservoirs for other project purposes.	5. Continue to recognize recreation potential during planning and design stages of new reservoirs and canals. Evaluate operations to determine if they can be modified to optimize recreation by maintaining a recreation pool elevation, and making downstream releases for recreation benefits when these modifications are compatible with other project purposes.

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MANAGING AGENCY

Limitations	Recommendations
1. Lack of funds for recreation development, operation, and maintenance.	1. Obtain sufficient funding for managing agency based on priority of recreation needs.
2. Differences in managing agency's and Reclamation's goals, objectives, and practices in recreation.	2. Achieve greater continued coordination with Reclamation to insure that common goals and objectives are implemented.

BUREAU OF RECLAMATION

Limitations	Recommendations
1. Restraints on authority to provide recreation as a project purpose.	1. Support modification of P.L. 89-72 to permit greater and continuous funding assistance to managing agencies, and to allow Reclamation to develop, operate, and maintain recreation facilities at Bureau reservoirs when other Federal or non-Federal agencies are unwilling or unable to assume such responsibility, or when management by a non-Federal agency is unsatisfactory.
2. Inability to adequately fund the development and administration of recreation areas.	2. Give more emphasis to recreation planning in order to handle existing and potential workload.
3. Lack of personnel to administer a comprehensive recreation program, and conflict with managing agency's efforts.	3. Increase number of personnel. Improve coordination, including frequent reservoir reviews, to keep Reclamation informed of managing agency's efforts, thus avoiding duplication and conflict. Develop a public awareness and involvement program to determine needs and reactions.
4. Inadequacy of long-range recreation goals and objectives.	4. Develop a long-range recreation program that recognizes the public's need for an outdoor recreation resource.

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CENTRAL VALLEY RECREATION AREAS

Table 4 lists the recreation units described in this document and gives their status; plate 1 shows their location. Central Valley Project reservoirs are identified as in operation, under construction, or authorized for construction. The 2,300,000-acre-foot Auburn Reservoir, Folsom South Canal, and Tehama-Colusa Canal (Funks and Oat Reservoirs) are under construction; San Felipe Division and Sugar Pine Reservoir are authorized for construction by the Bureau of Reclamation. Also described are the Corps of Engineers' reservoirs which include Black Butte, H. V. Eastman, and Hensley Lakes, in operation and financially integrated with the Central Valley Project, and New Melones Reservoir, now under construction, to be operated and financially integrated with the Central Valley Project. Only at the Corps' New Melones will the Bureau of Reclamation assume the recreation responsibilities.

Reservoirs of the Solano Project--Lakes Berryessa and Solano, and of the Orland Project--East Park and Stony Gorge--are included because of their close relationship to the Central Valley Project. Table 4 also shows the agency responsible for recreation management at each unit, handled under a memorandum of agreement with other federal agencies, and by agreement, lease, or license with non-Federal agencies.

To meet the demand for a variety of recreation opportunities, facilities have been provided at each of the recreation areas. Selected recreation facilities available at each site are presented in table 5.

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Table 4. Status of units, and agencies administering recreation areas

USBR CVP FEATURE		CORPS OF ENGINEERS		OTHER	
A	In operation	C-1	In operation, integrated with the CVP	D	USBR Orland Project
B-1	Under construction	C-2	Under construction, to be integrated with the CVP	E	USBR Solano Project
B-2	Authorized for construction			O-1	City of Red Bluff

Status	Unit	Agency administering recreation area
B-1	Auburn Reservoir	California Dept. of Parks and Recreation (Dept. of Parks and Recreation)
C-1	Black Butte Lake	Corps of Engineers
A	Clair Engle and Lewiston Lakes	U.S. Forest Service
A	Contra Costa Canal	Contra Costa Co. Water Dist.
A	Contra Loma Reservoir	East Bay Regional Park Dist.
A	Delta-Mendota Canal	Stanislaus and Fresno Counties
D	East Park and Stony Gorge Reservoirs	Private concessionaires
A	Folsom Lake and Lake Natoma	Dept. of Parks and Recreation
B-1	Folsom South Canal	Bureau of Reclamation
C-1	H. V. Eastman Lake (Buchanan Dam)	Corps of Engineers
C-1	Hensley Lake (Hidden Dam)	Corps of Engineers
A	Jenkinson Lake	El Dorado Irrigation Dist.
A	Kesterson Reservoir	U.S. Fish and Wildlife Service
A	Keswick Reservoir	Shasta County
A	Lake Red Bluff	U.S. Fish and Wildlife Service
	East Sand Slough	Bureau of Reclamation
	Red Bluff Recreation area	U.S. Fish and Wildlife Service
O-1	Dog Island and Samuel Ayer Park	City of Red Bluff
A	Lake Woollomes	Kern County
E	Lakes Berryessa and Solano	Bureau of Reclamation Solano County Parks Dept.
A	Little Panoche Reservoir	California Dept. of Fish and Game (Dept. of Fish and Game)
A	Los Banos Reservoir	Dept. of Parks and Recreation
A	Millerton Lake	Dept. of Parks and Recreation
C-2	New Melones Lake	Bureau of Reclamation
A	O'Neill Forebay	Dept. of Parks and Recreation
B-2	San Felipe Division	Santa Clara or San Benito County
A	San Luis Canal	Merced, Fresno, and Kings Counties
A	San Luis Reservoir	Dept. of Parks and Recreation
A	Shasta Lake	U.S. Forest Service
B-2	Sugar Pine Reservoir	U.S. Forest Service
B-1	Tehama-Colusa Canal	
A	Volta Wasteway	Dept. of Fish and Game
A	Whiskeytown Lake	National Park Service

C—067319

C-067319

Relaxing and enjoying the simple pleasures

C—067320

C-067320

Table 5. Summary of recreation facilities

	Tent camping	Trailer camping	Picnicking	Boat launching	Mooring/ marina	Swimming beaches	Group camp	Primitive camping
Black Butte	X	X	X	X	X	a	X	
Clair Engle Lake -	X	X	X	X	X	X	X	
Lewiston Lake	X	X	X	X	X	a		
Contra Loma Reservoir			X	X	X	X		
East Park Reservoir -	b		b	b		a		
Stony Gorge Reservoir	b	X	X	X	X	X	X	
Folsom Lake -	X[c]	X	X	X	X	X		
Lake Natoma	X	X	X	X		X		
Hensley Lake	X	X	X	X		X	X	
H.V. Eastman Lake	X		X	X		X	X	X
Jenkinson Lake	X[d]		X	X	X	X		
Keswick Reservoir	b		X	X		a		
Lake Berryessa -	X	X	X	X	X	X		
Lake Solano	X	X	X	X		a		
Lake Red Bluff - Rec. Area			X	X		X		
Dog Island			X			X		
Lake Woollomes			X	X	X	a		
Los Banos Reservoir	X[d]	X	X	X		X		
Millerton Lake	X	X	X	X	X	X	X	X
O'Neill Forebay	X		X	X	X	X		
San Luis Reservoir				b				
Shasta Lake	X[c]	X	X	X	X	X	X	X
Whiskeytown Reservoir	X	X	X	X	X	X	X	

a No beach.
b Available; none developed.
c Boat-in camping also.
d Horsemen's camping also.

C-067321
C-067321

Location and Description

The Auburn Reservoir, authorized as a part of the Auburn-Folsom South Unit, American River Division, Central Valley Project, is being built immediately adjacent to the city of Auburn. (See plate 2.) The reservoir, with a surface area of 10,000 acres, will impound 2,300,000 acre-feet of water on the north and middle forks of the American River for water conservation, flood control, hydroelectric power generation, recreation and fish and wildlife enhancement, and stabilization of Folsom Reservoir immediately downstream.

Potential Enhancement

With projected increases in population and increases in leisure time, mobility, and income, the demand for outdoor recreation facilities in the year 2020 will be at least three times the recreation demand of 1965. In California, the need for facilities near metropolitan areas is critical. The Department of Parks and Recreation has announced as one of its goals the provision of additional recreation near urban centers. The Auburn-Folsom South area is within an hour's drive of the Sacramento metropolitan area and within easy driving range of the San Francisco Bay area, which needs more camping and picnicking facilities now and will need even more in the future. Auburn Reservoir will help meet the recreational needs of these urban areas, and will provide a well-balanced recreation complex for the public.

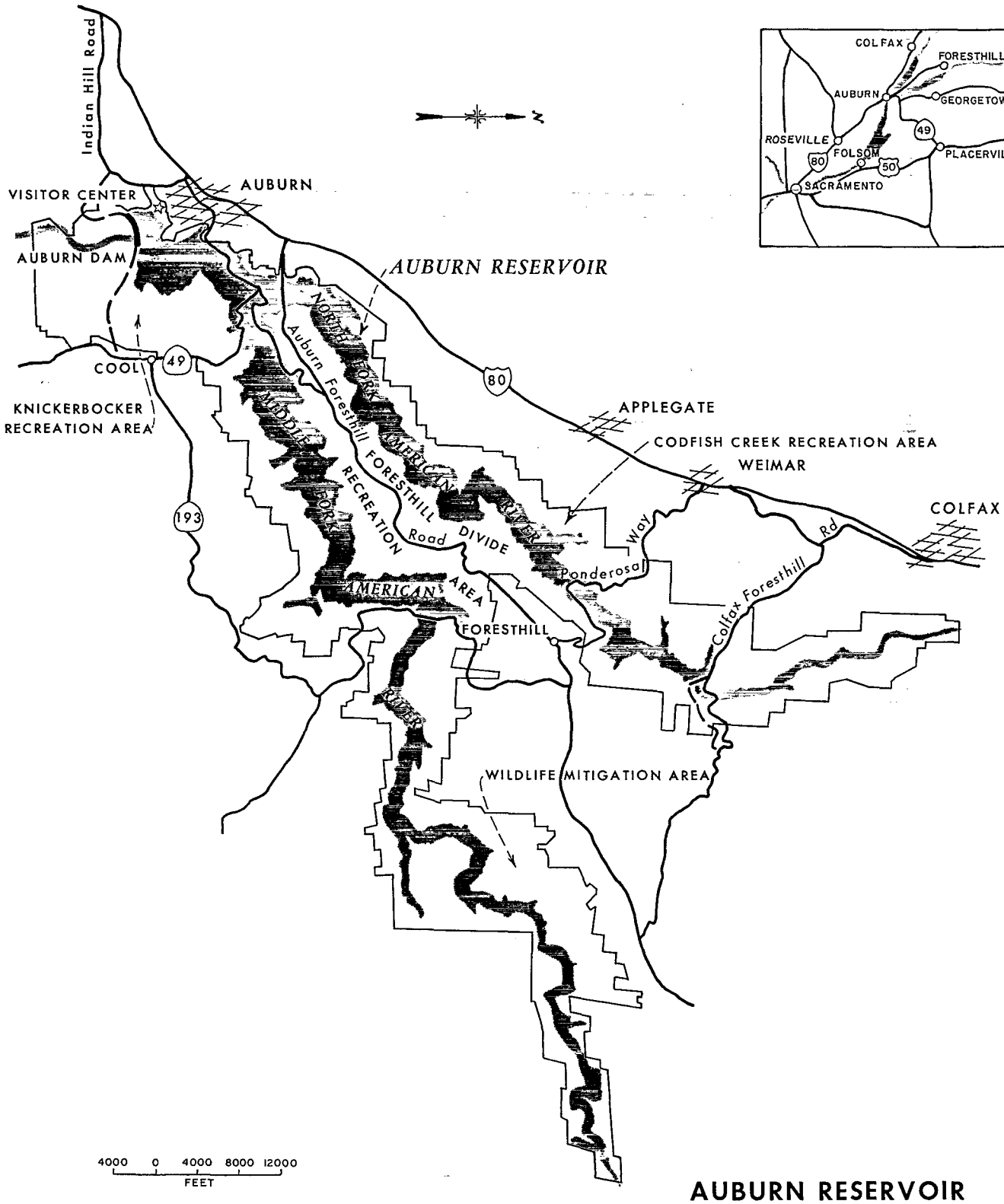
The Auburn-Folsom recreation plan, prepared by the Auburn-Folsom Interagency Task Force in 1966, proposed a development pattern similar to that established at Folsom Lake State recreation area: high density day-use areas and lower density overnight-use areas. That plan is now considered too ambitious in scale and not responsive to present recreation needs. The recreation visitation projection of 2 million visitor-days for the first year of operation is now expected to be somewhat less.

Under an interim agreement, the Department of Parks and Recreation will manage the lands acquired to date. Present access to the recreation lands also will be improved. By January 1977 the State will provide a staff to protect and manage the lands, and to supervise the present limited informal recreation, prior to implementation of the new plan.

C—067322

C-067322

PLATE 2



AUBURN RESERVOIR

C—067323

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Conclusions and Recommendations

1. The original estimates of visitation for the first year of operation at Auburn were high in light of current perceptions of need.

> Plans now being prepared should be based upon up-to-date estimates of demand and use trends and facilities should be provided in stages to meet needs which actually develop.

2. The overall plan for development contained in the 1966 task force report does not consider problems of interim informal use nor trespass by off-road vehicles. Much of this activity is occurring above the high-water elevation.

> Interim measures should be undertaken to halt destruction of ground cover and exposure of soils to possible erosion.

3. The construction program appears to be ahead of the recreation planning. Every effort should be made to have adequate facilities in place when the reservoir is formed.

4. Allocation and scheduling of funds between facilities at Auburn and additional facilities at Folsom appear to be out of balance with expected initial demands and pressures of visitors from the Sacramento metropolitan area. First pressures are expected to be upon Folsom, but funding is scheduled for Auburn.

> Funding schedules for the two reservoirs should be reviewed and revised to reflect expected demands.

C—067324

C-067324

Location and Description

Black Butte Dam and Lake, completed in 1963 by the U.S. Army Corps of Engineers, is located on Stony Creek, 22 miles downstream from Stony Gorge Dam near Orland, Glenn County. (See plate 3.) Legislative action in 1973 placed Black Butte's water supply operations under the Central Valley Project. Financially, it has also been integrated into the project. The Corps of Engineers, however, retained the public use management.

Present Recreation Activities

Present recreation sites are shown on plate 3. The 1975 visitation at the 4,560-foot reservoir totaled 250,890 visitor-days. Recreation facilities include campgrounds, picnic areas, boat-launching ramps, parking areas, water, and sanitation systems.

Present recreation facilities are:

	Camping spaces	Group camping area	Boat-launching lanes	Picnic sites	Marina
Eagle Pass			3	25	
Orland Buttes[a]	31	1	2	c	
Burris Creek[b]					
Buckhorn	24		3	c	1
Total	55	1	8	25	1

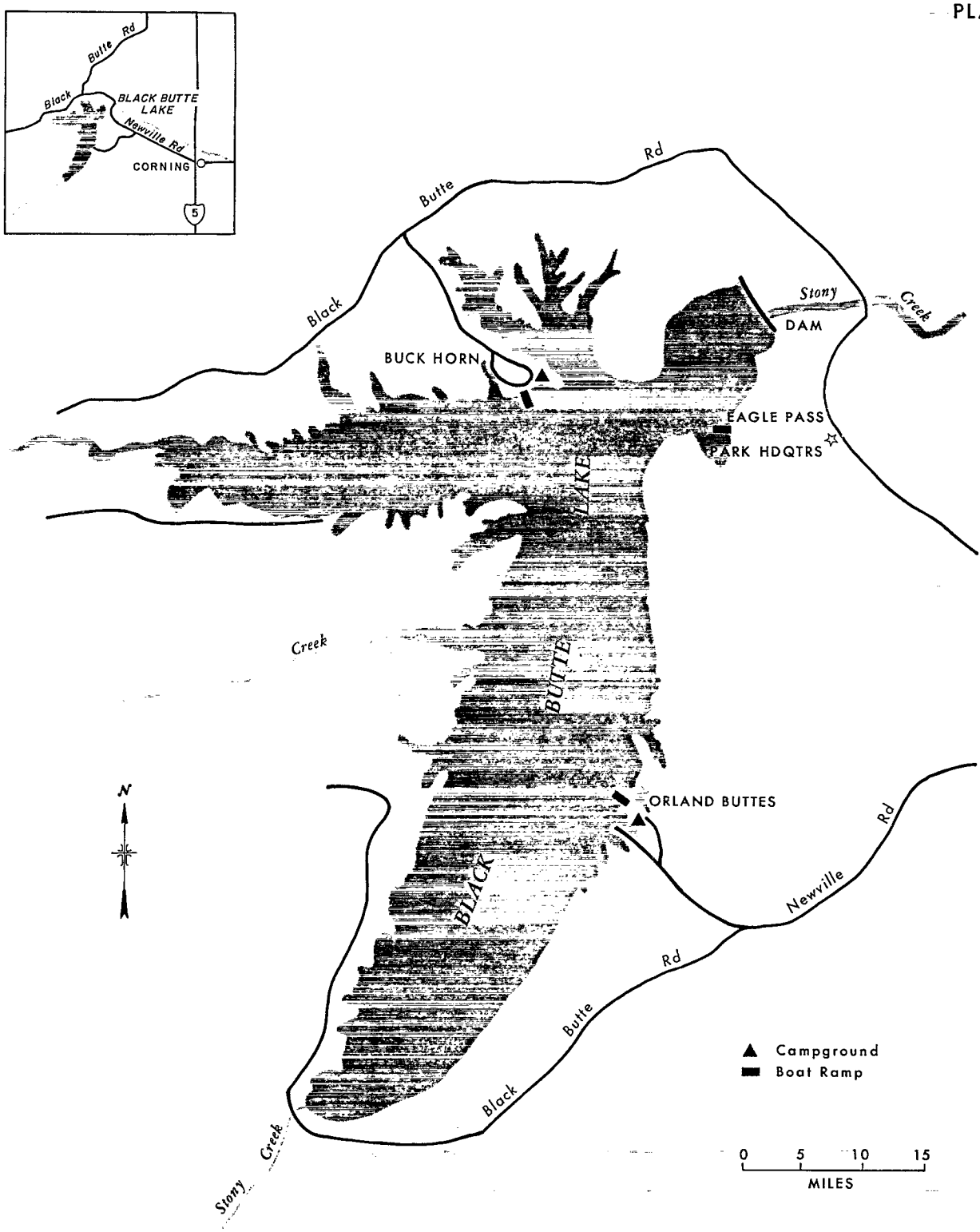
[a] This area undergoing renovations.
[b] Primitive facilities for hunting, fishing, and picnicking available.
[c] Available.

Potential Enhancement

Potential enhancement of recreation at Black Butte would be realized in provisions for motorcycling, camping, and primitive camping. Informal camping at nondesignated sites would be allowed at several locations in a dewatered area below the level of the gross reservoir pool. About 200 additional camping sites would be considered for future addition to the reservoir area.

C—067325

C-067325



BLACK BUTTE LAKE

C—067326

C-067326

Conclusions and Recommendations

1. Future plans should be based on a slow rate of visitation growth.

2. Facilities generally are in good condition although trails and walks are needed. The Corps' plan for rebuilding and upgrading facilities is underway.

3. The quality of roads and structures and the general appearance of the recreation areas at Black Butte are superior to the quality and appearance of facilities at the nearby East Park and Stony Gorge Reservoirs, which have similar topography, setting, and climate.

C—067327

C-067327

Location and Description

Clair Engle and Lewiston Lakes, located in Trinity County, are a unit of the Whiskeytown-Shasta-Trinity National Recreation Area, administered by the U.S. Forest Service under P.L. 89-336. Main access is from State Highway 299 to Weaverville, then via State Highway 3 which parallels the Clair Engle-Lewiston Unit along its west side. The lakes are shown on plate 4.

Out of a total recreation area of 77,500 acres, Clair Engle Lake when full covers 16,500 acres and Lewiston Lake 610 acres. Summer temperatures are pleasant for most outdoor activities in the daytime and cool in the evening. Fishing and hunting under State regulations are recorded outside the main recreation season. The lakes support both a warm and cold water fishery.

Present Recreation Activities

Present recreation sites are shown on plate 4; the recreation facilities are listed on table 6. Usage recorded during the 1975 recreation season at Clair Engle Lake and Lewiston Lake was:

Activity	Clair Engle Lake	Lewiston Lake
	(visitor-days)	
Sightseeing	98,400	32,400
Picnicking	16,800	6,600
Camping	145,350	12,850
Swimming	35,600	a
Water skiing	91,500	a
Boating	1,356,600	39,600
Fishing	44,800	10,000
Hunting	4,800	6,600
Other	209,700	207,000[b]
Totals	2,003,550	315,050

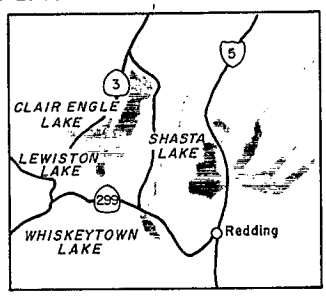
[a] Low-water temperatures caused by withdrawing water from lower levels of Clair Engle Lake make Lewiston essentially unsuitable for water-contact sports.

[b] Hiking, viewing exhibits, and attending visitor programs.

C—067328

C-067328

PLATE 4



Dirt or Gravel Road
Proposed Pacific Crest Trail
Trail
(9) Recreation Sites

0 1 2 3
MILES

TRINITY RIVER
EAST FORK TRINITY RIVER
Coffee Creek
Swift Creek
Stuart Fork
Blue Mtn Road
Clear Creek
CLAIR ENGLE LAKE
TRINITY DAM
LEWISTON LAKE
WEAVERVILLE
Trinity River Fish Hatchery
LEWISTON

WHISKEYTOWN-SHASTA-TRINITY NATIONAL RECREATION AREAS

AUGUST 1976

1158-208-1

C—067329

C-067329

Table 6. Recreation facilities

	Site No.	Camping spaces	Boat ramps	Picnic sites	Swimming beaches	Nature trails	Amphi-theaters
CLAIR ENGLE LAKE							
Fair View	6		1				
Tannery Gulch	9	87	1		1	1	1
Tanbark	10			7			
Stuart Fork	11		1	4			
Kokanee	13			7			
Stony Point[a]	14	22					
Stony Swim[b]	15				1		
Fawn Camp	16	60					
Bushytail	17	40					
Minersville	18	30					
Clark Springs	19	30		7	1		
Ridgeville	20	21					
Hayward Flat	21	108			1		1
Alpine View	22	66				1	
Jackass Springs	25	21					
Mariner's Roost	26	7					
Captain's Point	27	3					
Organization Camp	28	10			1[c]		
Total		505	3	25	4	2	2
LEWISTON LAKE							
Mary Smith	1	18					
Cooper Gulch	2	11					
Pine Cove	3		1	8			
Tunnel Rock	4	6					
Ackerman	5	66					
Total		101	1	8			
OUTSIDE RECLAMATION AREA[d]							
East Weaver	7	10		5			
Rush Creek	8	11					
Bridge Camp	12	8					
Preacher Meadow	23	45					
Trinity Center	24			3			
Trinity River	29	6					
Eagle Creek	30	17					
Horseflat	31	18					
Big Flat	32	5					
Scott Mountain	33	6					
Clear Creek	34	10					
Total		136	–	8	–	–	–
TOTAL		742	4	41	4	2	2

[a] Tents only.
[b] Group camp.
[c] Same as Stony Creek beach.
[d] These recreation facilities are not within the Trinity Unit of the Whiskeytown-Shasta National Recreation Area, but are also administered by the U.S. Forest Service, and are shown on the map. They lie within easy access of the Clair Engle-Lewiston area.

C—067330

C-067330

The general atmosphere at both lakes allows visitors an almost complete rural outdoor experience. The forested terrain and the picturesque backdrop of the Trinity Alps form a very attractive area for outdoor recreation. Water-related recreation activities continue to be the favorites over the 100-day recreation season.

The Trinity River Fish Hatchery, located adjacent to the Lewiston Powerplant on the Trinity River, is also a recreation attraction. The 13-acre facility, operated by the Department of Fish and Game, is funded by Reclamation to mitigate the losses incurred from impoundment features on the Trinity River. The hatchery, with a 40-million-egg capacity, produces an average of 3.0 million king salmon, 244,000 steelhead, and 253,000 silver salmon annually.

In 1975 over 14,000 visitor-days were recorded at the hatchery with 718 days devoted to fishing adjacent to the hatchery. Although the site has no developed recreation facilities, it is popular because of the increasing interest in the Trinity River fishery.

Potential Enhancement

Since the two-lake complex has been available for only 10 years, recreation use has not realized its optimum potential. The U.S. Forest Service has prepared a land use plan for both the Clair Engle-Lewiston Unit and the Shasta Unit. The plan proposes addition of swimming beaches; expansion of commercial houseboat fleets, commercial moorage, and dryland boat storage; addition of and improved distribution of launching ramps, installation of sanitation devices on boats and for overnight stays; construction of one more commercial marina; and permission for some off-road vehicle use.

At the Trinity River Fish Hatchery a simple, yet effective, informational signing program could be provided for self-guided tours. Presently, there are no tours on a daily basis and such a signing program would alleviate this deficiency. A few picnic tables, shade structures and a simple information display could be made available for the visiting public's convenience.

The ongoing joint agency study, "Trinity River Basin Comprehensive Action Program," will evaluate all resources including recreation, and make appropriate recommendations regarding future needs.

C—067331

C-067331

Floating boat dock at Clair Engle Lake

Conclusions and Recommendations

1. Boating and other water-related activities are the most popular recreation activities at the Clair Engle-Lewiston Unit of the National Recreation Area. Planning for future recreation should recognize visitor interest in these activities and respond to increasing demands.

> It is recommended that proposals for expansion of launching, moorage, commercial houseboat numbers, sanitation, and control of boat speeds by zoning, be adopted and implemented.

C—067332

C-067332

2. Sharp and persistent drawdown of water levels in Clair Engle Lake detracts from the recreation experience and reduces total visitation.

> It is recommended that Reclamation consider reoperation of Clair Engle Lake during the recreation season to maintain a higher and stabler water level within the regimen of water supplies, contract commitments, and flood control requirements.

3. When prospective visitors travel off of main routes to any recreation area, such as the units of the Whiskeytown-Shasta-Trinity National Recreation Area, and arrive to find all campsites or picnic sites taken, they generally are dissatisfied and public relations suffer.

> This situation could be prevented by displaying the number of sites available along main routes near junctions of roads leading into the sites. This could be done in a manner similar to the warnings posted by the Division of Highways relative to winter road conditions.

4. Future demands for water from the Trinity River are expected to increase. Also, increased downstream releases are being sought for sustaining a Trinity River fishery. The magnitude or the pattern of these demands are not known, but can be expected to increase the total seasonal drawdown.

> The size and pattern of demands for Trinity River water should be determined. The effect of these demands upon lake levels during the 100-day recreation season also should be determined. A temperature control discharge system for Trinity Dam should be given a high priority.

5. Occupancy of picnicking and camping units averages about 30 percent annually. The Forest Service expects occupancy to increase 10 percent each year.

> No new picnic or camp units should be built until occupancy has reached 70 percent of full capacity. A minimum number of usable boat ramps should be extended by the Forest Service to low-water elevations when water operations permit.

C—067333

C-067333

6. Installation of materials for informal self-guided tours at the Trinity River Fish Hatchery would increase the public's knowledge of how the Trinity operation fits into the resource picture for the basin and the Central Valley Project, and the addition of a few picnic tables and shade trees would make visiting the hatchery more enjoyable.

7. The U.S. Forest Service land use plan presents a comprehensive plan that emphasizes recreation values in accordance with its goals for this National Recreation Area. Full recognition is also given to the natural, historical, and scientific values of the area. Emphasis is given to restoration and maintenance of the southern bald eagle, osprey, and Shasta salamander.

C—067334

C-067334

CONTRA COSTA CANAL

Location and Description

The Contra Costa Canal, located in Contra Costa County, California, originates at Rock Slough where water is diverted from the Sacramento-San Joaquin Delta, and extends 47 miles to a terminal reservoir in the city of Martinez. (See plate 5.) The canal traverses residential districts and some urban and agricultural fringe areas. The canal right-of-way is Bureau of Reclamation property; the canal is managed and operated by the Contra Costa County Water District.

Presently, access to the canal is prohibited except by permit, although trespass occurs frequently.

Potential Enhancement

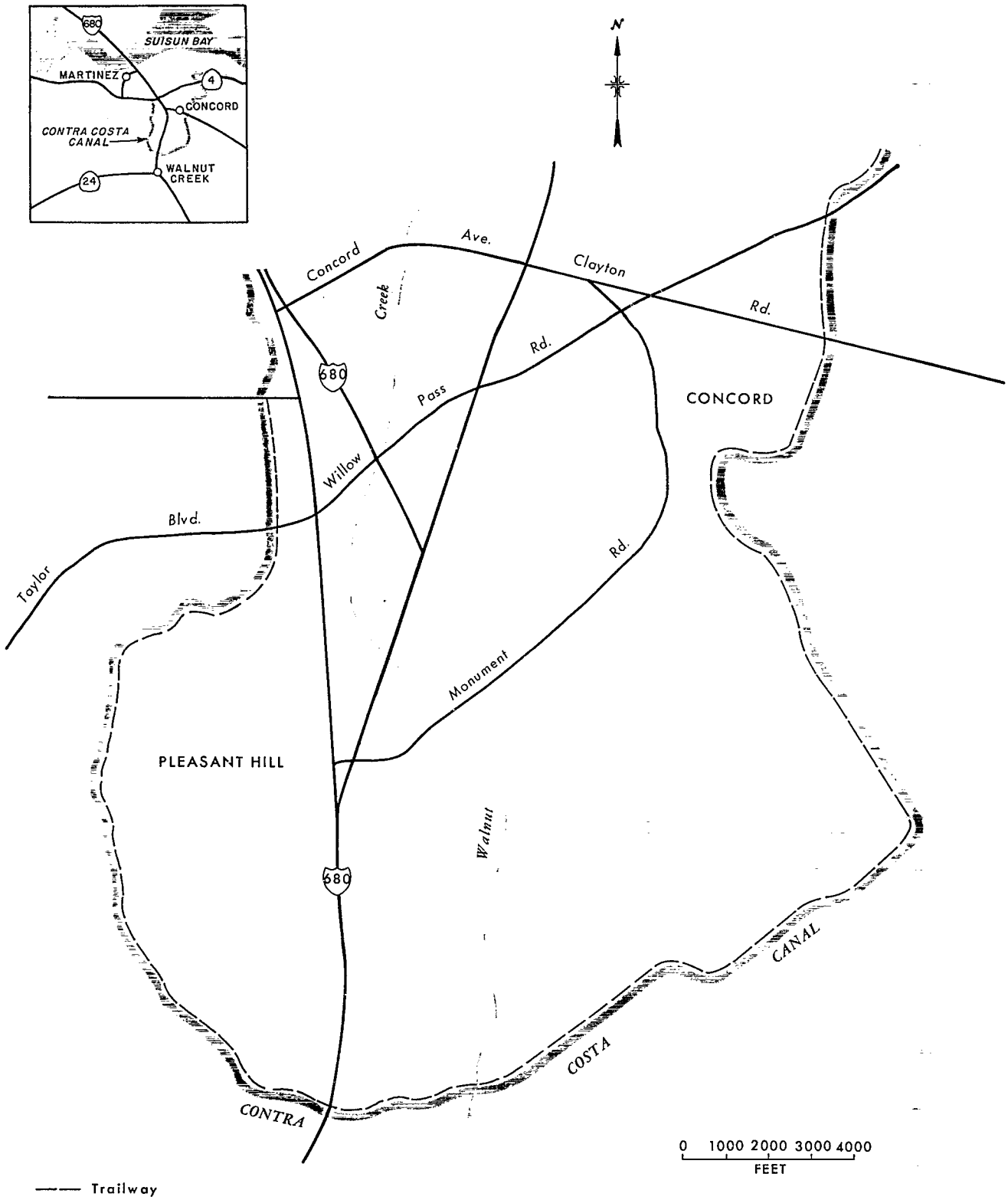
As early as 1964 various local, State, and Federal agencies in their planning documents have considered the recreational capabilities of the Contra Costa Canal. Their recommendations have culminated in a management agreement in 1975 among the Federal Government, the Contra Costa County Water District, and the East Bay Regional Park District for the development, administration, operation, and maintenance of recreation on the Contra Costa Canal.

Land along an 11.44-mile segment of the canal, which passes through the cities of Concord, Walnut Creek, and Pleasant Hill, and unincorporated areas of the county, is proposed for use as a bicycle, hiking, and equestrian trailway known as the Contra Costa Canal Trail. A proposed trail the length of the canal is shown on the East Bay Regional Park District's master plan, "Trail Plans for the County."

The proposed trailway design concept would include the use of the service-road side of the canal as a trail for bicycles, horses, and hikers. Where the terrain is level next to the service road, a separate horse path would be established. Development of the trail would involve the installation of a canal lining fence, modifications of right-of-way gates, and other fencing and landscaping. Access points and intersections would require proper striping and signing. (Existing parks will provide rest/picnic areas at three places.)

C—067335

C-067335



CONTRA COSTA CANAL

C—067336

C-067336

Currently, the environmental impact report for the trail is being revised by the Federal Government. Upon acceptance of this report by public and private concerns, Federal funding will be made available and construction of the Contra Costa Canal Trail can commence.

Conclusions and Recommendations

1. Recent public response to the Contra Costa Canal Trail has indicated some public concern about visitor and traffic safety, and the decrease in property values from vandalism, litter, and offensive horse odors. Although concerns are sincere, any detrimental effects resulting from the trail's development cannot be factually substantiated.

2. Construction of the Contra Costa Canal Trail should proceed when all procedural and public review commitments have been fulfilled. The development of such a trail in a suburban setting would provide a unique recreation resource, as well as an alternative to motorized transportation. Any mitigating measures required to resolve safety hazards of the trail should be undertaken.

C—067337

C-067337

CONTRA LOMA RESERVOIR

Location and Description

Contra Loma Reservoir is located 1.5 miles south of the town of Antioch in Contra Costa County. (See plate 6.) Recreation is administered by the East Bay Regional Park District. The 82-acre reservoir is nestled in a 689-acre oak grassland setting, with hills rising abruptly to the south. The reservoir and lands comprise Contra Loma Regional Park, a unique recreation resource for regional recreation and a community park for local residents.

Adjacent hill lands provide sweeping views of Suisun Bay and Solano County to the north and the Diablo foothills to the south. The area is grazed by cattle to reduce the fire hazard.

Winds, high summer temperatures, soil factors, and rodent populations create adverse growing conditions. Planting programs to provide trees for shade and shelter have failed in the past.

Present Recreation Activities

Present recreation sites are shown on plate 6. The visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	10,630
Picnicking	14,200
Swimming	88,000
Boating	350
Fishing	5,650
Total	118,830

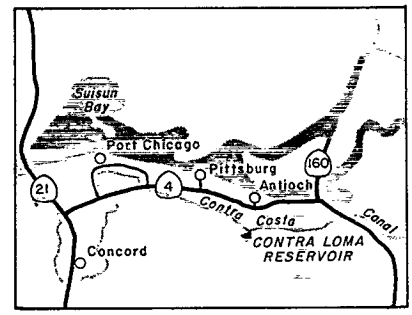
Recreation is presently concentrated at the south side of the reservoir at the beach-marina area, which includes a sand beach, changing rooms, toilets, and picnic tables around an irrigated grass area at the edge of the reservoir. Paved parking for 160 cars and another 300-car-capacity unimproved overflow parking area are available. An old road accommodates a boat-launching ramp nearby. Floating fishing docks are at two locations around the perimeter of the reservoir.

Except for 2 to 4 months a year, the reservoir is maintained at 205 feet, the normal maximum water surface elevation. Drawdown below that level seriously interferes with swimming, fishing, and boating activities.

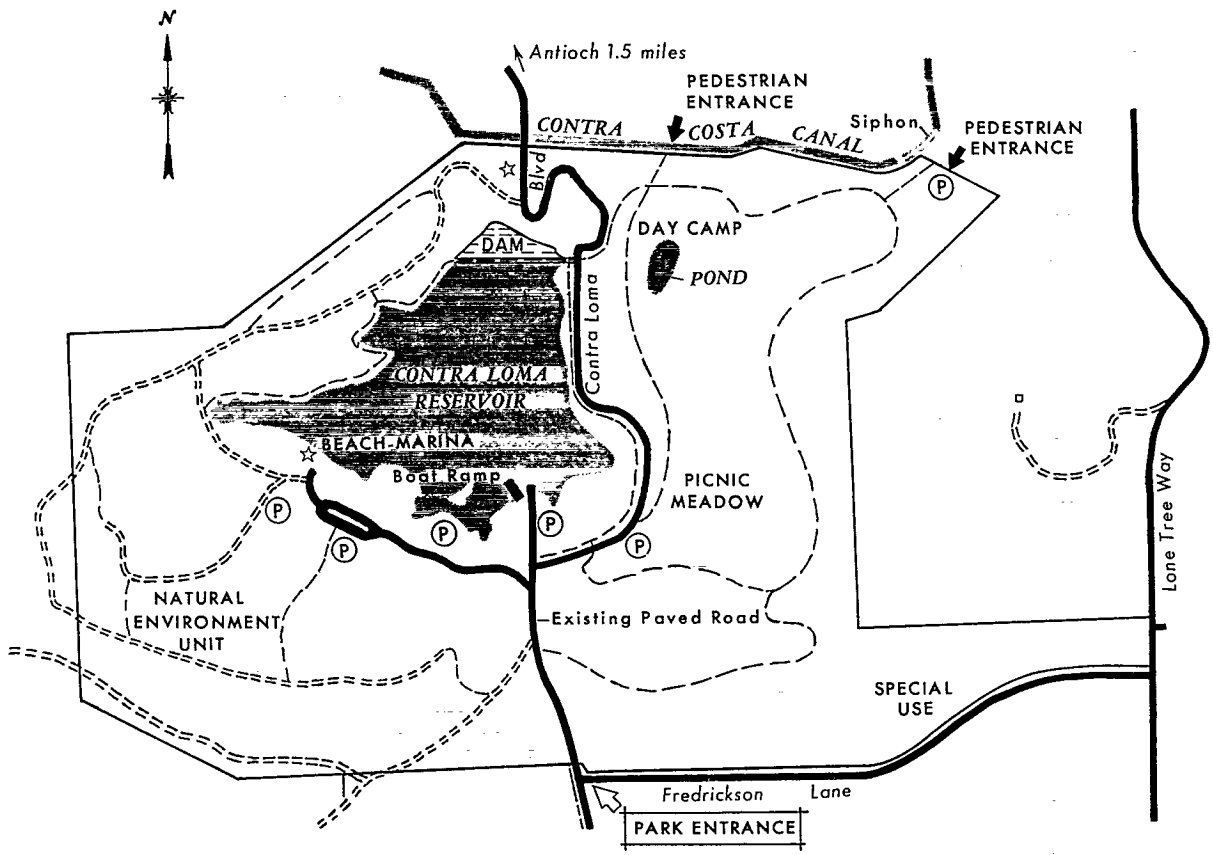
C—067338

C-067338

PLATE 6



Parking Area
Trail
Facilities
Park Boundery
Existing Unpaved Road
Existing Paved Road



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CONTRA LOMA RESERVOIR

Potential Enhancement

Contra Loma Regional Park, with a design capacity of 2,000 visitors, has been operating with temporary facilities since 1968. Recreation demands have increased; estimated highest number of visitors on a peak day was 4,000 people.

Because of overuse of present facilities, the East Bay Regional Park District has adopted a land use plan for the total park to expand facilities and to construct permanent facilities for swimming, boating, and picnicking. For planning purposes, the park has been divided into land use zones: four recreation clusters, a natural environment unit, and the reclamation zone, which is part of Reclamation's operating area for the dam. The proposed plan will increase the capacity of the park to about 6,000 visitors, with a wider range of recreational facilities available. Specific initial development would be:

1. Beach-marina cluster

Swimming area	Drinking fountain
Beach	Change rooms
Picnic sites	Snack bar
Bicycle trails	Information panel
Shade and wind shelters	Security residence
Lawns and shade trees with irrigation system	Lifeguard facilities
	Toilets
Children's play structures	Contact station
Parking, paved or gravel, and overflow parking	Park office
	Service yard

2. Day-camp cluster

Lawns	Shade trees
Wind and shade shelters	Toilets
Picnic tables	Drinking fountains
Barbecue pits	

3. Natural environment unit

Bike trails	Unpaved hiking trails
Stiles	

The natural environment unit is to be maintained in its "natural" condition and managed to protect its natural resources.

The park now has one recreation cluster and a beach-marina area.

C—067340

C-067340

The environmental impact report for the proposed plan has been publicly reviewed. Initial development is expected to cost $350,000 at October 1975 prices. When additional funds become available, these facilities could be constructed.

1. A boat dock with rental equipment.
2. A bait and tackle shop.
3. Fishermen's shelter.
4. Reservable day-camp facilities with pond.
5. Group picnic area (meadow cluster).
6. Connection to municipal water and sewer systems.
7. An equestrian center at the special use area, to be developed by Los Charros, a Mexican horsemen's group.

Conclusions and Recommendations

1. Development at Contra Loma Reservoir recognizes the local and regional significance of the recreation resource. User needs as well as the resource characteristics of the area are being considered in development of onsite facilities and park access.

2. Additional tree planting programs are proposed to encourage visitation to all areas of the park. Native plant materials would be desirable.

3. Current fishery problems of weeds, stratification of the water, and stunted fish could be overcome. An aquatic management program should be implemented to enhance the fishery potential of Contra Loma Reservoir.

4. Access trails from the northern end of the park would pass through the reclamation zone. Specific details of such trails would have to be worked out to the satisfaction of the Bureau of Reclamation and the Contra Costa County Water District.

5. The location of the proposed equestrian center in the flight path of the Antioch airport is potentially hazardous to any large concentration of visitors at the center.

6. Although the park district has limited development funds and general recreational facilities have priority, public financing of such a development should be investigated. Through a specific use permit, the facility could be operated by a private entity.

7. Recreational use may also be extended by reducing the number of days the water level in the reservoir is down. Coordination between the park district and the water district is indicated.

C—067341

C-067341

Location and Description

The Delta-Mendota Canal begins at the Tracy Pumping Plant, 9 miles northwest of Tracy in Alameda County, passes through portions of San Joaquin, Stanislaus, and Merced Counties, and terminates at the Mendota Pool in Fresno County, 117 miles to the south. (See plate 7.) The canal provides irrigation water for agricultural lands en route replacing San Joaquin River flows, and in the winter, is used to fill San Luis Reservoir. The canal, concrete lined for 100 miles and earth lined for the last 17 miles, varies in width from 100 feet in the concrete portion to 139 feet in the earth section. Canal depth is from 14 to 16 feet.

Present Recreation Activities

Present recreation use of the Delta-Mendota Canal is limited to fishing at two access sites, Sites 2A and 5, developed by the State Wildlife Conservation Board in 1964. Location of the sites is shown on plate 7. Visitation in the 1975 season was:

Activity	Site 2A	Site 5
	(visitor-days)	
Sightseeing	560	350
Fishing	500	22,675
Totals	1,060	23,025

The operation and maintenance of the access site is the responsibility of the county.

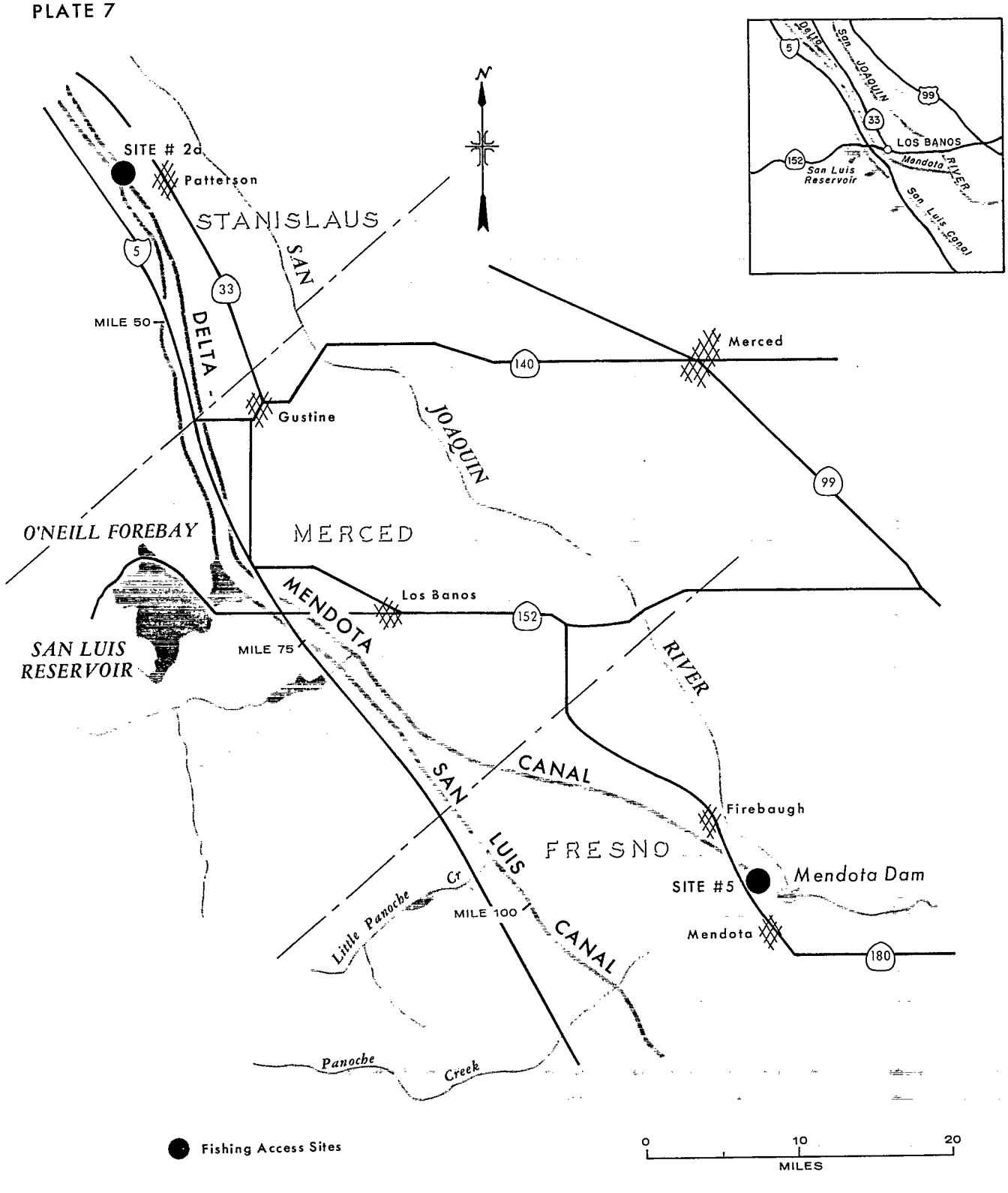
Site 2A, Stanislaus County, located between Zacharis and Sperry Roads, 2 miles west of Patterson near Interstate 5, consists of 87 acres of land with 5 miles of shoreline.

Site 5, Fresno County, 2 miles south of Mendota on State Highway 33, has 570 acres of land with 25 miles of shoreline. Site 5 begins at Fairfax Avenue and ends at the canal's terminus at the Mendota Pool.

C—067342

C-067342

PLATE 7



DELTA-MENDOTA CANAL

C—067343

C-067343

Recreation facilities available are:

Facilities	Site 2A	Site 5
Parking	100 spaces	560 spaces
Portable toilets	8	24
Roads	5 miles	25 miles
Safety devices	available	available

Potential Enhancement

Physical features of the terrain and climate limit the recreational opportunities on the Delta-Mendota Canal. The side slopes of the concrete- and earth-lined portions of the canal, 1-1/2:1 and 2-1/2:1, respectively, are hazardous to both fishermen and wildlife, resulting in the loss of lives. Presently, safety features such as ladders every 500 feet, and ropes before each siphon are installed; yet drownings continue to occur. The hot summer temperatures of the west San Joaquin Valley, coupled with the absence of shade along the canal, restrict its use to the hardy fishermen who cannot travel to a more desirable site.

Conclusions and Recommendations

Recreational opportunities on the canal could be increased from the present level of use . Basic developments such as shade trees, benches, tables, and drinking fountains at each of the fishing accesses could improve conditions and attract other than local visitors to the sites.

Because of the shortage of water-oriented facilities for recreation in the west San Joaquin Valley, enhancement of the existing sites should be encouraged. Adequate safeguards, however, are required or the canal would be hazardous for increased public use.

C—067344

C-067344

EAST PARK AND STONY GORGE RESERVOIRS

Location and Description

East Park and Stony Gorge Reservoirs on the west side of the Sacramento Valley in the foothills of the coastal mountain ranges, are the two storage reservoirs for the Orland Project, located about 90 miles northwest of Sacramento. Water stored in these reservoirs is later used in the Central Valley Project.

East Park Reservoir is located on Little Stony Creek in northern Colusa County (See plate 8.) Stony Gorge Reservoir on Stony Creek is about 18 miles downstream from East Park in western Glenn County. (See plate 9.) Both reservoirs, approximately 20 miles to the west of Interstate 5, are accessible by county roads connecting Interstate 5 with the reservoir areas.

East Park and Stony Gorge Reservoirs are operated by the Orland Unit Water Users Association and recreation administered by private concessionaires. East Park offers 1,820 acres of water surface and 600 acres of land for recreation; Stony Gorge provides 1,275 acres of water and 1,161 acres of land.

Present Recreation Activities

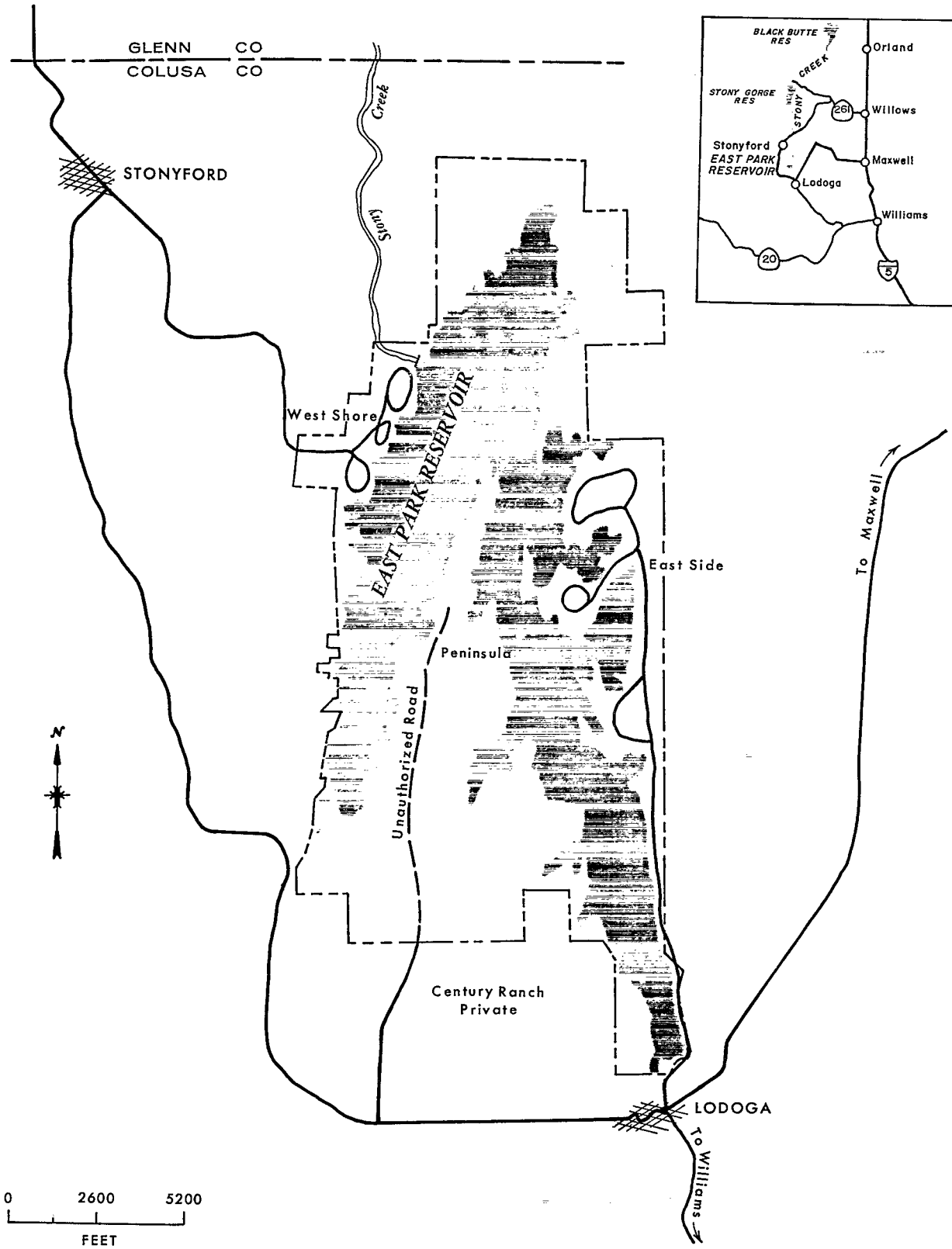
Visitation for the 1975 season was:

Activity	East Park	Stony Gorge
	(visitor-days)	
Sightseeing	710	4,824
Picnicking	1,774	9,558
Camping	10,643	29,887
Swimming	7,095	2,643
Water skiing	5,321	20,735
Boating	3,548	827
Fishing	6,030	4,948
Other	355[a]	783[a]
Totals	35,476	74,205

[a] Unauthorized ORV use.

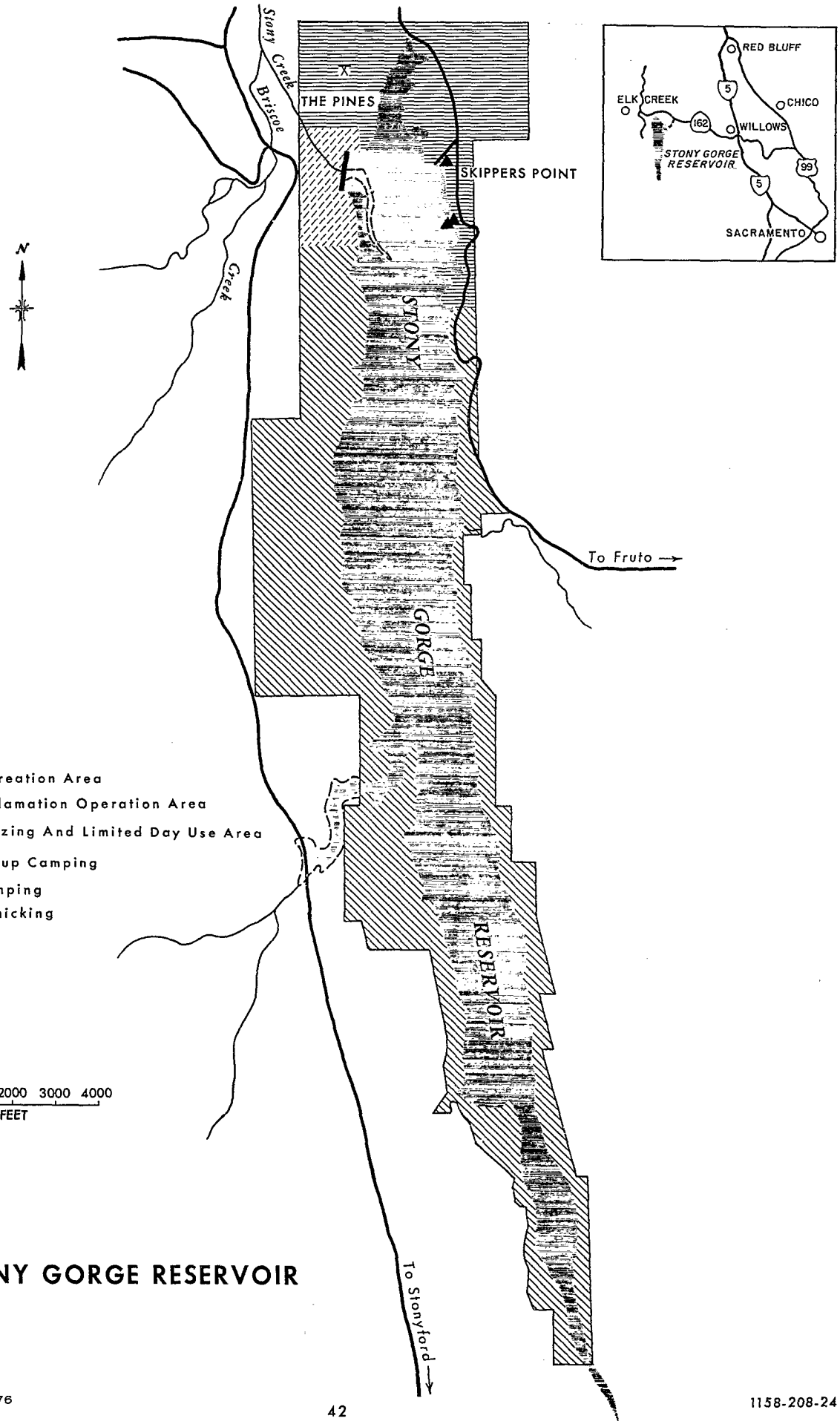
C—067345

C-067345



EAST PARK RESERVOIR

PLATE 9



STONY GORGE RESERVOIR

AUGUST 1976

1158-208-24

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C-067347

Present recreation facilities are:

	Camp-grounds	Camping spaces	Boat-launch ramps	Picnic sites	Swimming beaches	Moorage spaces
EAST PARK						
East Side (500 acres)		a	b	a	b	
West Shore (100 acres)		a	2	a	b	
STONY GORGE	10[d]	500[e]	2	c	3	25
Total	10	500	4	-	3	25

[a] Many undeveloped.
[b] Several undeveloped.
[c] 35 picnic tables and 1 shelter.
[d] Trailer camp with 17 spaces; 1 group camp for 150 people. No facilities.
[e] Undeveloped except for trailer sites.

East Park Reservoir. Two main sites, generally referred to as the east side and the west shore are developed at East Park. Day-use and overnight camping are permitted at both areas. Most of the visitation occurs on the east side where a trailer camp has become established over the years. About 78 trailers with attachments and structures were installed at random locations for indefinite periods, with some used as homesites. The deadline for removal of these trailers and makeshift cabins was June 1, 1976. All structures have been removed, but some debris remains.

Boat launching, swimming, picnicking, and tent-camping have been allowed at the whim of the visitor. No areas have been defined except by the existing patterns of public use pressure and by a "braided" road system with little or no control. There are minimal water supplies and sanitary facilities.

Stony Gorge Reservoir. About 50 percent of the visitors to Stony Gorge Reservoir come from communities in Glenn County. Camping, water skiing, picnicking, and fishing are the most popular activities. Recreation facilities are concentrated on 45 acres of land at Skipper's Cove in the northeastern corner of the area. Individual sites are not designated. The appearance of the facilities is generally unattractive and sanitary facilities are inadequate. The area is hot and dry with few shade trees.

C—067348

C-067348

One of the makeshift cabins which was removed from East Park

Potential Enhancement

East Park Reservoir. Significant recreation use of the area by local and San Francisco Bay area visitors is experienced. The reservoir has potential for additional recreation through the implementation of a management plan to provide for improved access and better control of visitors by the addition of designated roads, parking, camping, and picnicking sites. Modest improvements in existing facilities would expand the number of visitors and assure a higher quality recreation experience for present visitors.

The day-use area at East Park should be separated from the overnight area. Internal roads should be located to reduce disturbance to overnight visitors by day-use visitors.

In 1969 the National Park Service proposed placing most of the recommended facilities at East Park on the peninsula and reserving the east side area for riding and hiking. The west side would serve only a minor role in providing recreation for the lake.

C—067349

C-067349

Stony Gorge Reservoir. Despite the hot, dry climate and lack of shade at Stony Gorge Reservoir, the area could support more visitors and offer a more pleasant recreation experience if facilities were improved. Recent efforts were made to upgrade utilities for the designated 18 trailer spaces. Several management problems could be eliminated, however, if the area were converted to allow day use and overnight camping.

Conclusions and Recommendations

East Park Reservoir.

1. East Park Reservoir has adequate land for implementing a general development plan if the proper areas are selected. The first phase would be development of a recreation area of 30 picnic and 30 camp units on the east side. Opportunities for picnicking, camping, boating, fishing, and swimming would be provided, along with a paved access road, parking, water, and vault toilets. The second phase should include a similar unit for the west side of the reservoir at the site presently being used.

> It is recommended that the two present recreation areas--the east side and the west shore--be designated for future development.

2. The National Park Service's recreation development plan for East Park, June 1969, does not adequately recognize nor designate the proper location for needed facilities and activities. While in draft form, the plan should be updated and reviewed for adequacy by Reclamation.

3. The National Park Service recommended development on the peninsula. The peninsula, however, is too difficult to develop because of its configuration, slope, and lack of permanent access from the east side main entrance. There is access to the peninsula from the west.

> The peninsula should not be developed, but should be retained in its present natural state for hiking, horseback riding, boat-in picnicking, and wildlife viewing.

4. Indiscriminate picnicking, camping, and parking at East Park result in conflicts among visitors and in general disorder. Picnicking, camping, and parking spaces should be clearly designated and used for these purposes only.

5. Indiscriminate driving of vehicles through the east side area has created a maze of roads and ruts, resulting in soil erosion and destruction of ground cover each recreation season. Access and circulatory roads should be designated and maintained and vehicles confined to those routes. Driving conditions are dangerous to those unfamiliar with the roads.

C—067350

C-067350

6. Permanent trailer parking has caused many problems. Trailer removal will eliminate those problems. If such trailer owners wish to use the reservoir, an area and facilities to accommodate them should be built on private land.

7. Physical facilities and recreation management at East Park need to be improved immediately.

> If sufficient funds can be appropriated, it is recommended that the Bureau of Reclamation assume administration of recreation at East Park Reservoir and implement the recommendations listed here.

8. The optimum recreation potential of East Park will never be realized under present reservoir operating criteria.

> It is recommended that a minimum pool of 10,000 acre-feet be maintained throughout the recreation season. The difference between present minimum pool of 5,000 acre-feet to protect fisheries and the recommended figure of 10,000 could be made up by exchanges between the CVP system and the Orland Project.

Stony Gorge Reservoir.

1. Buildings and trailers at Stony Gorge Reservoir should be upgraded and relocated. Complete removal of all trailers and conversion of the area to day use and overnight camping should be considered when expansion is proposed and when a higher priority of use for this area is justified. Justification does not exist now.

2. The narrow ridge along the entrance road to Stony Gorge is the only area with shade and utilities available. Visitor congestion and confusion can be eliminated by designating areas for visitors and be creating an orderly system of vehicle entry and egress.

3. Poor quality of facilities detracts from the recreation experience.

> It is recommended that a general development plan be prepared for a small recreation area, designed to provide quality day-use recreation.

4. Adequate administration of recreation at Stony Gorge appears impossible under the present lease agreement.

> It is recommended that the Bureau of Reclamation assume administration of Stony Gorge recreation after the concessionaire's lease has expired.

C—067351

C-067351

FOLSOM LAKE AND LAKE NATOMA

Location and Description

Folsom Lake State recreation area is located in the Sierra Nevada foothills, 25 miles east of Sacramento, just off U.S. Highway 50. The area, comprised of Folsom Lake and Lake Natoma, is administered by the Department of Parks and Recreation. Access from the west is by Interstate 80 and from the east by State Highway 49. (See plates 10 and 11.) County roads interlace the region and provide entrance to the various coves of the lakes. Folsom Lake offers 4,875 acres of land and 11,850 acres of water surface. Lake Natoma provides 783 acres of land and 500 acres of water surface.

Present Recreation Activities

Present recreation facilities are shown on plate 10 and 11 and listed in table 7. Visitation for the 1975 season was:

Activity	Folsom Lake (visitor-days)	Lake Natoma (visitor-days)
Sightseeing	569,055	8,519
Picnicking	847,165	114,787
Camping	59,900	6,053
Swimming	278,109	11,882
Water skiing	38,507	0
Boating	241,741	12,555
Fishing	81,294	7,174
Other	23,532	63,223
Totals	2,139,303	224,193

Eighty percent of the annual visitation to Folsom Lake State recreation area comes from the Sacramento region. Folsom Lake's developed recreation facilities include 23 boat-launching lanes, two campgrounds, three swimming beaches, five picnic areas, and a boat marina. Lake Natoma offers three boat-launching lanes, one campground, swimming, and picnic areas. Swimming, high-performance boating, and water skiing are popular recreation activities at Folsom Lake; sailing, trolling, and canoeing at Lake Natoma.

C—067352

C-067352

Nimbus Dam Shoals and the Nimbus Fish Hatchery also are popular recreational spots. Nimbus Dam Shoals fishing access site, a 20-acre parcel of flood plain adjacent to the American River, is located 200 feet downstream from the Nimbus Dam, and is easily accessible from the Hazel Avenue exit off U.S. Highway 50. At present, the area is operated by Reclamation's office at Folsom. Riparian vegetation covers one-third of the access site; two seepages provide small freshwater ponds. In 1975, over 6,000 fishermen caught an estimated 12,000 fish. The area is most popular during the fish runs and when the shoals are not subject to floodwaters.

The Nimbus Fish Hatchery is located on the American River, downstream from Nimbus Dam, south of the Hazel Avenue Bridge. The 20 acres of land, operated by the Department of Fish and Game and funded by Reclamation, are devoted to fish holding, rearing ponds, and associated fish hatchery facilities. The 30-million-egg-capacity hatchery produces an average of 3.25 million king salmon smolts, 200,000 king salmon yearlings, and 0.5 million steelhead for mitigation purposes on the American River. Although there are no developed recreation facilities, 97,665 visitors viewed the operation of the hatchery in 1975. Many visitors take part in the informal tours frequently arranged for educational groups.

A State freshwater-trout hatchery, laboratory buildings, and a site for a future Department of Fish and Game Regional Office headquarters are located on Reclamation lands below the Nimbus Hatchery.

Potential Enhancement

The Department of Parks and Recreation is preparing a general development plan for the Folsom Lake State recreation area, to update the Auburn-Folsom recreation plan prepared by the Interagency Task Force (October 1966). Many considerations in the preparation of the plan could change the recreational status of the lakes.

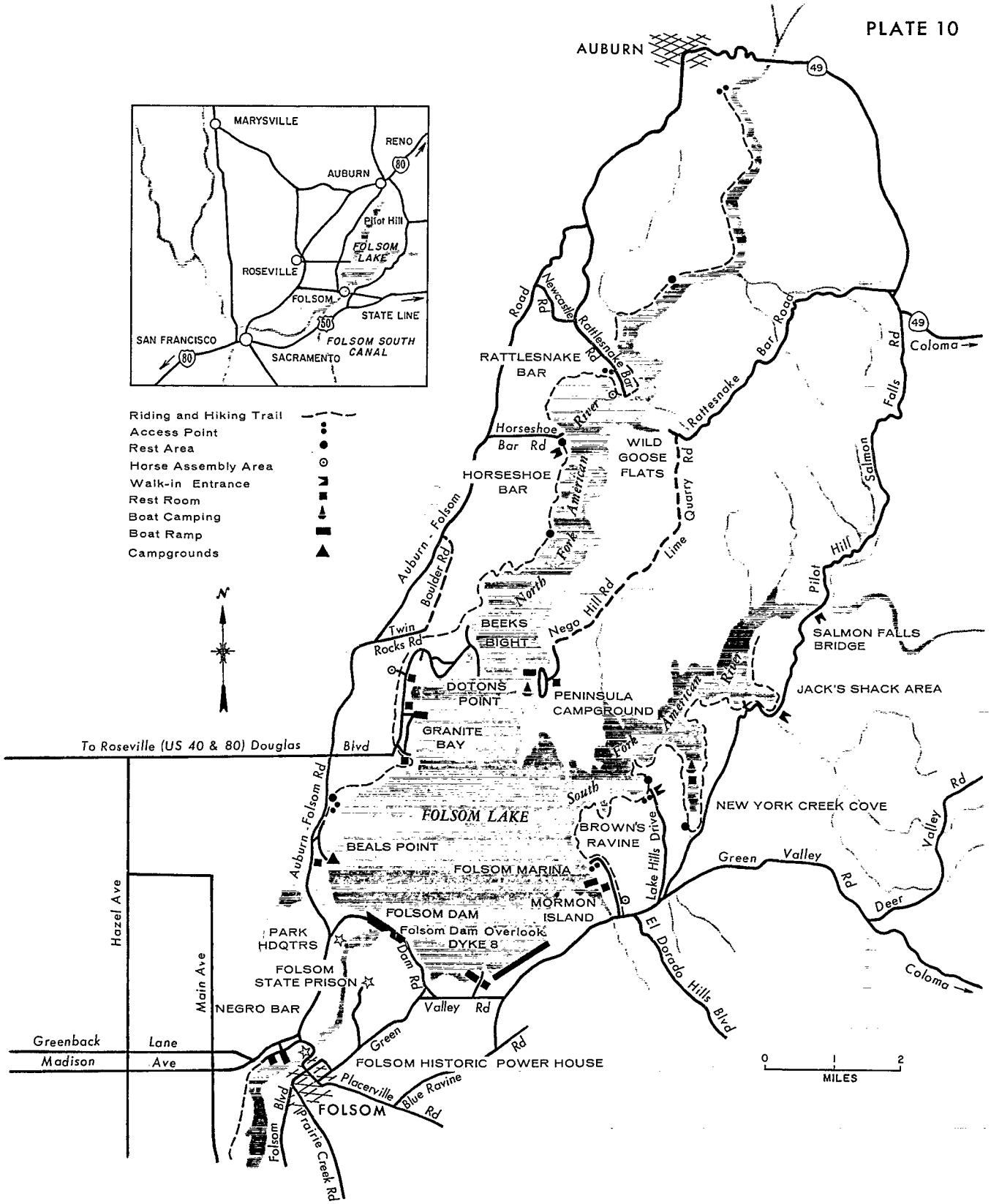
Previous management policy concentrated on facility development and discouraged visitation in unsupervised areas. Current management policy is encouraging greater public access to lands adjacent to the lakes and development of new sites when there is sufficient demand.

A greater emphasis is now placed on the regional significance of recreation areas. The Director of the Department has also stressed the importance of recreational areas close to metropolitan centers as these areas provide outstanding social benefits to the underprivileged who are unable to travel greater distances.

C—067353

C-067353

PLATE 10

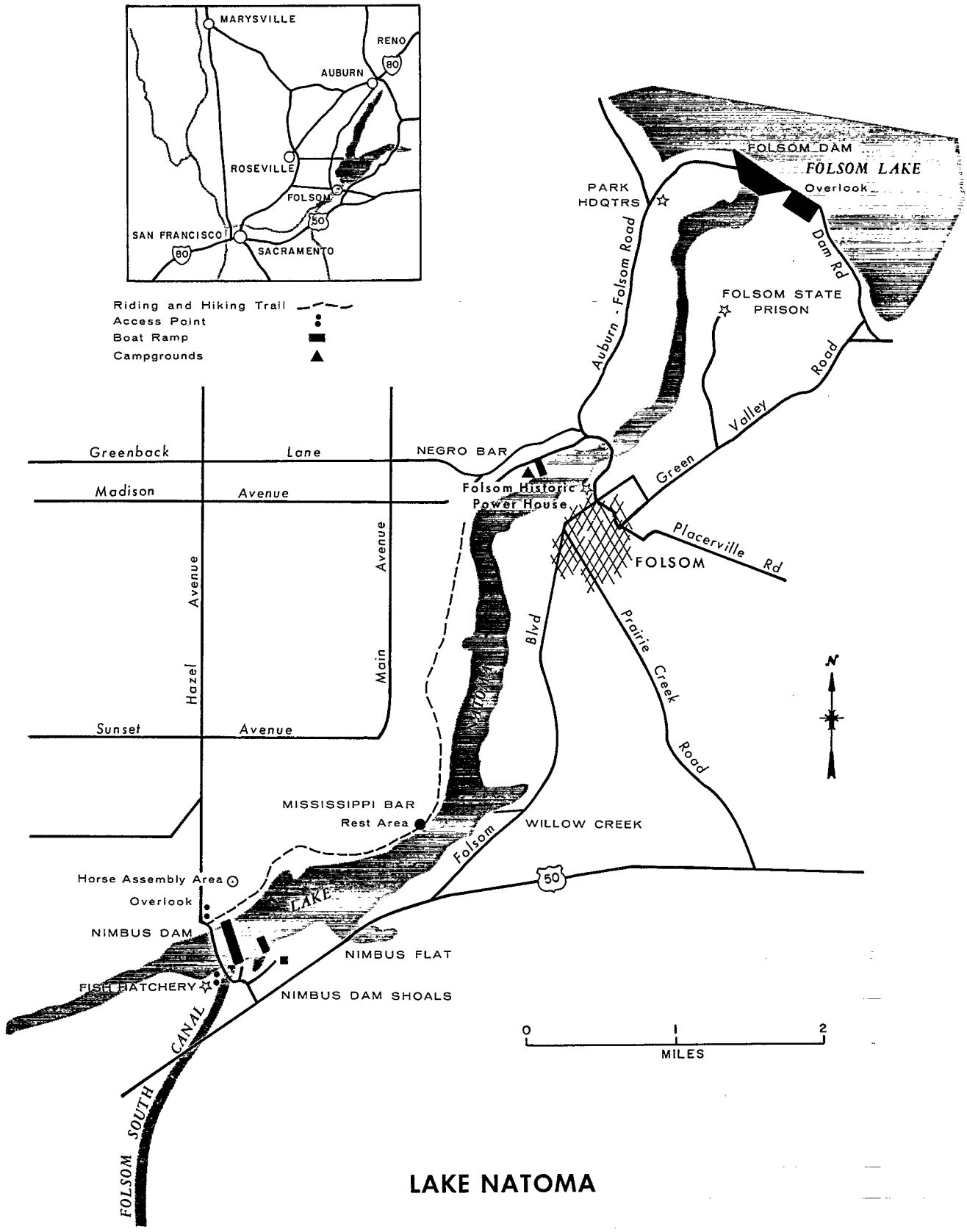


FOLSOM LAKE

C—067354

C-067354

PLATE 11



LAKE NATOMA

C—067355

C-067355

Sunbathing and swimming at Granite Bay

Table 7. Recreation facilities

	Camping sites	Boat-launching lanes	Picnic sites	Swimming beaches	Marina berths
FOLSOM LAKE					
Beals Point	30		1	1	
Granite Bay		12	2	1	
Rattlesnake Bar		2			
Wild Goose Flat[a]					
Peninsula	100	1[b]			
New York Creek[c]					
Brown's Ravine		4	1		602
Dike 8		4	1		
LAKE NATOMA					
Negro Bar	20	6	3	1	
Total	150	29	8	3	602

[a] 30 boat-in camping sites under construction.
[b] Two-lane ramp proposed.
[c] Boat-in camping available.

C—067356

C-067356

The type of activities offered, the season of use, and the kind of facilities required at Folsom Lake will be affected by the completion of Auburn Dam and Reservoir. The dam, now under construction, will stabilize the amount of water that is drawn down during the recreation season at Folsom Lake to give the lake a more stable and higher water level.

Although specific facility development recommendations will not be known until the general development plan is completed in 1977, the following enhancement features are being considered:

1. Construction of a marina at Beals Point, Brown's Ravine, or at the Folsom Dam overlook.

2. An additional boat-launching site located on the South Fork arm.

3. Additional camping sites exclusively for boat-in use.

4. Acquisition of land required to incorporate perimeter roads into park boundaries.

5. The designation as a wildlife habitat and nature study reserve of a 120-acre marsh presently leased for grazing.

6. Development of sufficient campgrounds and beaches when demand indicates the need, and when development does not degrade the resource.

7. Interpretive facilities and possibly an interpretive program for local schools to conduct environmental education classes.

8. Trail systems that connect areas within the park and integrate outlying areas to the park. A bikeway across Folsom and Nimbus Dams is currently under review. As an alternative, a bikeway should be considered, using the equestrian bridge under the Hazel Avenue bridge.

9. Various landscape improvement features to realize the potential of Nimbus Dam Shoals fishing access site. These features include designated parking areas, road scar treatment, erosion control, road alinement, restroom facilities, and trash cans, as well as a signing program that would display the interconnection of the fishing access with the nearby Folsom South Canal bikeway.

C—067357

C-067357

Completion of these enhancement measures are pending the commitment of funds from the State of California Wildlife Conservation Board, and a commitment from a managing agency for operation and cost sharing. Until these are accomplished, Reclamation can provide only minimal operational assistance, unless specific funds are authorized for recreation-related construction and operations.

10. Signs and displays at the Nimbus Fish Hatchery should indicate Reclamation's participation in the hatchery. Because of the popularity of the hatchery, facilities could be developed that increase viewing accessibility and provide a greater emphasis on interpretation of the fishery.

Conclusions and Recommendations

1. The Auburn-Folsom recreation plan prepared by the Interagency Task Force (October 1966) is inadequate in assessing reasonable development for the Folsom Lake State recreation area. The general development plan presently under preparation by the Department of Parks and Recreation should be based on up-to-date estimates of visitation and use trends.

2. Future development at Folsom Lake-Lake Natoma should recognize the regional significance of the recreation area. Visitor access and recreation use trends should be considered as a paramount issue. However, the integrity of the resource setting should not be damaged.

3. Although conflicts may arise between power- and sailboating uses, it is difficult to justify zoning of the activities on the surface of the lakes. Distributing access around the lakes could alleviate overcrowding of present areas.

4. Nimbus Dam Shoals fishing access site offers great potential as a local recreation resource for the Sacramento metropolitan area.

> If a managing agency cannot be found to assume operation, the Bureau of Reclamation should proceed in obtaining increased funds for its construction and operation.

5. An informational signing program at Nimbus Fish Hatchery would coordinate the fish facilities with the nearby water development features of Reclamation.

C—067358

C-067358

Location and Description

The Folsom South Canal, now under construction, will extend southward from Nimbus Dam on the American River, about 69 miles to Lone Tree Creek in southern San Joaquin County (see plate 12.) The first two reaches of the canal are now in operation. Four miles of trail, to serve cyclists and hikers, have been completed along the canal.

Present Recreation Activities

Present recreation facilities are shown on table 8. The trail, administered by the Bureau of Reclamation, was used by an estimated 3,200 visitors during 1975.

The first section of the recreation trail extends from Nimbus Hatchery to Sunrise Boulevard. The Nimbus Hatchery staging area is also on the American River Parkway trail, making easy movement between the two trails possible. To accommodate recreationists and maintenance crews, a tunnel was built under Highway 50 and the Southern Pacific Railroad tracks. The paved service road, along the west side of the canal, has been striped to designate its use for bicycles. Small parcels of land have been acquired for the White Rock staging area (1+ acre) at the junction of White Rock Road and the canal, and the staging area (2 acres) near the junction of the canal and Sloughhouse Road.

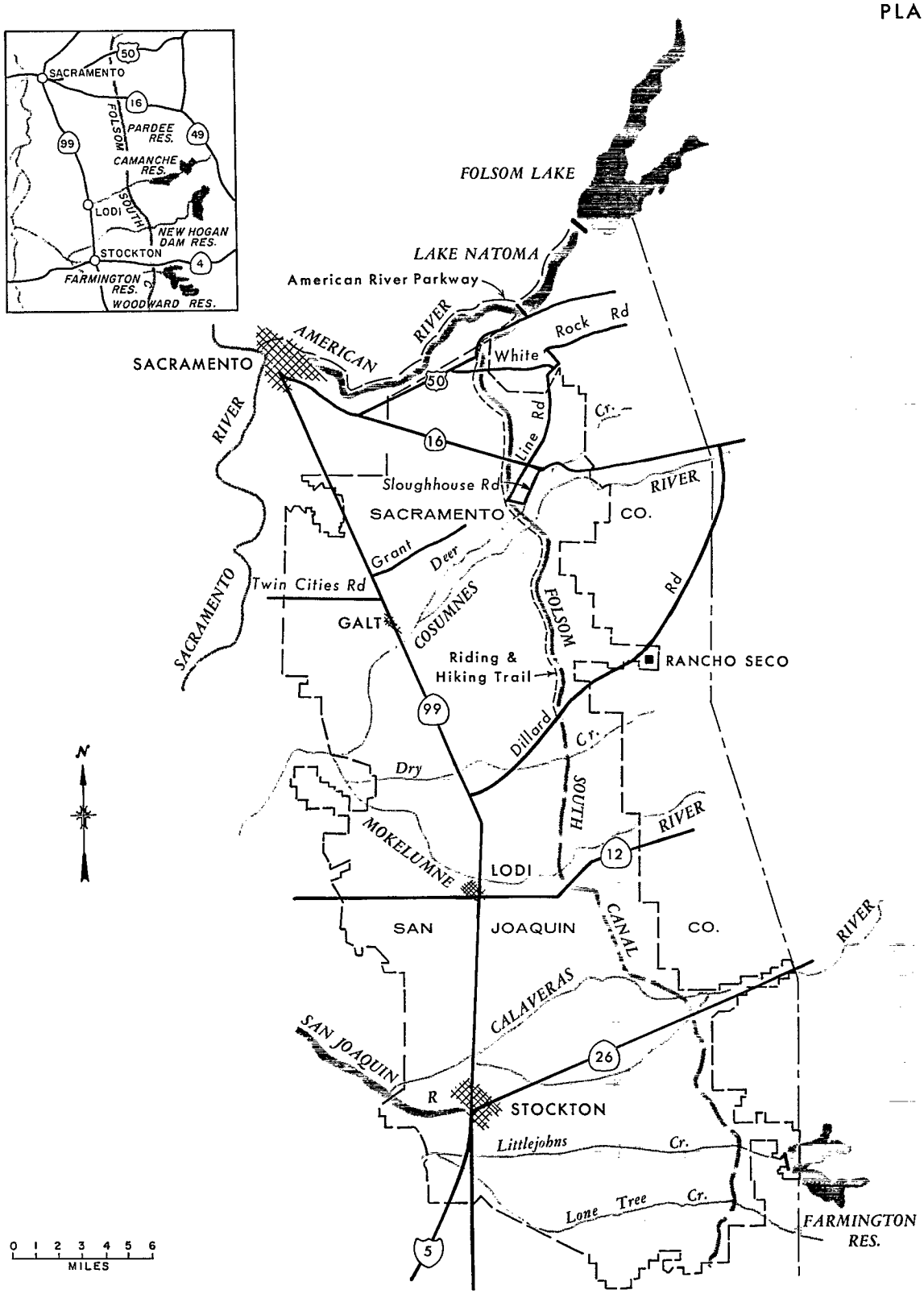
Table 8. Recreation facilities

	Parking		Restrooms		Picnic grounds	Landscaping
	Present	Future	Present	Future	Present	Future
Libby-McNeil-Staging area (Nimbus Hatchery)	Yes	Yes	2	2	No	Yes
White Rock-Staging area	1	1	0	2	Yes	Yes
Douglas-Special use area	0	1	0	2[a]	No	No
Sloughhouse-Staging area	1	1	0	2		Yes

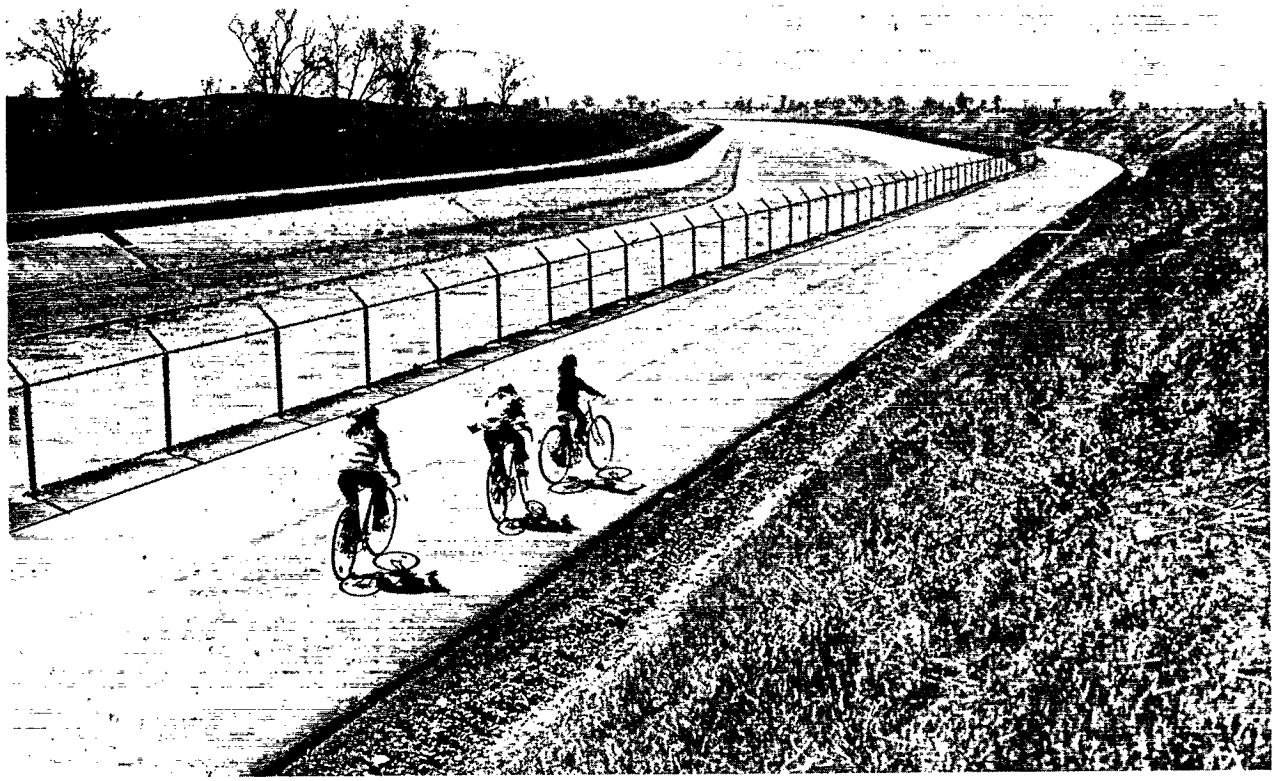
[a] Temporary.

C—067359

C-067359



FOLSOM SOUTH RECREATION TRAIL



Bicycling along the Folsom South Canal Trail

Potential Enhancement

Potential enhancement for the first two reaches of the canal, a distance of 22 miles, would include development of the four sites listed in table 8. Development of a separate equestrian trail should be considered.

At the canal's junction with the Twin Cities Road, the trail could also connect with SMUD's existing Rancho Seco recreation area which is about 4 or 5 miles east of the junction.

Conclusions and Recommendations

Hiking and bicycling could be enhanced by providing access to other existing or planned trails in the area. Plans should be developed to extend the bicycle and hiking trail as the canal is completed.

C—067361

C-067361

HENSLEY LAKE (Hidden Dam)

Location and Description

Hensley Lake, located on the Fresno River in the Sierra Nevada foothills, about 15 miles northeast of the city of Madera via County Road 400 (see plate 13), is the reservoir for Hidden Dam, recently completed by the U.S. Army Corps of Engineers. The Corps will operate and maintain the dam and reservoir; the irrigation function is financially integrated with the Bureau of Reclamation's Central Valley Project.

Prior to construction of the dam, little or no recreation use existed in the area. The river, containing only intermittent flows during dry periods, sustained no significant fishery or water-oriented recreation. Private ownership of lands restricted public access and limited recreation use to small game and bird hunting by a few local residents.

The reservoir began filling in January 1976. Although no visitation records were kept, the reservoir attracted some fishing use during the summer of 1976.

Potential Enhancement

At normal recreation pool, the reservoir will have 650 surface acres and a shoreline of about 15.5 miles. Approximately 65,000 visitor-days are expected the first year with a full reservoir. Within 75 years, optimum use of about 1.5 million visitors annually will be realized. Initial and future facility developments are shown on table 9.

Boating, fishing, picnicking, and swimming will be the most popular activities offered at Hensley Lake. Also available will be camping, sightseeing, water skiing, and hunting. To accommodate these uses, initial facilities have been constructed. Additional areas are slated for phased development before next recreation season.

Conclusions and Recommendations

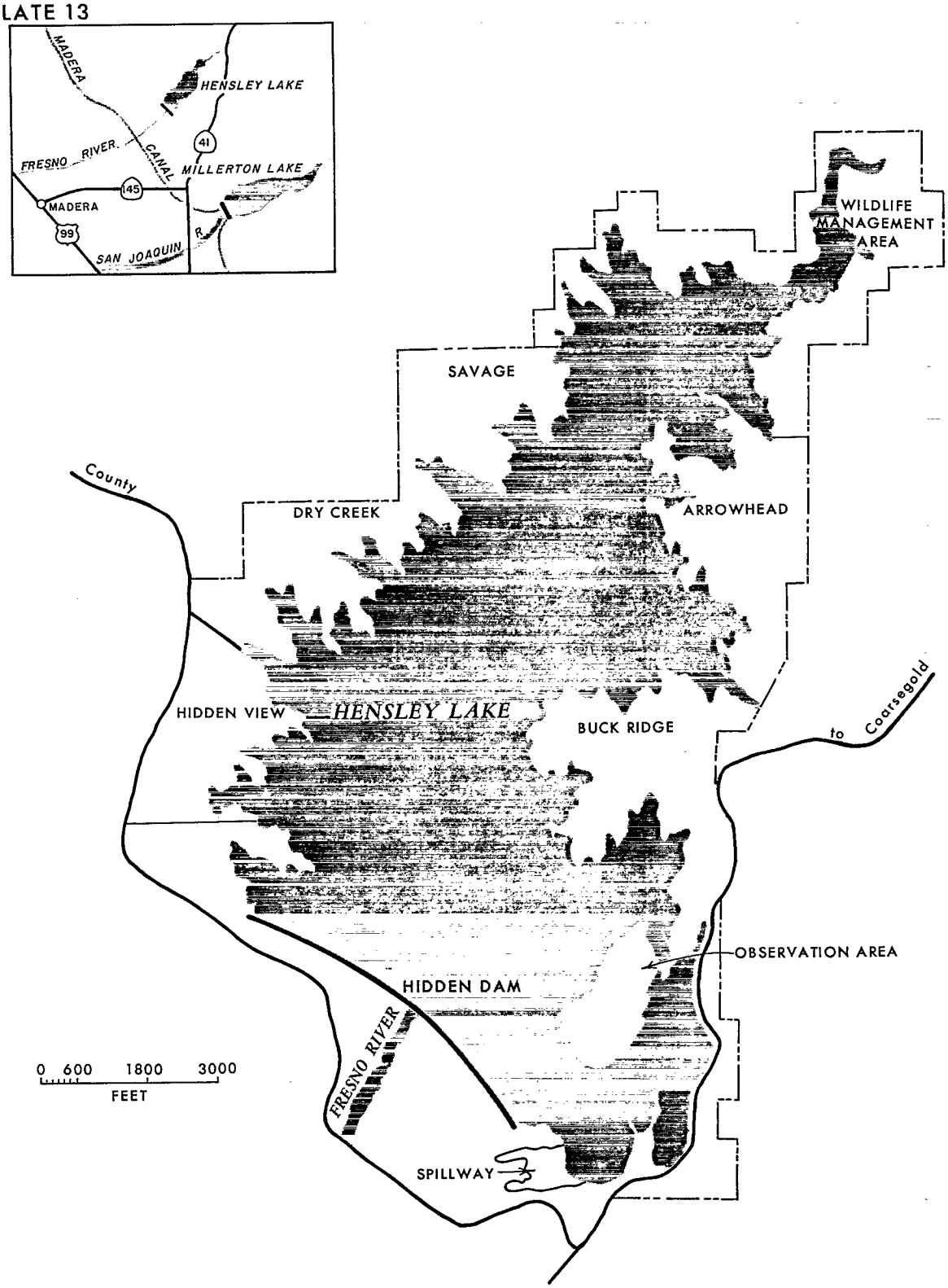
1. Five reservoirs, a national forest, and the entrance to Yosemite National Park are within a 50-mile radius of Hensley Lake. Extreme overuse of existing facilities at these areas shows the large demand for outdoor and water-oriented recreation in this region. To alleviate this problem, recreation facilities should be developed that maximize the potential of the area.

2. Project operation personnel have already been assigned to the lake area to assure that public use of the area will not damage natural resources of the site before all features are completed and operational.

C—067362

C-067362

PLATE 13



HENSLEY LAKE

Table 9. Recreation facilities

	Camping sites	Boat-launching lanes	Picnic sites	Swimming beaches	Visitor center
INITIAL					
Hidden View	66	3		1	
Dry Creek area					
Savage area					
Wildlife management area[a]					
Arrowhead area					
Buck Ridge		3	55	1	
Observation area	—	—	10	—	1
Total	66	6	65	2	1
POTENTIAL					
Hidden View	34	1			
Dry Creek area		4	55		
Savage area	1[b]		40		
Arrowhead area		4	65		
Buck Ridge		4	25		
Observation area	—	—	25	—	—
TOTAL	101	19	275	2	1

[a] Access road to area and habitat improvement available.
[b] 25-unit group campsite.

C—067364

C-067364

H. V. EASTMAN LAKE (Buchanan Dam)

Location and Description

H. V. Eastman Lake is located on the Chowchilla River in the Sierra Nevada foothills, about 18 air miles northeast of the city of Madera, California (see plate 14). Primary access to the project is good via County Road 607.

Administration and management of the project are the responsibility of the U.S. Army Corps of Engineers who exercise overall supervision of land and water areas. The irrigation function of the project is financially integrated with the Bureau of Reclamation's Central Valley Project.

Because of extensive fencing by private landowners for livestock grazing and the intermittent flow of the Chowchilla River, the area in the past has supported only limited recreational activities, such as hiking, horseback riding, hunting, and fishing.

Potential Enhancement

Initial and potential recreation development for H. V. Eastman Lake are listed in table 10. The lake began filling in 1976, but with its minimal facilities mainly attracted fishermen. Prior to the next recreational season, additional facilities will be built.

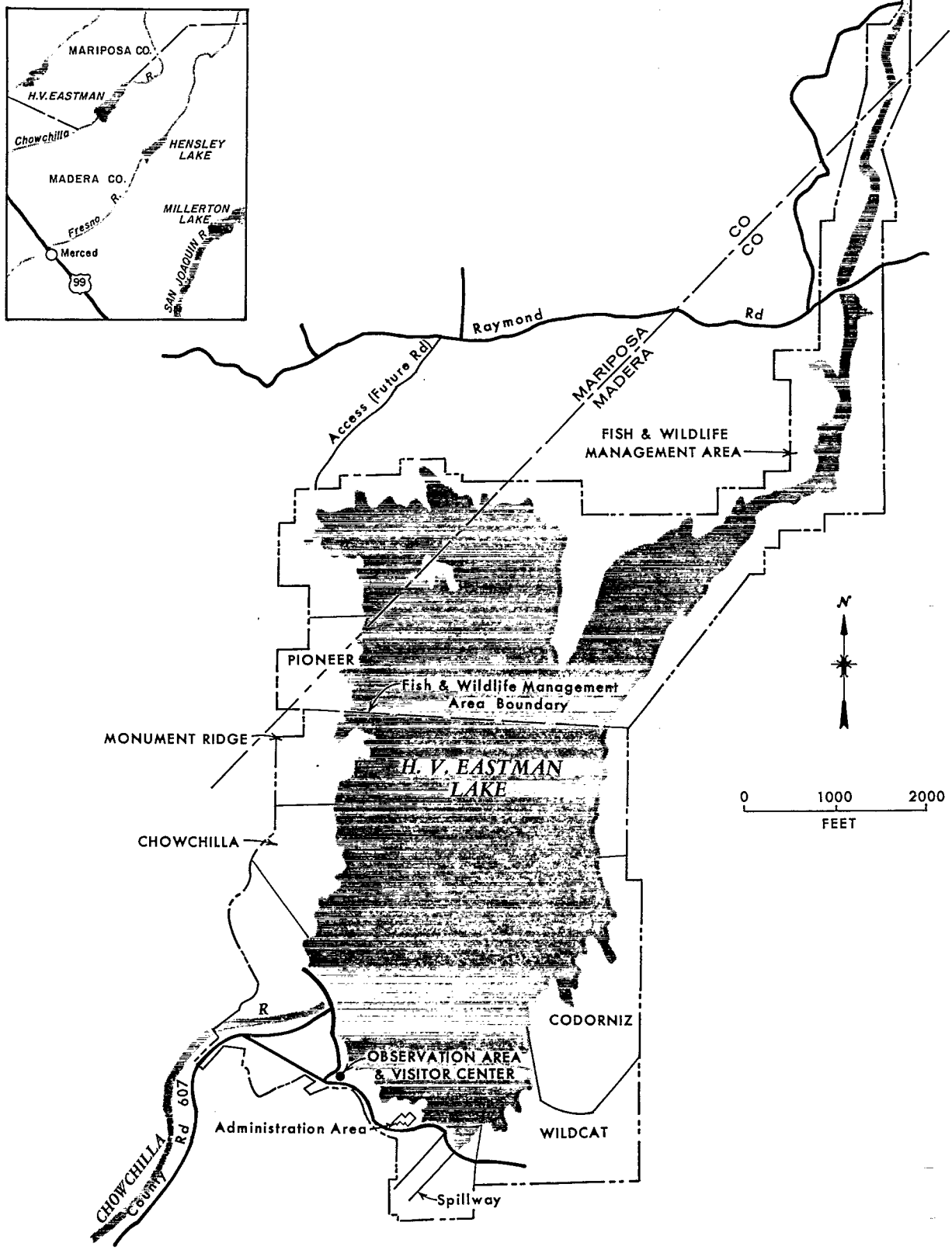
The annual use of 200,000 recreation days estimated for the early years of lake operation is expected to increase to about 1 million recreation-days at full development.

The normal recreation pool will provide a water surface area of 1,070 acres. The lands adjacent to the lake will offer opportunities for picnicking, camping, sightseeing, hiking, horseback riding, and various outdoor games. Hunting access to the Fish and Wildlife Management Area will be provided. During the early spring, fishing is expected to be the primary activity at the lake. As temperatures rise in the late spring and summer months, swimming, boating, and water skiing will be the prevalent activities. The fall month activities will be include fishing and upland game hunting. The Fish and Wildlife Management Area will also permit nature studies by students and naturalists, especially during periods of peak project use when hunting will not be permitted, and during the winter and early spring when little hunting pressure is expected.

C—067365

C-067365

PLATE 14



H. V. EASTMAN LAKE

C—067366

C-067366

Table 10. Recreation facilities

	Camping sites[a]	Boat-launching lanes	Picnic sites[b]	Swimming beaches	Visitor center
INITIAL					
Observation area			5		1
Chowchilla		2	45	1	
Monument Ridge					
Pioneer					
Fish & wildlife area					
Cordoniz	60	2			
Wildcat					
Fishing access area	—	—	6	—	—
Total	60	4	56	1	1
POTENTIAL					
Chowchilla		2	30		
Monument Ridge		3	35		
Pioneer			25		
Fish & wildlife area		1	10		
Cordoniz		2			
Wildcat	25	2	60	1	—
TOTAL	85	14	216	2	1

[a] Also planned initially are 3 group sites of 15 units each at Cordoniz and 30 primitive sites at Wildcat.

[b] Also planned initially are 15 primitive sites at Monument Ridge and 3 group sites of 15 units each at Chowchilla (group sites have potential development of 30 units each).

C—067367

C-067367

H. V. Eastman Lake

Construction of initial recreation developments at H. V. Eastman Lake began in October 1975. The developments are located principally in two areas, one on each side of the lake, to provide a balanced plan of public access and proper control, and to meet the basic requirements of expected public needs. Initial development will also include an observation area, Fish and Wildlife Management Area, and downstream fishing accesses. Other sites, assigned as potential recreation areas, will be managed for wildlife purposes until demand requires development of additional facilities.

Conclusions and Recommendations

A master plan has been prepared by the U.S. Army Corps of Engineers for Buchanan Dam - H. V. Eastman Lake. It is sufficiently comprehensive in meeting the needs of public use, yet will insure maximum resource protection by planning for intensive use at selected areas. Mitigation to offset reduction of habitat will make development as compatible as possible with the fish and wildlife resources.

C—067368

C-067368

Location and Description

Jenkinson Lake in the Sly Park Recreation Area is located 5 miles from U.S. Highway 50 at the Pollock Pines exit. (See plate 15). The El Dorado Irrigation District administers the 1,375 acres of land and 640 acres of water surface.

Present Recreation Activities

Present recreation facilities are shown on plate 15 and listed in table 11. Visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	5,557
Picnicking	33,057
Camping	30,557
Swimming	8,057
Water skiing	13,057
Boating	5,557
Fishing	23,057
Other	5,557
Total	124,456

Recreational development is almost exclusively located on the northern shore of the lake; the southern shore is used for hiking and riding, and as a scenic offscape. Present facilities include seven campgrounds, a horsemen's camp, four group camps with a present and planned capacity of 500 persons, a day-use picnic area, and a boat-launching area. Two additional group campgrounds can also be used to accommodate overflow from other campgrounds.

Potential Enhancement

The El Dorado Irrigation District is making substantial efforts to provide neat and attractive recreation facilities, in a desirable and picturesque resource setting. The district has recognized visitation patterns in present facility development, and in improvements scheduled, while striving to maintain the area's forested, limited-development atmosphere.

C—067369

C-067369

In 1969, the National Park Service prepared a general recreation development plan. The Park Service estimated 225,000 visitor-days annually for optimum public use of the area. Although the plan was not adhered to specifically, its overall intent to provide additional day-use and overnight facilities so that existing facilities would not be degraded by overuse has been met. Present visitation is 124,456 visitor-days annually.

In 1975, the recreation potential of Jenkinson Lake was reassessed by field investigations and by communication with the El Dorado Irrigation District and an updated plan prepared. The general program for anticipated development includes:

1. Campgrounds - Upgrade through provision of wood chips, graveled auto spaces, and plant material. Develop a new campground, and a new swimming area at an existing campground.

2. Day-use area - Add parking lot, information center, picnic areas, and access for the disabled.

3. Land acquisition - Acquire potential 150-unit campground on an adjacent 120-acre parcel. A potential 26-unit campground is in the Hazel Creek North Area.

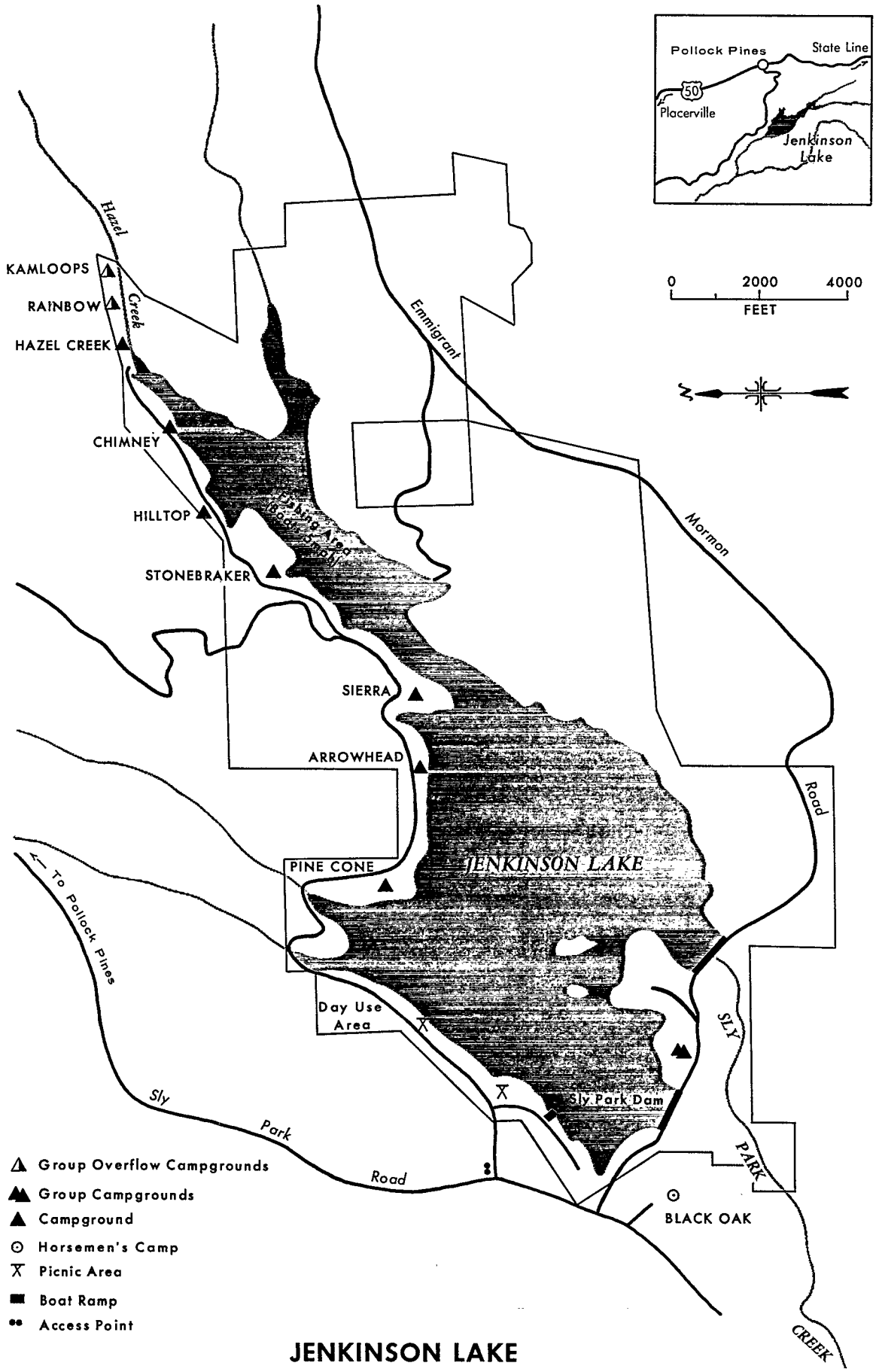
4. Boat-launching area - Riprap shoreline, repave parking area, add more boat moorage.

Proposed recreation facility development is shown in table 11.

C—067370

C-067370

PLATE 15



JENKINSON LAKE

C—067371

C-067371

Table 11. Recreation facilities

	Camping Sites	Camping Group	Boat-launching lanes	Picnic tables	Day-use swimming (acres)	Parking spaces
PRESENT						
Black Oak		1[a]				
Boat-launching area[b]			3	470		50
Day-use area				60		30
Pine Cone	40					
Arrowhead	35					
Sierra[d]	83				1	
Stonebraker[e]						
Hilltop	20					
Chimney	9					
Hazel Creek	28					
Rainbow		1[f]				
Kamloop		1[f]				
Group Camps 1-4	—	4[g]	—	—	—	—
Total	215	7	3	530	1	80
FUTURE						
Day-use area[c]				140		80
Sierra					4	
Chimney	9	—	—	—	—	—
TOTAL	224	7	3	670	5	160

[a] Horsemen's camp with three horse corrals.
[b] Present facilities include mooring areas with 48 slips and three courtesy docks. Additional mooring areas are planned.
[c] Information center and disabled access ramp are planned.
[d] Includes three walk-in camping sites.
[e] Camping available.
[f] Also serves to accommodate overflow from other campgrounds.
[g] Total capacity is 500 persons.

C—067372

C-067372

Conclusions and Recommendations

1. Water in the lake is used for domestic purposes and quality must be protected. Of particular importance are the location of sanitation facilities, siltation of the water by shoreline erosion, and the exclusion of camping and domestic animals below the high-water line.

2. Off-road vehicles will continue to be discouraged due to their destructive effects on the limited resource available.

3. The quality of the present facilities should be retained. Present fees are reasonable when compared to competitive sites. Any major upgrading in electricity, water, or sewage hookups would require increased visitor fees. For those desiring increased amenities, a few sites could be upgraded and additional fees charged.

4. A planting program has been undertaken to revegetate exposed and unsightly areas. Native plants should be established to reduce irrigation and maintenance costs, and to enhance the area's appearance.

5. Access from the county road to the entrance of Sly Park is a safety hazard to autos making a left turn into the park. A deceleration lane should be provided for vehicles turning into the park.

6. Adequate access to the hillsides on the south shore of the lake should be made available for hikers and horsemen. However, the resource should not be damaged. Trails could be developed to facilitate nonpowered forms of recreation activities and to disperse the concentration of visitors from the north shore. Any developments other than trails should be discouraged.

7. Facilities conforming to the natural topography are the desired alternative to grading a slope. Any unavoidable cut should be graded to a stable slope capable of revegetating and ultimately blending with the surroundings. Where foot traffic is heavy in forested areas, crushed rock will reduce dust and prevent water evaporation from the soil.

8. Land should be acquired to change the boundaries of the park to generally conform with the ridgeline to insure that the view not be spoiled by incompatible development outside the park.

9. A general recreation plan is needed. The El Dorado Irrigation District has engaged the "Environmental Assessment and Resource Planning Corps" to assess all physical and social factors of the site, consider development alternatives, and recommend a phased course of action.

C—067373

C-067373

KESTERSON RESERVOIR

Location and Description

Kesterson Reservoir is a Reclamation project upon which the Kesterson National Wildlife Refuge was superimposed in 1969 under a general plan and management agreement. The refuge is located in Merced County, 4 miles east of Gustine and about 11 miles north of Los Banos (see plate 16), and is administered by the U.S. Fish and Wildlife Service.

The site was purchased by Reclamation for construction of the reservoir, to be operated in conjunction with the San Luis Drain. The reservoir is divided by a series of dikes into interconnected cells of approximately 100 acres each.

Present Recreation Activities

The 1975 visitation at the refuge was:

Activity	Visitor-days
Sightseeing	313
Hunting	3,464
Photography	12
Total	3,789

At present, the 5,900-acre refuge offers 3,400 acres of land and 2,500 acres of water for recreation--hunting, fishing, photography, bird watching--and for environmental education. About 4,600 acres of the total area are included in dual-use grazing and fish and wildlife agreements.

Potential Enhancement

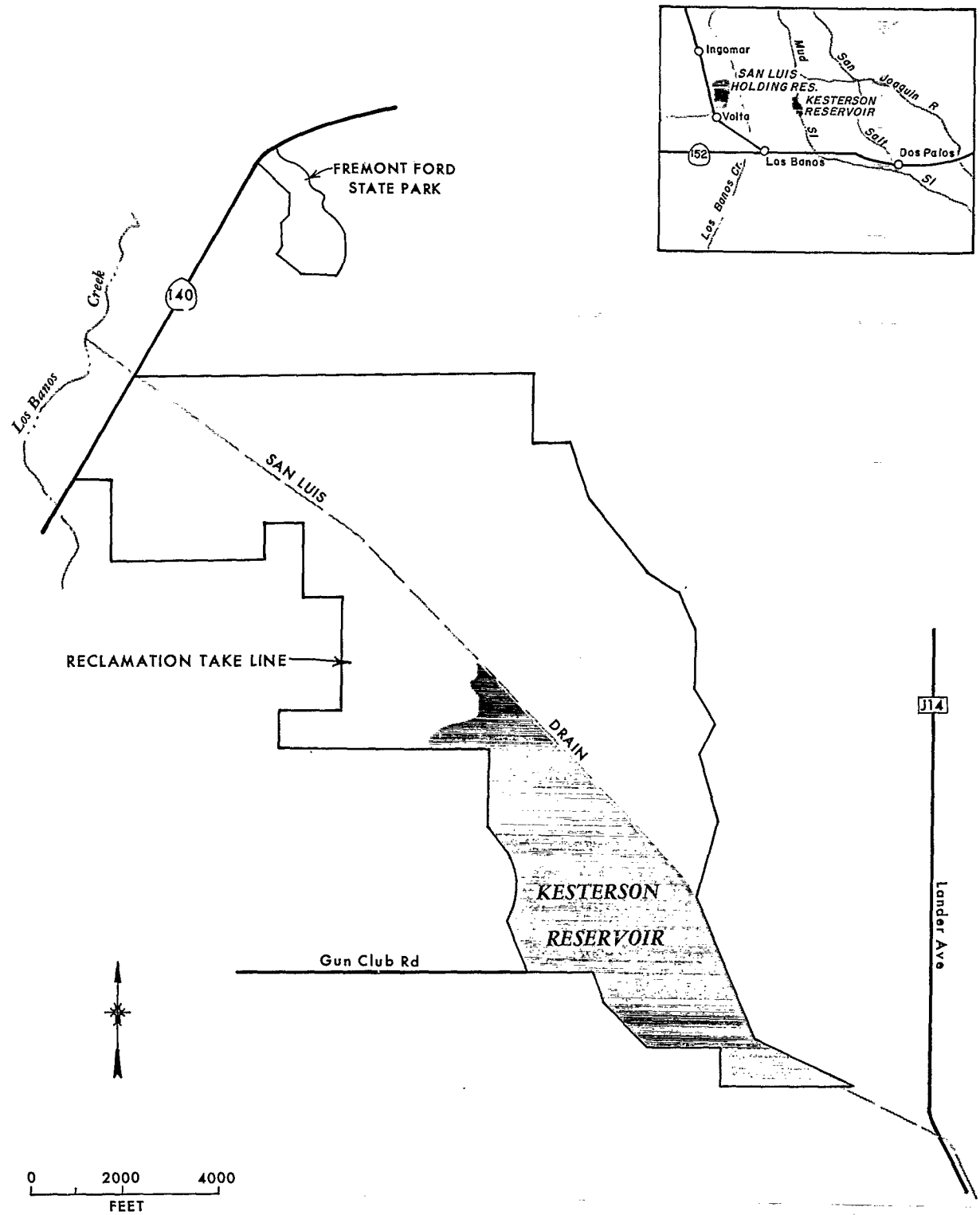
Kesterson Reservoir is used in conjunction with the San Luis Drain for storage and evaporation of drain water until the drain, now under construction, is completed. After the drain is completed, the reservoir will be used for drain-water regulation. Part of the reservoir will also be used for waterfowl habitat.

Future development, planned to restore and increase a seasonal marsh and to create some permanent marsh, will depend on the adequacy of the water supply and the extent to which Reclamation develops the land for its own project purposes.

C—067374

C-067374

PLATE 16



KESTERSON RESERVOIR

Public use facilities planned include five quarter-acre parking areas of 15 spaces each, with chemical toilets and trash receptacles. Access roads and parking lots would be gravel-surfaced and maintained.

If a drainage treatment plant is required, it could be located on another parcel of 50 acres adjacent to State Highway 140. About 10 acres of this parcel would be used for the site of a checking station.

Conclusions and Recommendations

1. Since Kesterson National Wildlife Refuge is relatively new, public use is light. As development of the refuge progresses and its location becomes more widely known, public use is expected to increase. This increase should be recognized in any planned future development.

2. The refuge is a unique segment of native San Joaquin Valley grasslands, and to the extent possible, should be preserved as such.

3. There will be a conflict between fishing and waterfowl hunting in Mud Slough. Since the potential for each of these activities could be significant by itself, no fishing should be allowed during hunting season.

4. Fire danger is high and no resident supervision is available. Night fishing should not be allowed as long as these conditions exist.

C—067376

C-067376

Location and Description

The Keswick Reservoir area, located on the Sacramento River 9 miles downstream from Shasta Dam, is administered by Shasta County under a recreation agreement with Reclamation. The area is accessible from Interstate 5 to the east and State Highway 299 to the southwest. (See plate 17.) The reservoir is in a steep gorge surrounded by a rough and mountainous, rocky, brushy area containing some open grassy spaces. The long, narrow reservoir, 9 miles long and 200 to 900 feet wide, has 630 acres of water surface and 19 miles of shoreline lined with scattered large trees and shrubs.

Present Recreation Activities

Present recreation facilities are listed in table 12. The 1975 visitation is shown below:

Activity	Visitor-days
Sightseeing	1,632
Picnicking	78
Boating	3,172
Fishing	4,141
Hunting	1,285
Other (ORV use)	212
Total	10,520

The recreation resources available at Keswick are excellent but small compared to nearby Shasta, Whiskeytown, and Clair Engle Lakes. These larger lakes overshadow Keswick's less spectacular setting and potential.

Because of the reservoir's cool water temperature (53°F), water-contact activities are unsafe and extremely limited. Keswick provides, however, readily available and free fishing access, boat launching, and docking for the Redding community. Local residents can go fishing after work and return home the same evening. On the west shore a fishing access, developed with California Wildlife Conservation Board funds, includes a launching ramp, car and trailer parking, and primitive sanitation facilities.

C—067377

C-067377

Potential Enhancement

Because of the attraction of nearby reservoirs, further development is not warranted at this time; however, the National Park Service's recreation development plan included recommendations for development should the need arise. Three additional access sites could be developed that would include drive-in and boat-in campgrounds, parking areas, tables, grills, fish cleaning areas, and primitive toilets. An access road along a railroad bed on the west side could be improved. To supplement the development on public land, about 30 acres of private land should be acquired, in fee or by easements, for future recreation development or for the protection of the natural character of the reservoir. Future development is shown on table 12.

Conclusions and Recommendations

It is recommended that:

1. The National Park Service's development plan be used as a guide for future development, or alternate approved plans be completed.

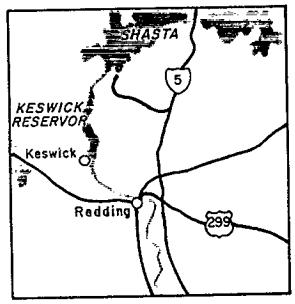
2. Future development be based upon a survey of needs of visitors.

3. Any development recognize the role of the Whiskeytown-Shasta-Trinity National Recreation Area and complement the area's role in recreation.

C—067378

C-067378

PLATE 17



Shasta Dam Blvd

Matheson

RESERVOIR

0 2000 4000
FEET

Fishing Access

Boat Ramp

KESWICK

KESWICK DAM

KESWICK RESERVOIR

AUGUST 1976

1158-208-4

Table 12. Recreation facilities

	Camp grounds	Boat-launching ramp	Picnic sites	Riding and hiking trail
PRESENT				
West Shore		1	1	
FUTURE				
Site 1 - Fishing access[a]			1	
Site 2 - Concession[a]				1
Site (unnumbered)[a b]				
Site 3[a] -	20	1	–	–
Total	20	2	2	1

[a] These sites are not recommended for development at this time. However, they could be built if the need arises and would enhance recreation significantly at Keswick Reservoir.
[b] Three miles of access road along railroad could be built.

C—067380

C-067380

Location and Description

Lakes Berryessa and Solano are located approximately 1 hour's drive north of the Bay area and 45 minutes drive west of Sacramento, and are accessible by State Highway 128 from Winters and State Highway 121 from Napa. (See plate 18.) The lakes are the two storage reservoirs for the Orland Project, and are included in this document because of their close relationship to the Central Valley Project.

Present Recreation Activities

Recreation at Lake Berryessa, administered by the Bureau of Reclamation under P.L. 93-493, is supervised by a recreation manager stationed at the lake. Recreation at Lake Solano is administered by the Solano County Parks Department.

There are 19,328 acres of surface water and 6,088 acres of land available for recreation use at Lake Berryessa. Lake Solano offers 110 acres of surface water and 135 acres of land.

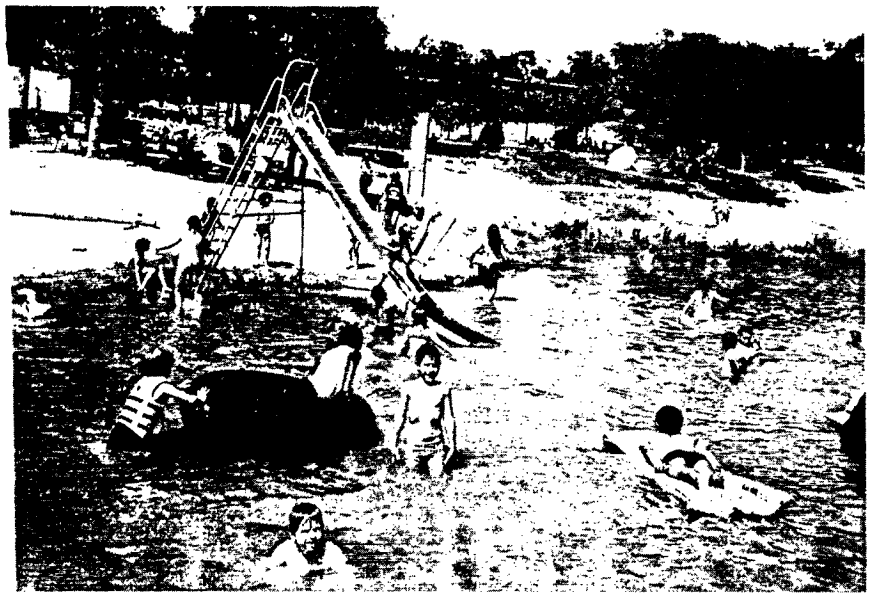
Visitation for the 1975 season was:

Activity	Lake Berryessa	Lake Solano
	(visitor-days)	
Sightseeing	330,327	4,834
Picnicking	103,291	2,468
Camping	501,757	25,186
Swimming	154,036	2,101
Water skiing	332,191	0
Boating	239,785	1,678
Fishing	168,838	5,563
Other	3,500	564
Total	1,833,725	42,394

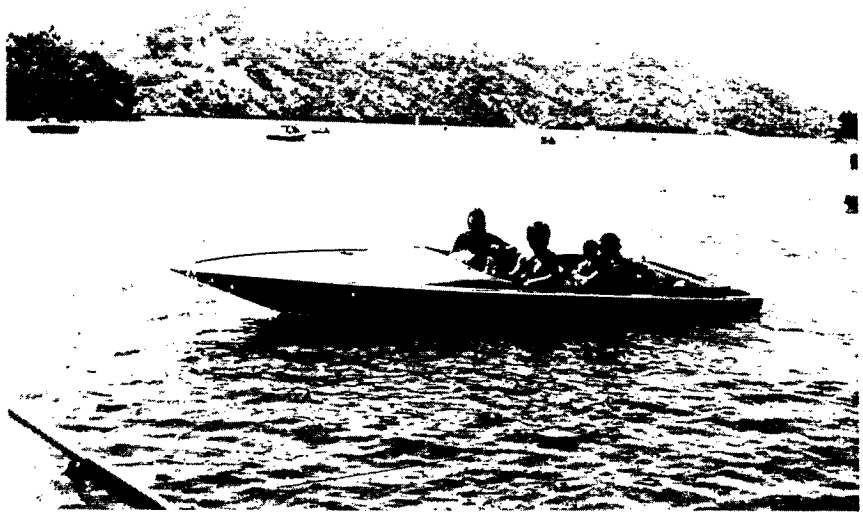
The seven resort areas at Lake Berryessa are operated by private concessionaires with varying quality of services and facilities. Recreation facilities include seven campgrounds, picnic areas, and boat-launching ramps, and a developed and several undeveloped swimming areas. Marina services--fuel, repairs and rentals--are provided. There are several snack bars and restaurants. Lake Solano offers one campground, one picnic area, one boat-launching ramp, and three swimming lagoons. Recreation facilities for both lakes are shown on table 13.

C—067381

C-067381



Lake Berryessa offers a variety of recreational activities . . . .



. . . . boating

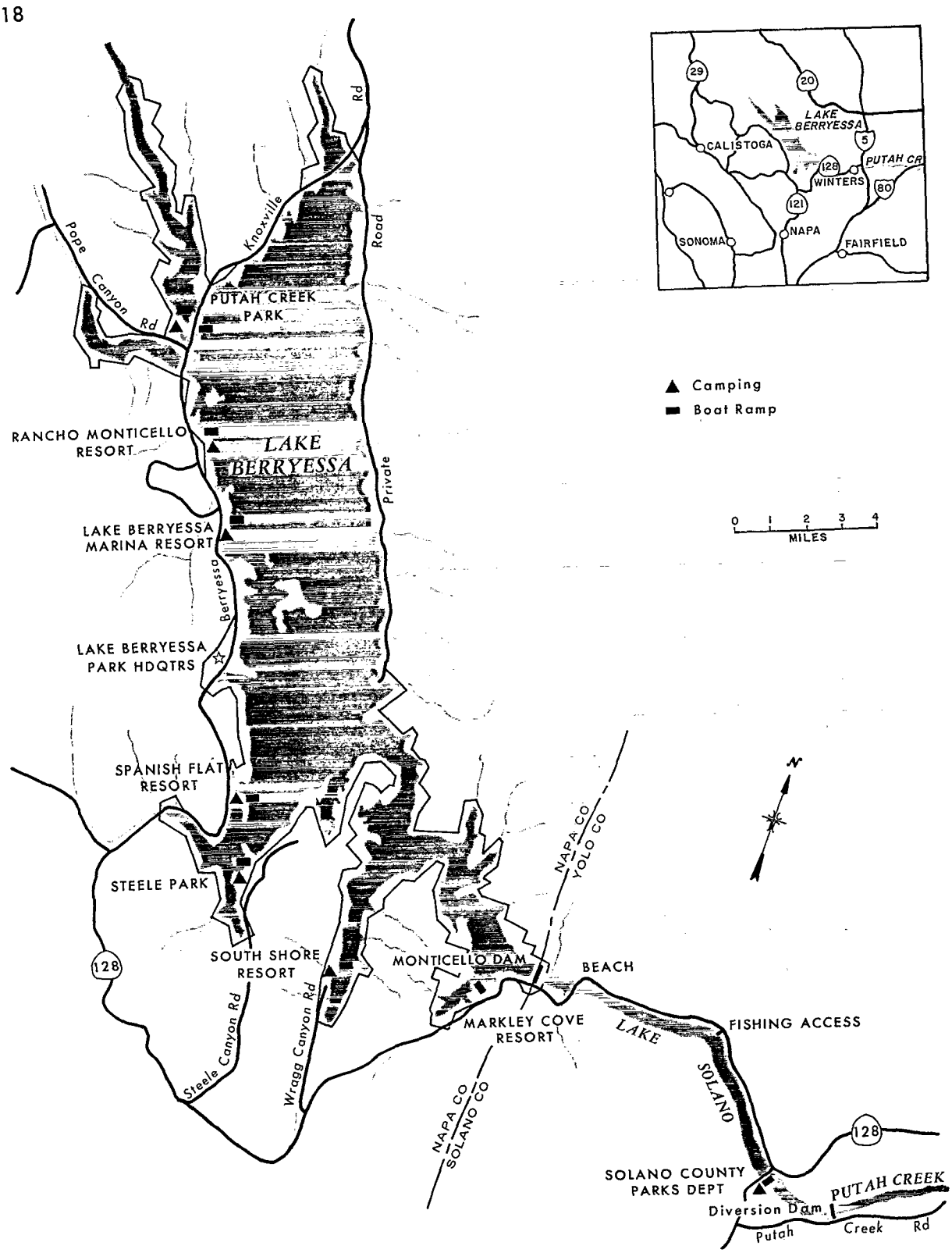
and

floating . . . .

C—067382

C-067382

PLATE 18



LAKE BERRYESSA AND LAKE SOLANO

1158-208-35

C—067383

C-067383

Table 13. Recreation facilities

	Camping sites	Trailers (long-term) spaces	Boat-launching lanes	Boat berthing spaces
LAKE BERRYESSA				
Putah Creek Park	66[a]	192	10	60
Rancho Monticello	143	580	10	--
Lake Berryessa marina	30[a]	193	10	153
Spanish Flat	85	191	11	227
Steele Park	148	131	13	214
South Shore	82	230	4	20
Markley Cove	--	--	4	68
Total	554	1,517	62	742
LAKE SOLANO	50	--	1	--
TOTAL	604	1,517	63	742

[a] Without trailer hookups.

. . . . sunning and swimming

C—067384

C-067384

A 30-acre fishing access site on Putah Creek, the only cold water stream in the area,located directly above Lake Solano on project land, is leased to the State Water Conservation Board and is managed by the Yolo County Department of Parks and Recreation. In 1975, over 1,200 sightseers and 800 fishermen visited the access site.

Six fishing access sites along Putah Creek between Lake Solano and Monticello Dam are managed by Yolo County. As these sites are not located on Reclamation land, visitation data are not included.

Potential Enhancement

Improvement in quality of existing resorts and additional short-term recreation facilities are needed at Lake Berryessa. P.L. 93-493 authorized $3 million for the construction of additional short-term recreation facilities. Design and environmental studies are currently underway for facilities on the west shore of the lake, with construction and operation scheduled to begin in 1977. Boat-launching facilities to be built and operated by Reclamation are also being considered for construction in 1977.

The Lake Solano area, almost fully developed, could be enhanced by additional camping spaces, hiking trails, and a group campground.

Putah Creek, between the two reservoirs, is fully developed.

Conclusions and Recommendations

1. Law enforcement authority is needed to regulate the recreation activities and to protect the resources at Lake Berryessa.

2. The 1959 National Park Service's public use plan, the basis for future planning at Berryessa, should be updated and revised as necessary. The public's advise should be sought during the planning process to determine how public needs can best be served at the lake.

3. To preserve visual and recreation quality of Lake Berryessa, extensive areas need to be retained as open space and for undeveloped dispersed types of activities.

4. With the limited resources of Lake Berryessa, priority should be given to water-related recreation, such as boating, swimming, fishing, and the attendant activities of picnicking, camping, and hiking. Constructing new facilities and redeveloping and improving resort areas will allow more people to use and enjoy the lake.

5. Additional camping space, hiking trails, and a group campground should be developed at Lake Solano.

C—067385

C-067385

Location and Description

The primary purpose of the Red Bluff Diversion Dam on the Sacramento River is to divert water to the Tehama-Colusa Canal. The dam forms a reservoir, Lake Red Bluff, with a surface area of 530 acres at active storage capacity which provides recreational benefits.

The major spawning areas in the Sacramento River for king salmon and steelhead trout are upstream from the Red Bluff Diversion Dam. To pass these fish around the dam in their migration to these spawning areas, two main fish ladders with fish counting structures are provided at each end of the concrete dam. At the bend of the left abutment fish ladder, a fish trap is used to select and trap migrating adult salmon for transportation to, and planting in, the artificial spawning beds of the Tehama-Colusa Canal fish facilities.

The lake areas developed for recreation include: (1) the Red Bluff recreation area administered by the U.S. Fish and Wildlife Service, (2) the East Sand Slough area administered by the Bureau of Reclamation, with a water sports area established by Tehama County, and (3) Dog Island and Samuel Ayer Park administered by the city of Red Bluff.

The Red Bluff recreation area, located on the east side of the lake approximately 1 mile downstream from the city of Red Bluff, consists of 350 acres of land and 530 acres of water. One mile upstream from the dam near the intersection of Interstate 5 and U.S. Highway 99 is the East Sand Slough area. (See plate 19 for locations.) Further upstream, on the north edge of the city of Red Bluff just off Main Street is the 23-acre Dog Island and Samuel Ayer Park area. The island, in Lake Red Bluff, is linked to the mainland by an arched wooden bridge which connects it to Samuel Ayer Park. (See plate 20.)

C—067386

C-067386

Present Recreation Activities

Visitation for the 1975 season at the three areas was:

Activity	Red Bluff rec. area	East Sand Slough (visitor-days)	Dog Island & Samuel Ayer Park
Sightseeing	60,000[a]		4,125
Picnicking	600	840	1,200
Camping	4,995		
Swimming	1,080		900
Water skiing	1,080	840	
Boating	1,947		
Fishing	7,500	42	1,275
Other[b]	8,000		
Total	85,202	1,722	7,500

[a] Includes visitation to Tehama-Colusa fish facilities.
[b] Boat race in Red Bluff recreation area.

Red Bluff recreation area. Principal attractions are the fish ladders and the counting apparatus, and the Fish and Wildlife Service visitor display area. Development is limited and exists only because of the attraction of the fish facilities. Facilities include a few shaded picnic tables and a two-lane boat-launching ramp on the downstream side of the dam, and a two-lane boat-launching ramp, restroom facilities, and a few picnic tables on the upstream side. The upstream restrooms have been inoperative for an extended time due to a well failure. A planting program has failed from lack of maintenance. Moreover, the U.S. Fish and Wildlife Service has commented that it is deemphasizing administration of recreation on lands under its jurisdiction.

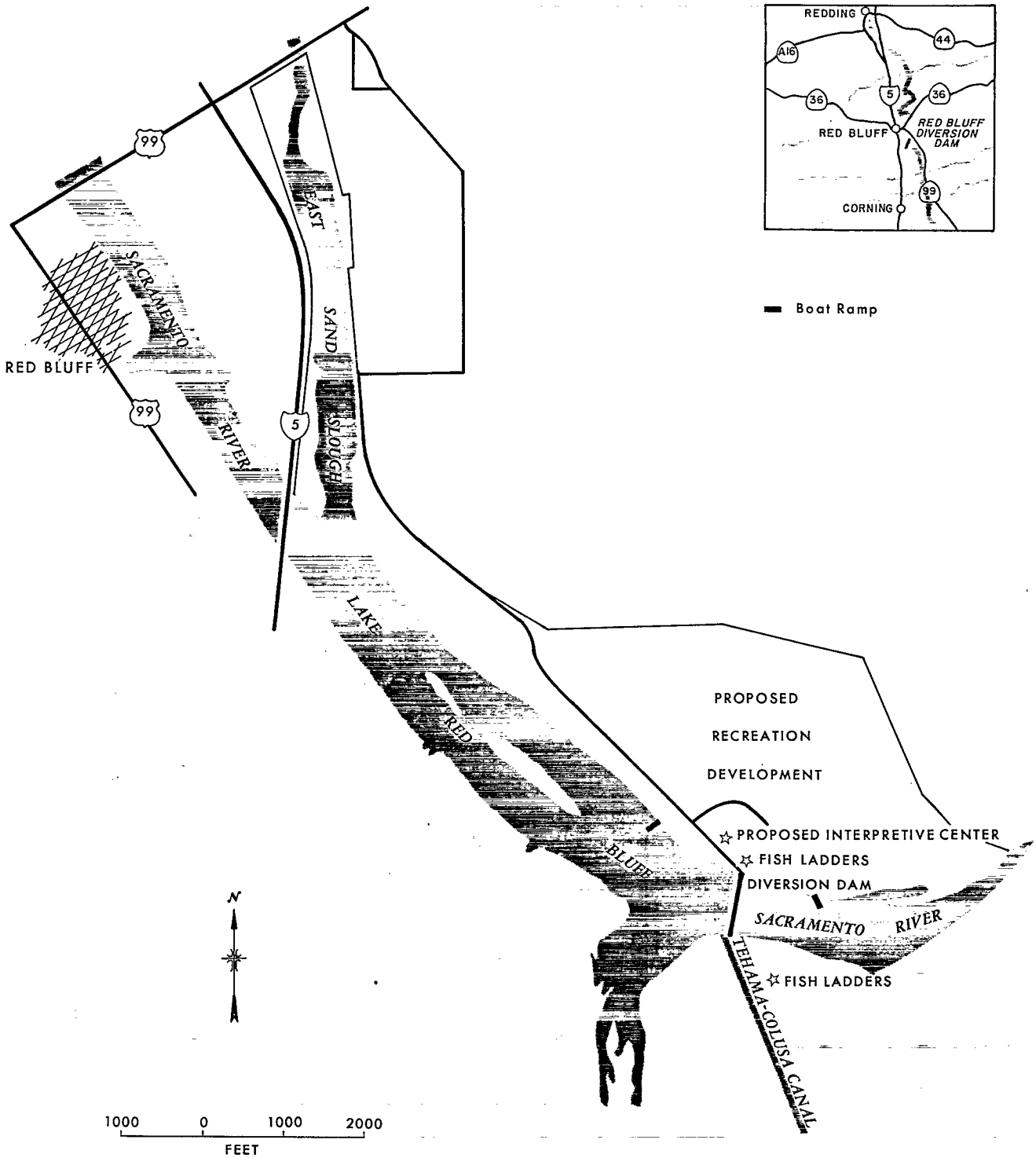
East Sand Slough area. Tehama County has established, on an annual basis by permit, a water sports area on the adjacent 75 surface acres of Lake Red Bluff. Various facilities such as ski jump slalom course and a ski dock were installed but were removed for the flood control season.

Dog Island and Samuel Ayer Park. Recreation facilities for this area are shown on plate 20. The island is subject to winter flooding; present facility developments are 4,500 feet of foot trails amongst the dense native vegetation.

C—067387

C-067387

PLATE 19

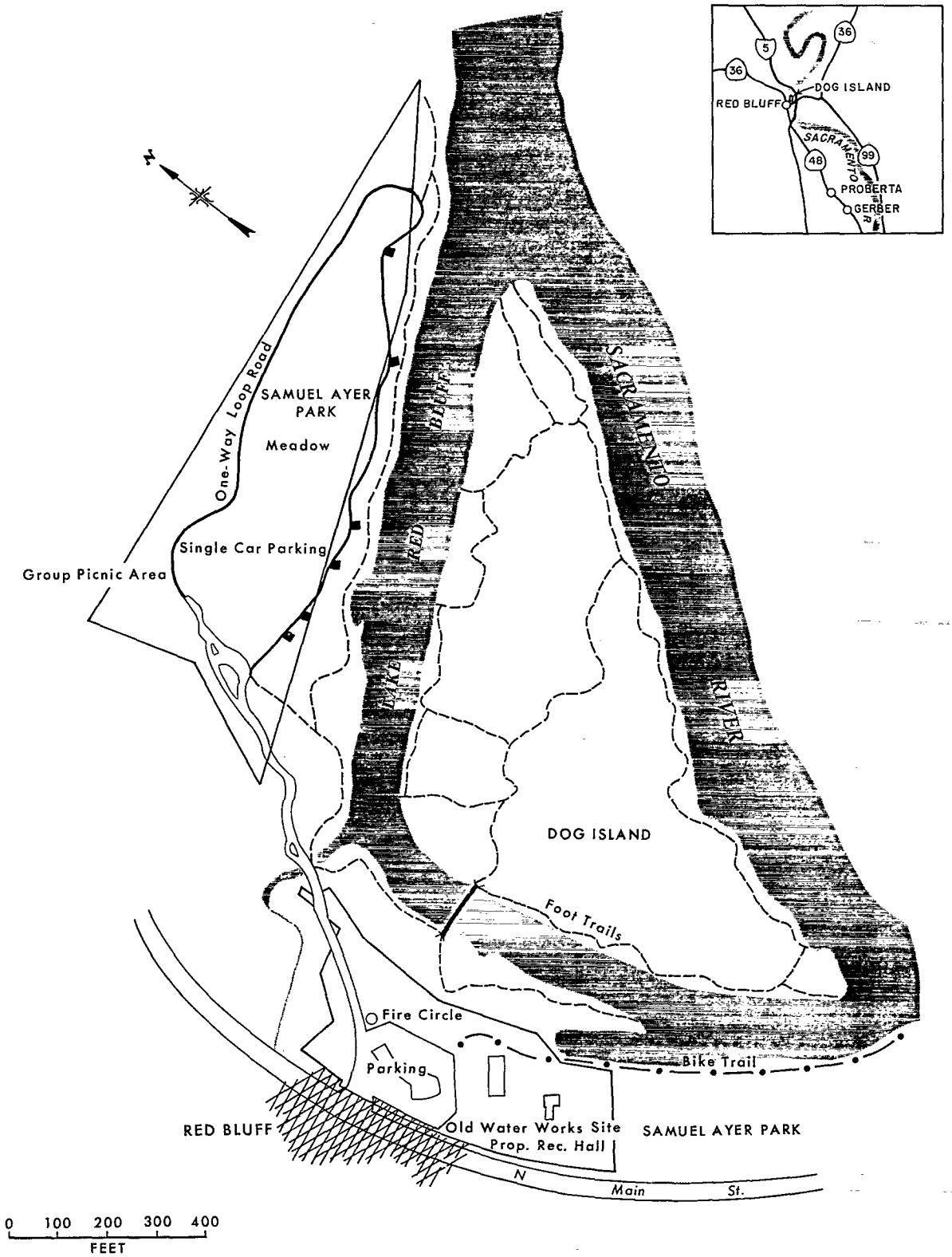


LAKE RED BLUFF

C—067388

C-067388

PLATE 20



DOG ISLAND AND SAMUEL AYER PARK

C—067389

C-067389

The park mainland with its recently completed day-use development affords visitors a group picnicking area, 63 parking spaces, 2 restrooms, 15 fishing pod-barbecue areas, and a fire circle. Access roads around the fishing pod-barbecue areas were designed so that no major trees were displaced, enhancing the esthetic appeal of the park. The design of the fire circle or pit creates the effect of a mini-amphitheater which has been used by groups and organizations for evening programs. The area is maintained continuously by the city park maintenance crews. A bike trail connects the park with outlying areas.

Potential Enhancement

Red Bluff recreation area. The availability of land, attractiveness of the setting, and the region's recreational needs give the area great potential for recreation development.

A recreation development plan completed by the National Park Service in 1970 proposed overnight, day-use, and interpretive facilities for the area, but was never accepted for implementation. A key feature was the interpretive center that would exhibit the life cycle of the king salmon. Overnight camping to accommodate a potential of 400 units was planned.

In August 1975, an updated interpretive center design concept was proposed by the Bureau of Reclamation's Engineering and Research Center. Included were a scaled down version of the interpretive center, 215 overnight camping units--including trailers, group use, and boaters--and day-use facilities. A new feature would be an 1,800-foot-long model of the Central Valley Project. An interpretive trail system would allow visitors to examine the various CVP water impoundment features that would also serve as holding ponds for fish.

Dog Island and Samuel Ayer Park. This area is a fine example of interagency cooperation and agreement at the Federal, State, and city levels, to provide resource-oriented forms of recreation within a few blocks of a city's commercial district.

A possible project for additional recreation development is the renovation of an old waterworks site into a community recreation hall. The complex would provide space for a large multipurpose meeting hall and several workshop areas.

C—067390

C-067390

Conclusions and Recommendations

The Red Bluff region, with its ideal climate, proximity to major transportation routes, and steadily increasing population, has outstanding potential for recreation development. Visitor information at the three recreation areas should be coordinated so that development will fulfill the region's recreational needs.

Red Bluff recreation area.

1. The upstream day-use facilities and restrooms that are severely undermaintained should be cared for on a regular basis.

2. The implementation of the design concept proposed by Reclamation's Engineering and Research Center is subject to approval by the Commissioner of Reclamation. Public input should be sought to provide recreation facilities that reflect the potential visitor needs. Properly phased development should encourage the initial construction of the hatchery interpretive center and supportive overnight and day-use facilities. Reclamation should try to build and administer all recreation and public uses in the area.

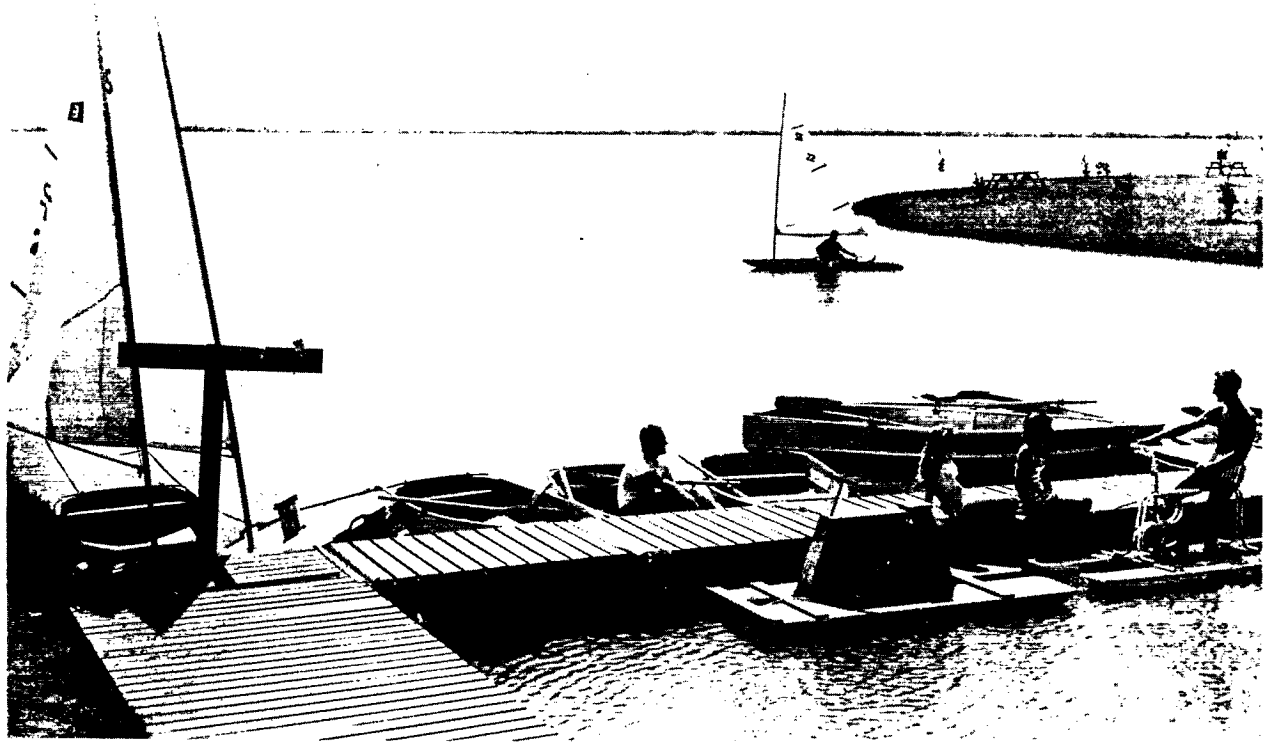
East Sand Slough. The use of seasonal facilities installed at the Slough may be an indication of the local recreation demand on Lake Red Bluff. This information should be considered in facility designs for the development of the Red Bluff recreation area. Tehama County should be encouraged to install, on an annual basis, the seasonal ski facilities on East Sand Slough.

Dog Island and Samuel Ayer Park. Some areas in the park now present safety and sanitation problems. Visitors are not aware of the fire pit until they are upon it. It is also an obvious trash receptacle. The access roads, designed around the trees rather than "straight line," can be dangerous when speed limits are exceeded. Speed limits are posted, and placement of warning bumps on roadways is being considered. In certain situations, however, such road bumps have compounded the safety hazard by throwing vehicles out of control. As with any public road, excessive speed causes dangerous situations, and increased enforcement of existing laws is the main deterrent.

Although the popularity of Dog Island is not yet established due to the recent completion of the access bridge, the area may experience greater than optimum use. Development adjacent to the diversion dam would accommodate any overflow visitation. The uniqueness of the intact parcel of native riparian vegetation could be further appreciated by an interpretive program, possibly explaining the effects of seasonal flooding upon riparian growth.

C—067391

C-067391



Day-use recreation area at Lake Woollomes

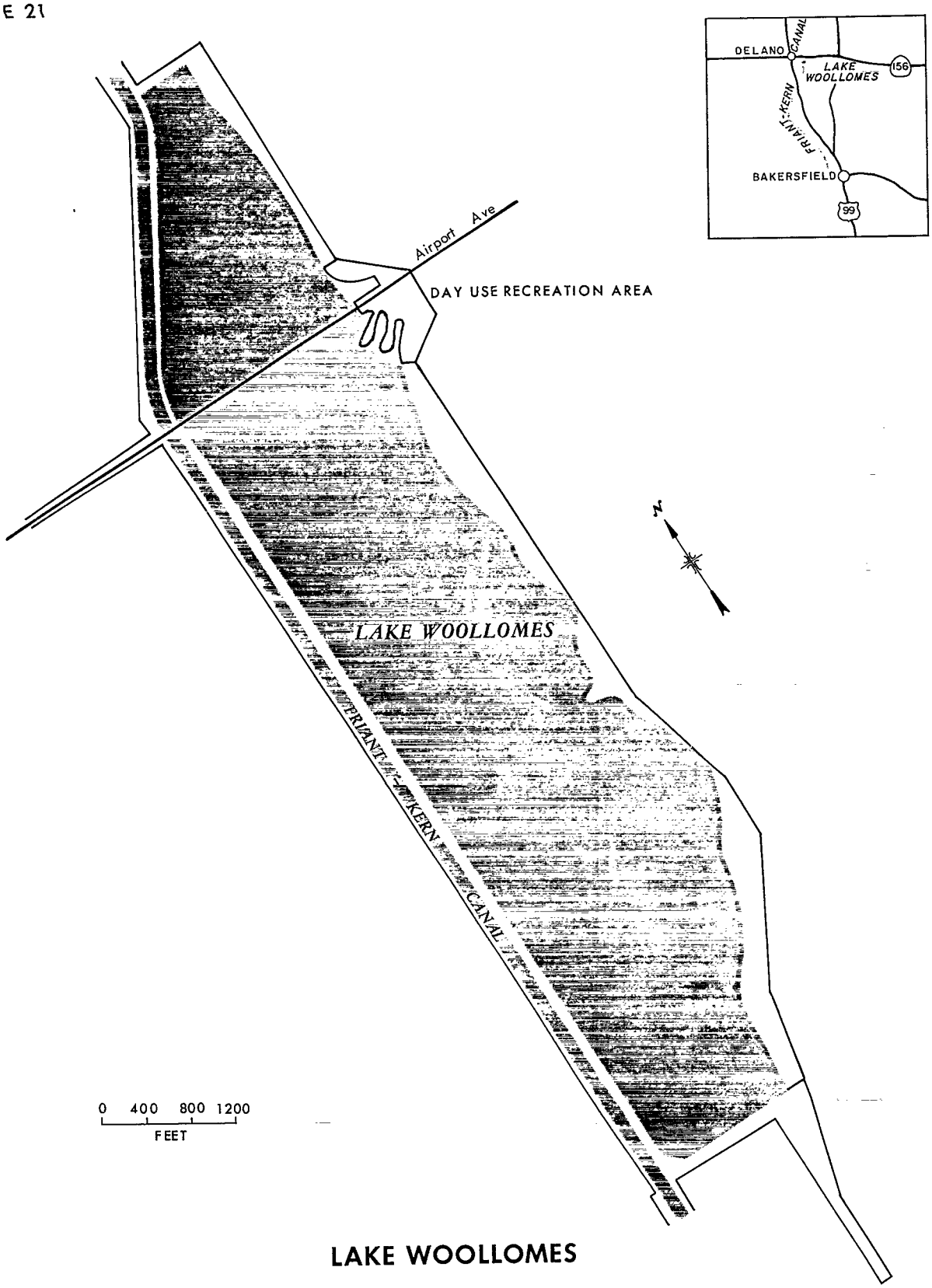
Location and Description

Lake Woollomes, located approximately 4 miles east of the city of Delano, California (see plate 21), is easily accessible from U.S. Highway 99 via the Woollomes Road off-ramp. The lake serves as an equalizing reservoir on the Friant-Kern Canal and can experience extreme drawdown. The lake, when full, has a capacity of 300 surface acres and a shoreline of approximately 4 miles. Approximately 20 acres of the total 145-acre land area have been developed for recreation, and are administered by Kern County.

C—067392

C-067392

PLATE 21



LAKE WOOLLOMES

AUGUST 1976

1158-208-15

C—067393

C-067393

Present Recreation Activities

Lake Woollomes supplies local residents with a significant regional recreation resource. Visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	329,863
Picnicking	115,082
Swimming	111,253
Boating	647
Fishing	5,337
Other	69
Total	602,251

Present recreation facilities are:

Activity	Unit	Total
Picnicking	areas	3 (40 units)
Boat launching	ramps	2
Swimming	beach	1
Children's play	areas	3

Potential Enhancement

Lake Woollomes is a well-maintained and high use recreation area. Future use is expected to continue in basically the same patterns as at present. Because the developed area is intensively used, conflicts between uses result, particularly between the picnickers-swimmers and the boaters. Boat-launching access turnaround space for boat trailers is insufficient.

Recommendations for a specific facility enhancement were formulated April 1976 in a general development plan for Lake Woollomes prepared for Kern County by a planning consultant, John Sue and Associates.

The development plan recommends phased recreation development to include construction of boat-launching facilities and a camping area, and improvement of existing day-use area.

Conclusions and Recommendations

A general development plan, based on thorough assessment of existing conditions, could increase recreation use of the lake without interfering with wildlife or with the necessary function of the lake.

C—067394

C-067394

Location and Description

Little Panoche Reservoir, with a storage capacity of 5,579 acre-feet, is located about 20 miles south of Los Banos in Fresno County, and is accessible by Little Panoche Road. (See plate 22.) The area is characterized by a series of abruptly defined low mountains with sparse vegetation and few trees. Summers are hot and winters are cool and humid.

Present Recreation Activities

The area, recently opened, includes 675 acres of land administered by the Department of Fish and Game as a result of a wildlife lands agreement executed March 3, 1976. A development plan outlined in the agreement is shown in plate 22. Boundary fencing has been installed. Preliminary plantings are scheduled for 1977. Also planned for installation are parking lots and access points.

Potential Enhancement

The primary objective for the area is to maintain the existing habitat at the best optimum levels for upland birds and small game. Although every effort should be made to keep the area in its primitive state, the public should be given the opportunity to experience this setting. Access only by foot or horseback, parking lots, sanitary facilities, firebreaks to protect habitat, and additional plantings should be provided. Grazing would be permitted as necessary to preserve and enhance the wildlife habitat.

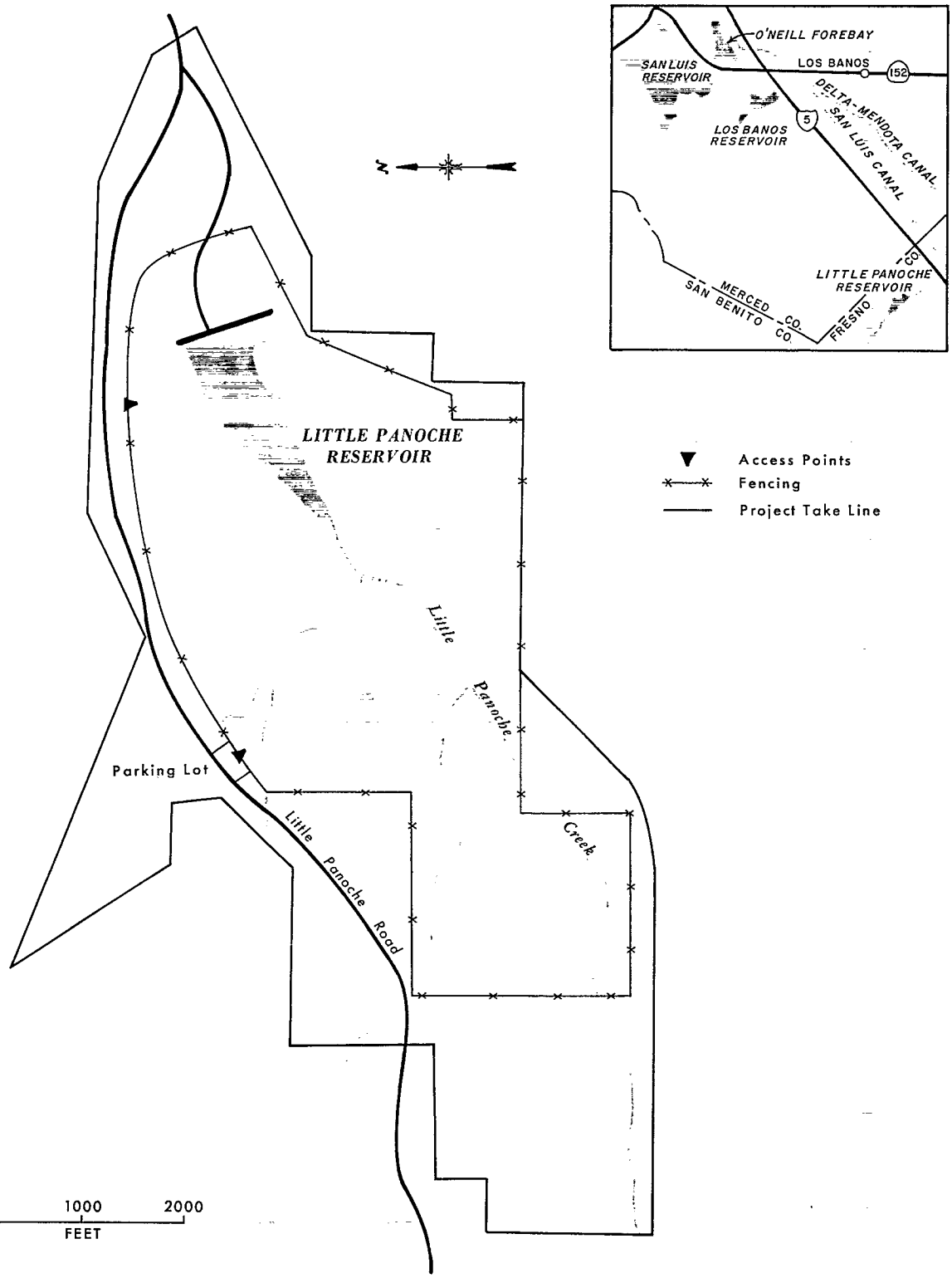
Conclusions and Recommendations

The development plan should be carried out as planned over an appropriate time period based on the availability of funds under the terms of the agreement.

Public uses of the area, under the management of the Department of Fish and Game, should include shore fishing, hiking, photography, sightseeing, dog field-trials, and hunting.

C—067395

C-067395



LITTLE PANOCHE RESERVOIR

C—067396

C-067396

Location and Description

Los Banos Reservoir, located 9 miles southwest of the town of Los Banos, is accessible by a county road off State Highway 152. (See plate 23.) The recreation on the 1,702 acres of land and 470 acres of water is administered by the Department of Parks and Recreation.

Present Recreation Activities

Recreation facilities are shown on plate 23. Visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	11,943
Picnicking	1,855
Camping	5,536
Swimming	570
Boating	172
Fishing	9,083
Hunting	64
Total	29,943

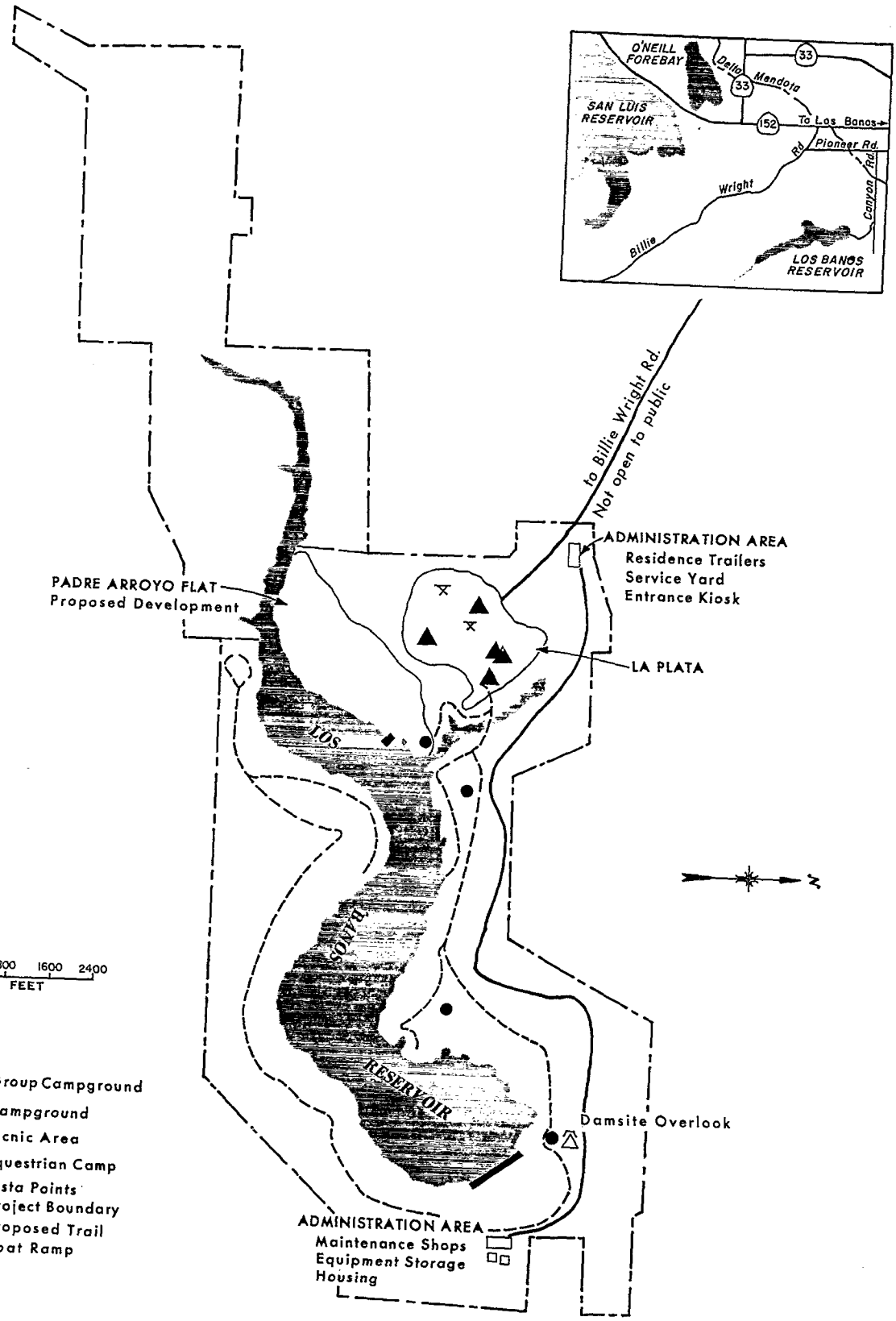
Los Banos Reservoir lies in a canyon with steep-sided walls towering up to 300 feet above the recreation pool elevation. Only one gently sloping flat area of land adjacent to the water level is suitable for recreation development. The La Plata area, located on a bluff overlooking this site, accommodates camping and day-use visitation.

Present recreation facilities are:

Area-activity	Unit	Total
La Plata area		
Camping-group camping	sites	15
Picnicking	shelters	10
Swimming	beach	1
Boat launching	ramp	1
Damsite overlook		
Equestrian camping	area	1

C—067397

C-067397



LOS BANOS RESERVOIR

AUGUST 1976

1158-208-11

Potential Enhancement

Presently, no funds are anticipated for additional recreational facilities at Los Banos Reservoir. However, measures outlined by the Departments of Parks and Recreation and Water Resources for possible facility development are:

1. Construction of an access road between Billie Wright Road and Padre Arroyo Flat. The right-of-way for this rancher's road has been acquired, but is undeveloped for park use.

2. Development of the Padre Arroyo Flat area for day-use, camping, boating, and swimming activities.

3. Development of a recreation trail system, leading east from the Padre Arroyo Flat area to the damsite overlook, then around the dam to the south rim of the reservoir.

4. An additional 760 acres of project lands will be included in the recreation area, as a result of the pending supplement to the recreation agreement with the Department of Parks and Recreation.

Conclusions and Recommendations

Los Banos Reservoir should be developed, in conjunction with the nearby San Luis Reservoir and O'Neill Forebay, to serve the recreation uses that will require the least modification of the site.

C—067399

C-067399

Location and Description

Millerton Lake lies 20 miles northeast of Fresno via well-surfaced county roads. (See plate 24.) The 4,900 surface acres of water at maximum pool (elevation 580 feet) extend 16 miles up the San Joaquin River Canyon. The lake and the adjacent 3,290 acres of land, 1,950 of which are available for recreation, are administered by the Department of Parks and Recreation as a State recreation area. Under a proposed new management agreement now under consideration for Millerton Lake, 4,477 acres of grazing lands administered by the Bureau of Reclamation will be added to the recreation area.

Present Recreation Activities

Millerton Lake is a major water recreation area in the Central Valley. Recreation facilities are shown on plate 24 and listed on table 14. Visitation for the 1975 season was:

Activities	Visitor-days
Sightseeing	307,724
Picnicking	200,020
Camping	61,843
Swimming	83,555
Water skiing	65,546
Boating	51,020
Fishing	28,061
Other[a]	6,635
Total	804,404

[a] Hiking and horseback riding

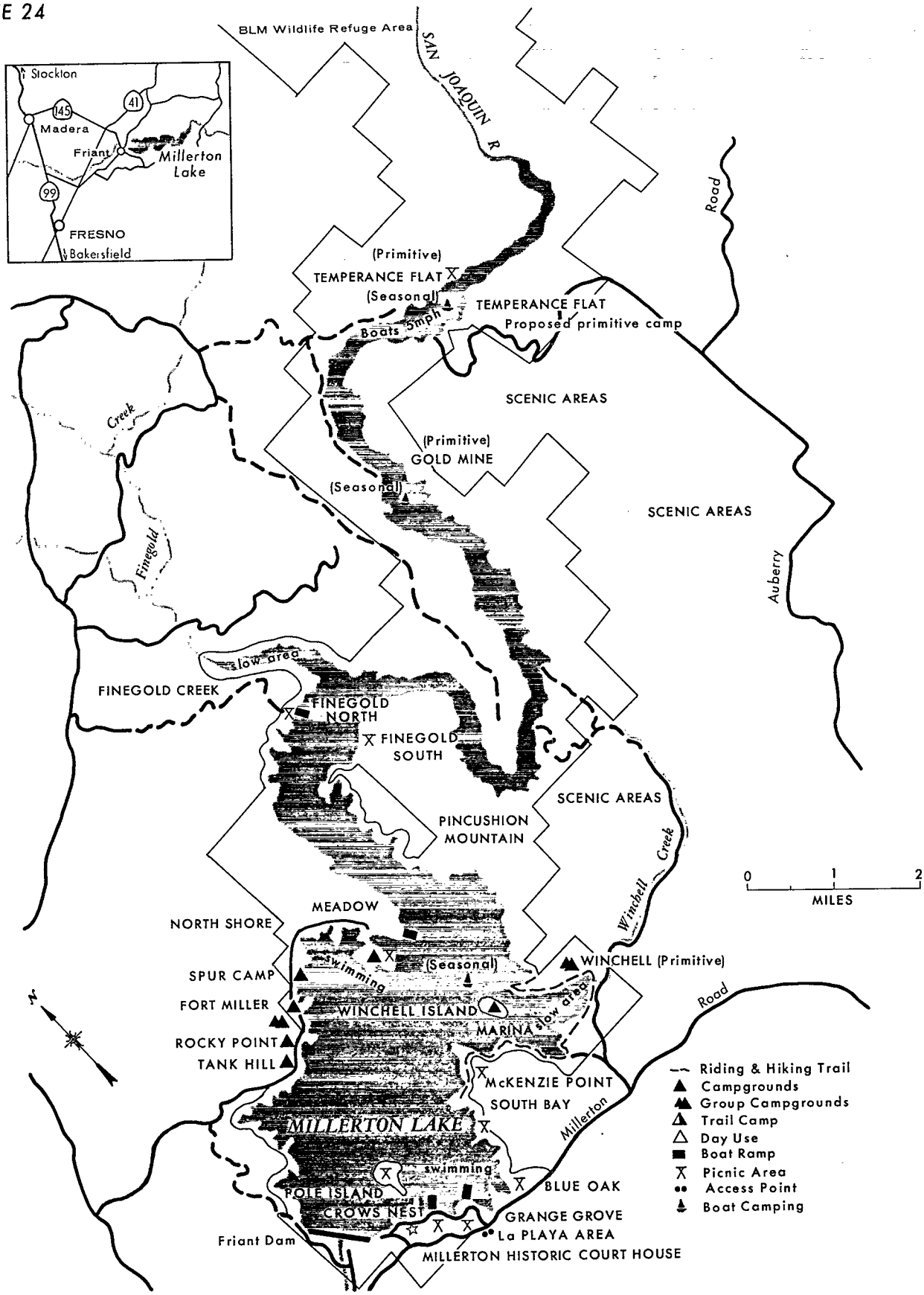
Recent completion of South Bay's multistage boat-launching facility providing access to lower levels of Millerton Lake allows year-round use of the lake. Boating enthusiasts can launch their crafts when water levels drop to the 460-foot elevation.

A management agreement now under consideration provides for Reclamation to contribute up to $100,000 in matching funds during the life of the agreement. The present facilities are fully used, and in some cases overused.

C—067400

C-067400

PLATE 24



MILLERTON LAKE

1158-208-14

AUGUST 1976

C—067401

C-067401

Table 14. Recreation facilities

	Camping sites	Group camping (persons)	Boat launching lanes	Picnic Sites	Picnic Ramadas (persons)	Swimming beaches	Marina (boats)
SOUTH SHORE SUBUNIT							
Crow's Nest			4	30			
La Playa area				75		1	
Grange Grove area				75	1 (50)	1	
Blue Oak Picnic area[a]				20			
South Bay launching facilities							
Elev. 580'-540'			8				
Elev. 540'-520'			8				
Elev. 520'-490'			7				
Elev. 490'-463'			6				
South Bay Picnic area				20			
McKenzie Point area				5			
Winchell Cove area		50		b			200-450
Finegold South area				15	1 (80)		
NORTH SHORE SUBUNIT							
Rocky Point area	19						
Tank Hill area	14						
Fort Miller area	38						
Organized group area		200					
Spur Camp area	11						
Meadow area	23	100[c]	2	56		1	
Finegold North area		d		10			40
LAKE SUBUNIT							
Temperance Flat Campground[e]	25						
Goldmine Boat Camp[f]	10						
Winchell Island	10						
Pole Island				Available			
MILLERTON HISTORICAL COURTHOUSE SUBUNIT[g]							
Total	150	350	35	306	2	3	240-490

a Also includes one horse access.
b Boat-in picnicking available.
c Area used only to accommodate overflow from other campgrounds.
d Campfire circle for 100 persons.
e Also includes 4 acres for day use and 1 mile of trails.
f Trails available. Twelve gold mines located in area.
g The Millerton Courthouse is a replica of Fresno County's first courthouse building. The first floor depicts public offices of the late 19th century. The second story displays the development of law enforcement in California and native history of the Millerton area. A small room is being developed to show the area's prehistoric Indian culture.

C—067402

C-067402

Potential Enhancement

The Department of Parks and Recreation suggests that any funds directed to Millerton Lake in the future be allocated for upgrading existing facilities. A general development plan to assess facility development priorities would be appropriate.

Possible areas for future development are boat-in campgrounds located on the upper reaches of the lake. Additional boat-in campsites could be added to the areas. A portion of the Temperance Flat South area, now owned by Reclamation, to be turned over to the State for operation under the proposed management agreement, could offer additional boat-in campsites. An auxiliary launching ramp is feasible if the demand requires such access.

Young visitors enjoying a nature walk

C—067403

C-067403

The Meadow area's boat-launching ramp has been upgraded to provide greater access to the camping public. The parking lot, although upgraded and expanded to accommodate more boaters, needs additional improvements. To reduce day-use traffic through the campgrounds to launch boats, major launching facilities, along with day-use facilities, a new entrance station, and a water system, should be located at the North Shore entrance area. The launching ramp and other facilities, including a North Shore marina, would also eliminate the hazard of pedestrians crossing the main access roads during the 6- to 7-month recreation season. To a great degree, day use would be separated from the Meadow camping area.

The Winchell Cove area could offer boat-in picnic sites as well as an auxiliary launching facility to supplement the main launching facility on peak-use days. Launching in Winchell Cove, however, will add greatly to existing parking problems in this area. A contact station would be needed to prevent overcrowding.

A hiking and equestrian trail beginning at the South Shore subunit and running to the Temperance Flat area is planned.

Conclusions and Recommendations

1. At the Crow's Nest area, as studies show a great increase of Hobie Cat sailboat launchings off Ramp 1, the ramp should be designated for sailboat use only. The necessary buoy system to delineate boat areas from swim areas is operational. Sailboats present little or no hazard to swimmers.

2. The interpretive features of the Millerton Lake State recreation area should be developed to their potential. This could include a nature trail with nature walks, boating visitors' information booth near the entrance to the launching facilities, increased usefulness of some rooms in the courthouse museum, interpretation of the quartz gold mining of the area, boat tours of the lake's historical and geological features, and training of aids who would assist in the various interpretive programs.

C—067404

C-067404

Location and Description

The New Melones Lake project is located on the Stanislaus River near Jamestown and Sonora, 35 miles northeast of Modesto, via State Highway 108 (see plate 25). The new dam is about three-quarters of a mile downstream from Melones Dam, built in 1926. The 625-foot-high earth and rockfill New Melones Dam, under construction by the U.S. Army Corps of Engineers, is scheduled for completion in 1979. When completed, the project will be transferred to the Bureau of Reclamation for operation and integration into the Central Valley Project. Reclamation will manage all project operation at the lake including public recreation use.

Potential Enhancement

Annual public use of the lake for recreation is expected to exceed 800,000 visitor-days within 3 years after completion of the project and to increase steadily to about 3 million visitor-days annually. Visitors will enjoy the use of 3,000 acres of developed recreation areas, including camping and picnicking areas--with restrooms and showers, access roads, parking lots, boat-launching ramps and related facilities--in settings designed to preserve and emphasize the scenic resources of the project area. The public will be able to enjoy the fish and wildlife resources of the new lake and the special wildlife management area.

Based on the Corps of Engineers' master plan, recreation and fish and wildlife will not be confined to the lake itself but will also include several improvements over some 60 miles of the lower Stanislaus River, downstream from the dam. Insufficient public access now limits recreational use. The Corps will improve accessibility and will provide a series of public recreation and fishing access development areas along the river. Flows will be improved specifically for salmon enhancement and for water quality. Wildlife habitat along the river will be preserved and a trout fishery below Goodwin Dam established to take advantage of colder waters and improved flows released from New Melones Lake.

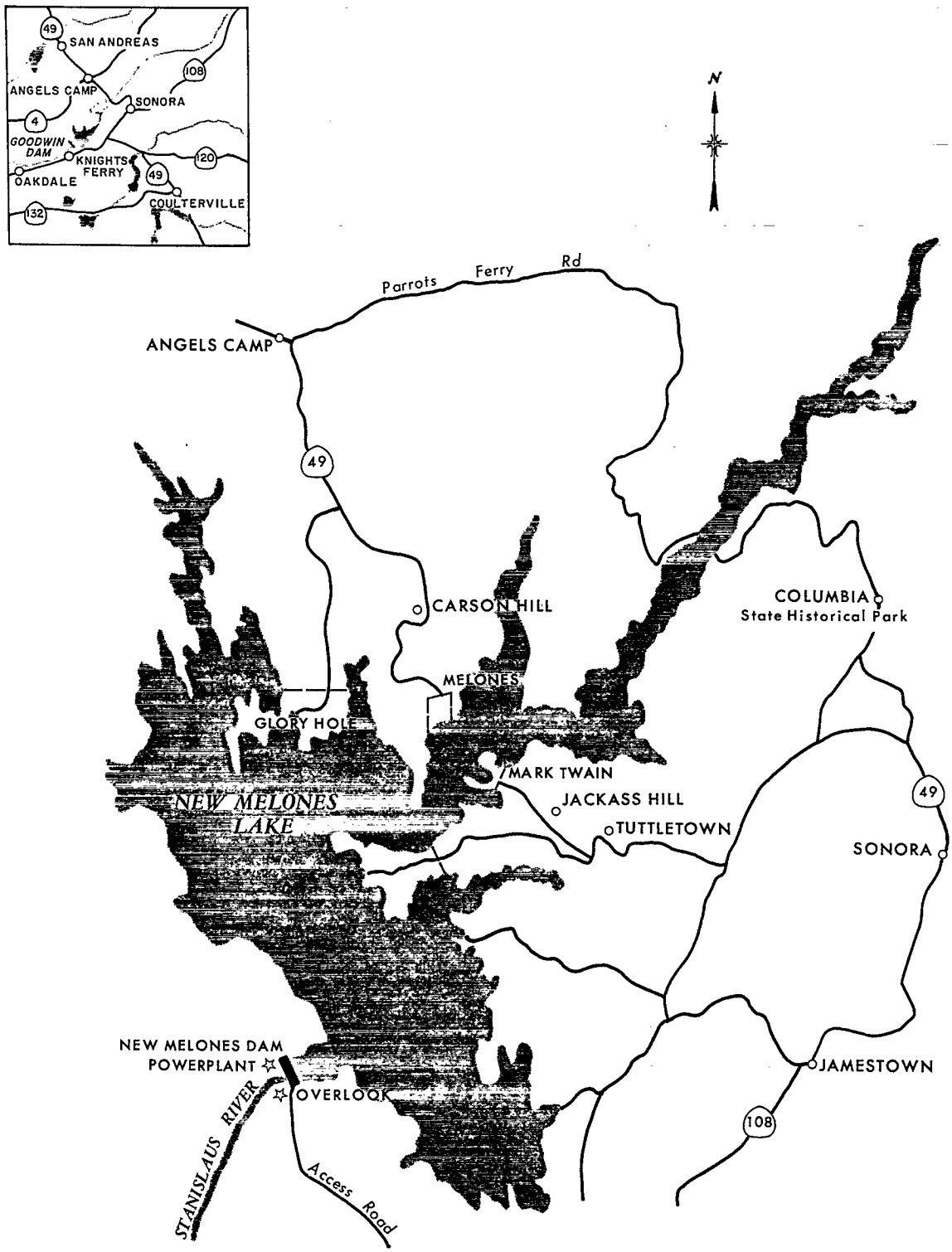
In partial mitigation for the loss of the white water upstream of the dam, the Corps is studying and may provide a 4-mile course for kayakers in the lower river canyon upstream from Knights Ferry.

Conclusions and Recommendations

Project operation personnel have already been assigned to the lake area to insure that lands above maximum pool elevation are protected from needless off-road vehicle and construction-related resource degradation. Provisional facilities with ranger patrols provided by the Corps of Engineers are required in this interim period to discourage irreversible damage to soils and vegetation.

C—067405

C-067405



NEW MELONES LAKE

C—067406

C-067406

Location and Description

O'Neill Forebay, a unit of the San Luis Reservoir State recreation area, administered by the Department of Parks and Recreation, is located northeast of San Luis Reservoir, 11 miles west of the town of Los Banos. The 2,190-acre lake, at maximum pool, is easily accessible from Interstate 5.

Present Recreation Activities

Location of the Forebay and present recreation facilities are shown on plate 26. The visitation for the 1975 season was:

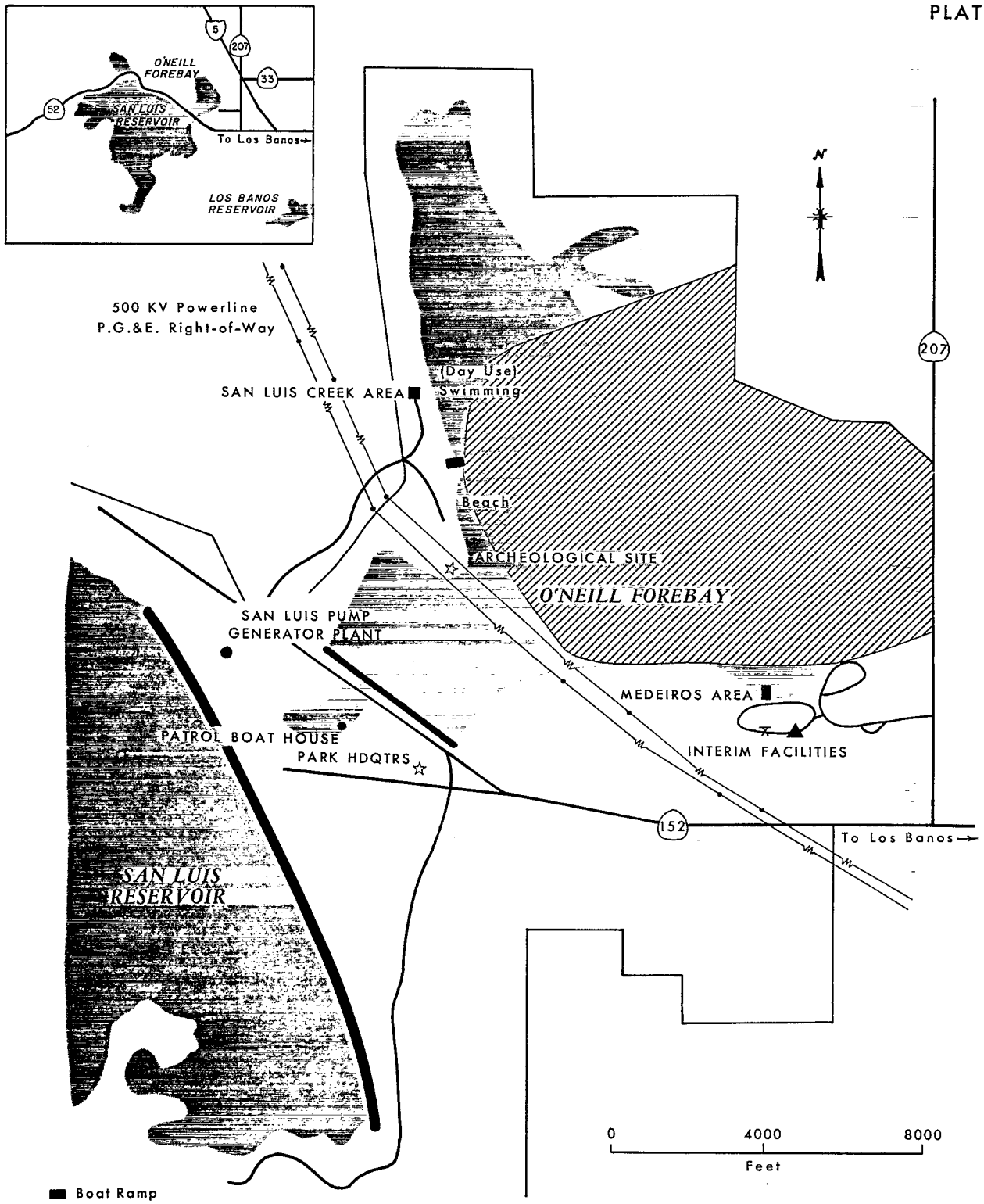
Activity	Visitor-days
Sightseeing	15,832
Picnicking	30,450
Camping	59,979
Swimming	7,690
Water skiing	8,700
Boating	690
Fishing	76,764
Hunting	93
Other (ORV use)	112
Total	200,310

O'Neill Forebay has the same warm recreation season temperatures as San Luis Reservoir, yet offers a different recreation experience. Because of a more favorable sustained pool level, gentler terrain, and wind protection, the Forebay is suitable for year-round recreation.

Presently, there are developed facilities at two areas. The Medeiros area offers interim use facilities for day-use and overnight camping, and the recently completed San Luis Creek area with 25 landscaped acres provides day-use features only.

C—067407

C-067407



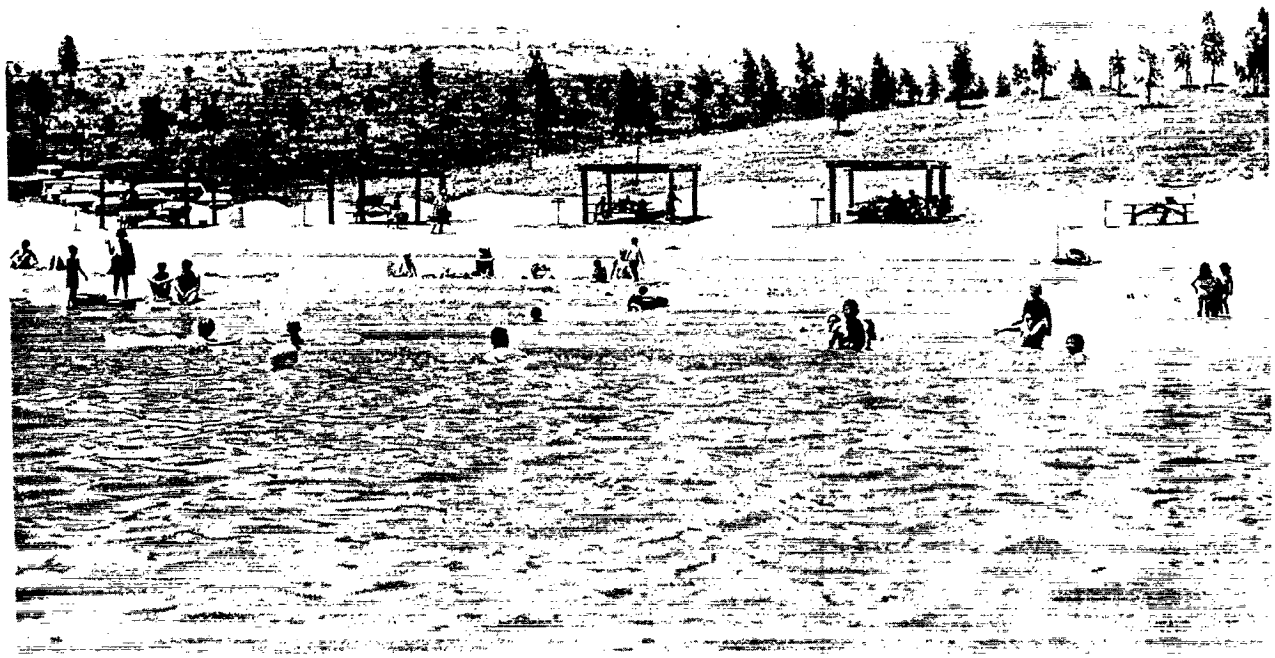
- Boat Ramp
- Campground
- Picnic Area
- Point of Interest
- Wildlife Mangement Area

O'NEILL FOREBAY

C—067408

C-067408

Recreation enhancement at O'Neill Forebay--trees and picnic tables and ramadas.



Present recreation facilities are:

	Camping sites	Boat-launch ramp	Picnic sites	Swimming beaches	Boat dock	Archeological site
San Luis Creek[a]		1	175[b]	2[c]	1	1
Medeiros Area[d]	28[e]	1	28[e]			
Total	28	2	203	2	1	1

[a] Includes two children's play areas.
[b] Includes some with ramadas.
[c] Includes lifeguard tower.
[d] Trees have been planted and area has tables, grills, and ramadas.
[e] Combined camping/picnicking area.

C—067409

C-067409

The State Wildlife Management Area, administered by the Department of Fish and Game, comprises about 700 acres between the Forebay Dam and the Delta-Mendota Canal. A general plan and a management agreement were executed in March 1976, with funds provided for construction, operation, and management.

Potential Enhancement

The Medeiros area has the potential for facility improvement. Its interim facilities offer temporary areas for overnight camping and boat access. The area could support a concession-operated marina, a permanent boat-launching ramp, lodging, picnicking and camping opportunities. Possible development should consider the all-year popularity of O'Neill Forebay; facilities should be designed for both summer and winter recreational activities.

The northern arm of O'Neill Forebay is being considered for boat-in camping. A contract has been let for the planting of 800 trees in this area.

The facilities at San Luis Creek area are complete except for the concessions.

Conclusions and Recommendations

1. Presently, visitors must travel across State Highway 152 to gain access between San Luis Reservoir and O'Neill Forebay. This hazardous intersection could be avoided by constructing an overpass across the highway.

2. The Medeiros area has good access to the shoreline and its relatively flat topography provides easily developable lanes for recreation use. However, future planning must consider the Pacific Gas and Electric Company's Tesla-Los Banos twin 500-kV powerlines which bisect the area.

3. A comprehensive interpretive program could make the many archeological sites in the area a major feature of O'Neill Forebay.

4. A wayside campground should be considered for en route travelers and for those not desiring utility accommodations.

C—067410

C-067410

SAN FELIPE DIVISION

Location and Description

Construction of the San Felipe Division of the Central Valley Project was authorized in 1967. The division will convey a supplemental water supply through Pacheco Tunnel from the San Luis Reservoir to the Santa Clara Valley and vicinity (see plate 27) for irrigation, municipal, and industrial use. It will alleviate further mining of ground water in Santa Clara County, replace boron-contaminated water in San Benito County, and provide water to coastal areas of Santa Cruz and Monterey Counties.

The facilities required to serve Santa Clara and San Benito Counties include 10 miles of open canal, 35 miles of closed conduit, three large pumping plants, and two reservoirs. These new facilities will be integrated with existing storage and conveyance works.

Potential Enhancement

Operation of the project will result in sustained water levels in seven existing reservoirs during the warm season. Since many of the existing reservoirs are now dry during the later summer and fall, fishing and general recreation use will be greatly enhanced.

In its 1972 report, "A Plan for Regional Parks for Santa Clara County," Santa Clara County Planning Department recommended that approximately 8,000 acres of land be purchased for development. About 3,200 of the 8,000 acres would benefit directly or indirectly by stabilization of water levels in six existing reservoirs of the Santa Clara Valley Water District. Division facilities would also enhance streamflow.

The 10-year development plan contemplates the construction of access roads, parking spaces, riding and hiking trails, bicycle paths, and facilities for camping, picnicking, fishing, swimming, sailing, powerboating, and water skiing.

Conclusions and Recommendations

1. Local counties should be contacted for participation as the managing recreation agency.

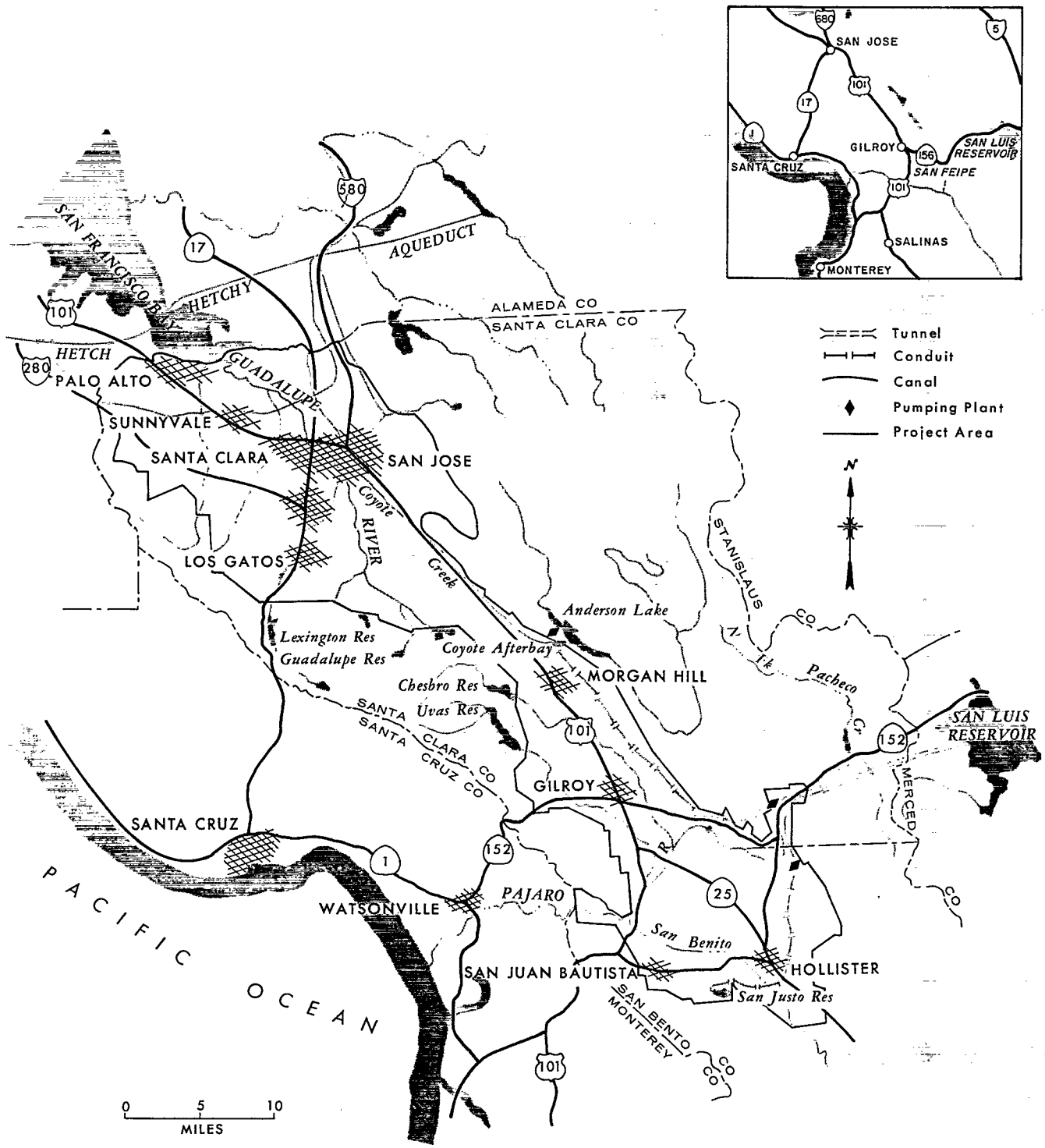
2. Because of the reservoirs' close proximity to the San Jose metropolitan area, user values should be sought for any recreational development.

3. Coyote Afterbay will impact an existing recreation area and should be mitigated in the recreation plan for the area.

4. The recreation potential at San Justo Reservoir should be considered.

C—067411

C-067411



SAN FELIPE DIVISION

Location and Description

San Luis Canal begins at O'Neill Forebay, and carries both Federal and State water 101.5 miles south to Kettleman City. (See plate 28.) At mile 15.8 of the canal, the Dos Amigos Pumping Plant lifts water an average of 125 feet, permitting a gravity flow to the end of the canal. Water from the concrete-lined San Luis Canal is used for irrigation en route, or diverted at the Pleasant Valley Pumping Plant to the Coalinga Canal. At the San Luis Canal's terminous at Kettleman City, the remaining State water is carried by the California Aqueduct into southern California.

Present Recreation Activities

Recreational use of the canal is permitted at six fishing access sites along the canal's length. Funding for the development of these sites was provided by the Wildlife Conservation Board. Operation and maintenance of each site is administered by the recreational department of the county in which it is located.

The fishing accesses have similar facilities: parking for 20 autos, 2 portable toilets, trash cans, and safety devices. All sites have paved berms to facilitate bank fishing, except for the Canyon Road and Mervel accesses, which have fishing platforms. Information about each access site is:

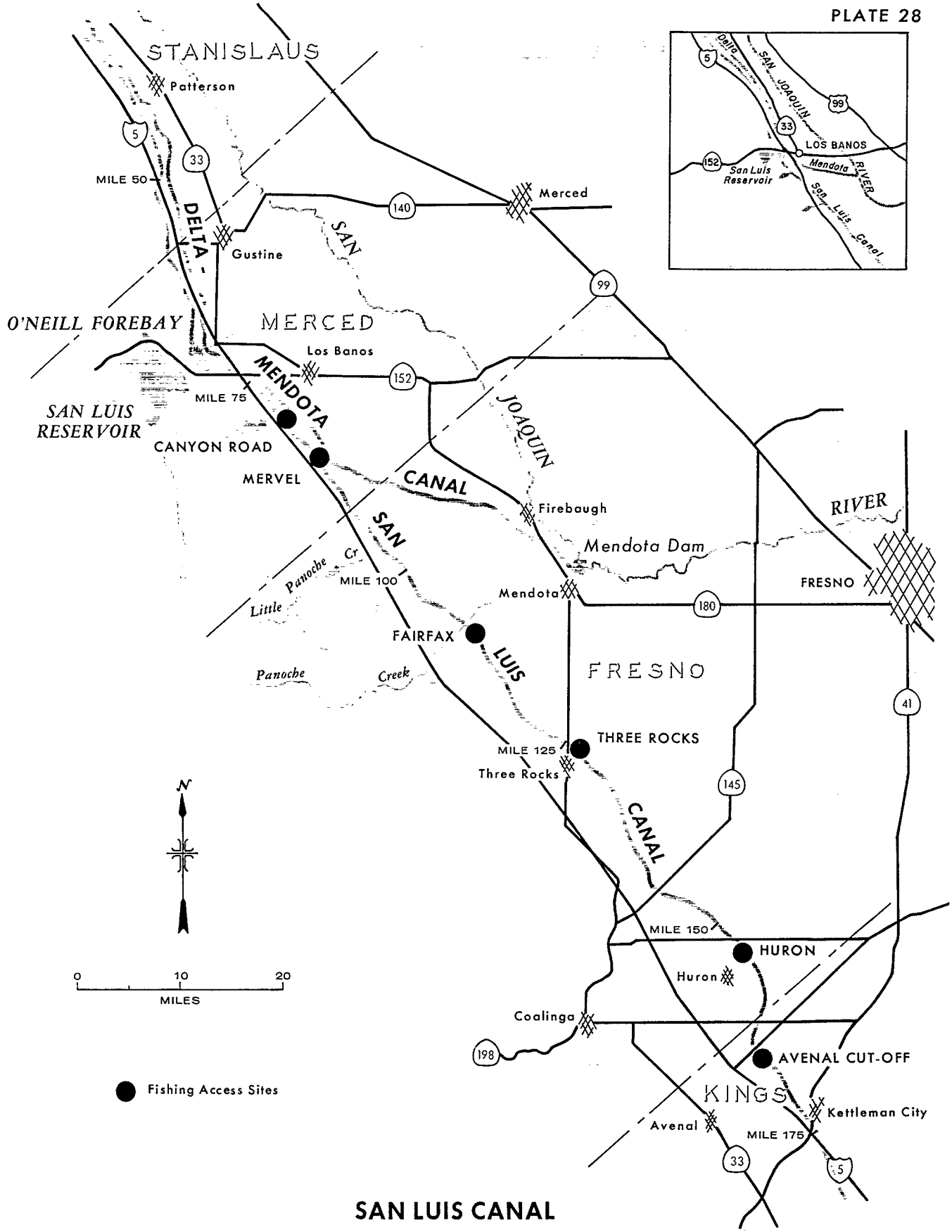
Area	Acreage Land	Acreage Water	1975 visitation[a]	Adminstering agency
Canyon Road	1	1	1,485	Merced County
Mervel	1	1	2,845	Merced County
Fairfax	1	1	6,020	Fresno County
Three Rocks	1	2	5,510	Fresno County
Huron	1	1	4,000	Fresno County
Avenal	1	1	10,950	Kings County
Totals	6	7	30,810	

[a] Number of fishing days.

C—067413

C-067413

PLATE 28



SAN LUIS CANAL

C—067414

C-067414

Potential Enhancement

Developments along the canal are primitive. There is no designated plan for improvement of recreational facilities along the San Luis Canal. However, wildlife habitat has been enhanced along several reaches of the canal. Ten miles of plantings are scheduled for installation this year by the Department of Fish and Game.

Two fishing accesses, Avenal and Fairfax, were opened for operation in the last year. Popularity of the new accesses should indicate if additional developments are needed at other sites.

Conclusions and Recommendations

1. As visitation increases along the San Luis Canal, the existing facilities could be improved by the addition of shade trees, provision for drinking water, and picnic tables. The possibility of the California Aqueduct bikeway continuing south along the San Luis Canal may prompt the upgrading of the facilities and require that additional rights-of-way be acquired for trail use. The Department of Water Resources is determining the feasibility of such a trail system and may provide recommendations for its use within a few years.

More study is needed to determine the requirements for additional facilities.

2. Inherent conditions of the site present problems for recreation development. The steep concrete sides of the canal are a hazard to visitors, so public use would require proper safeguards. The canal itself has affected the migration of wildlife, limiting their movement across the San Joaquin Valley. The long, warm and dry summer further detracts from the desirability of the canal site for recreation. Any future enhancement considerations must deal with these problems.

C—067415

C-067415

Location and Description

San Luis Reservoir is located in western Merced County on the eastern slope of the Diablo Range, 12 miles west of the town of Los Banos (see plate 29). Recreation is administered by the Department of Parks and Recreation. The area is accessible from Interstate 5 and State Highway 152 (the Pacheco Pass Highway) which crosses the northern boundary of the reservoir. The land is steep and deeply eroded. Plant growth is scarce, mostly grass, with some native oaks and shrubs. Rainfall averages 8 inches a year and summer climate is hot and dry. Elevations range from 326 to 2,000 feet over a distance of 6 miles. The San Luis area has 9,184 acres of land and 13,800 acres of water surface.

Present Recreation Activities

San Luis is presently a day-use area. Water-based recreation is the major attraction, with fishing the most popular activity. Recreation facilities are shown on plate 29. Both present and planned facilities are listed in table 15.

Visitation for the 1975 recreation season was:

Activity[a]	Visitor-days
Sightseeing	21,501
Picnicking	a
Camping	a
Swimming	a
Water skiing	258
Boating	2,920
Fishing	172,701
Hunting	125
Total	197,505

[a] Picnicking, camping, and swimming not reported.

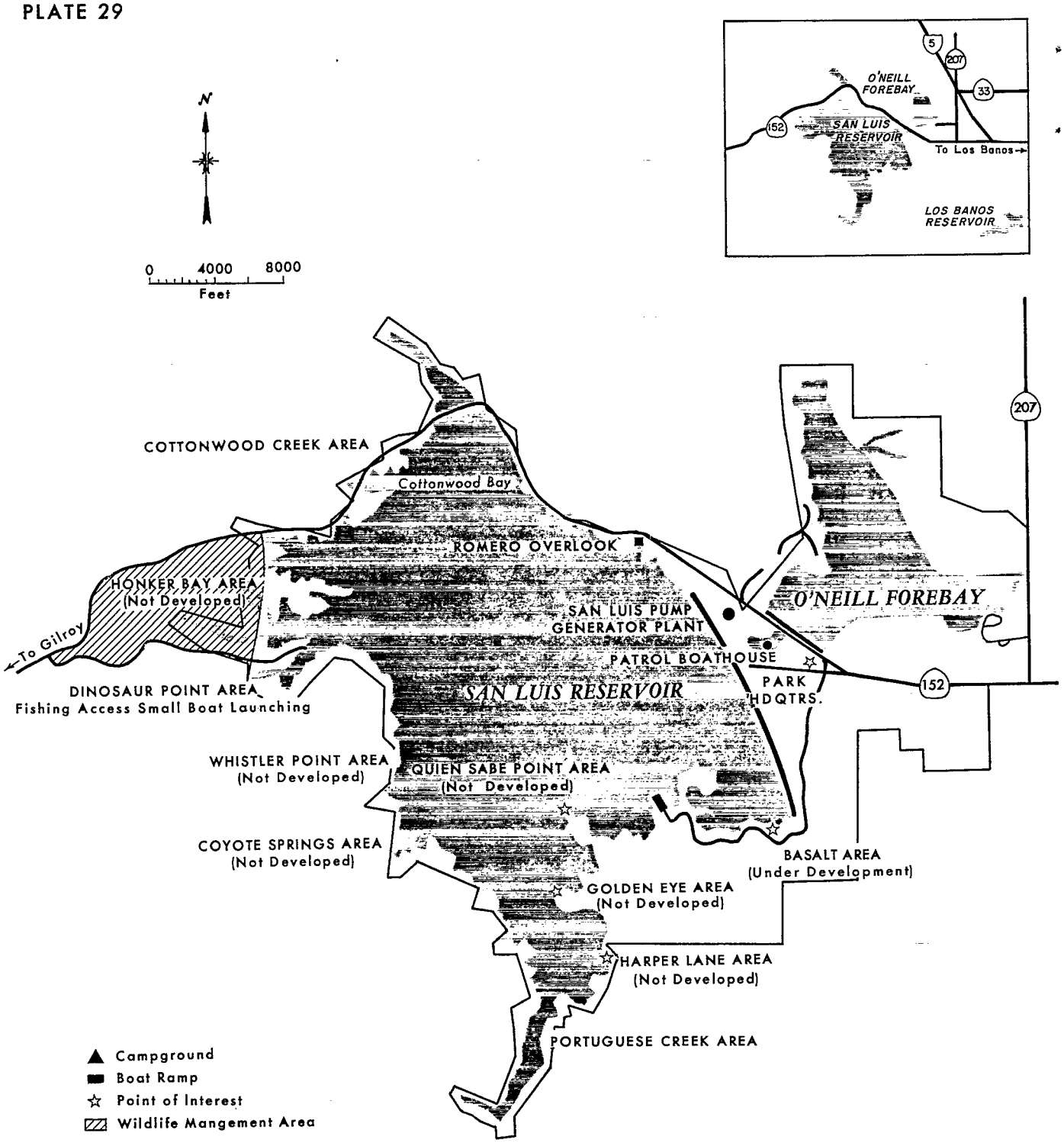
The State Wildlife Management area, administered by the Department of Fish and Game, comprises about 950 acres between the Dinosaur Point Area and State Highway 152. The area was created by a general plan and management agreement executed in March; funds for its construction, operation and management are project provided.

A temporary site for off-road minibike use, located south of State Highway 152, is under study.

C—067416

C-067416

PLATE 29



SAN LUIS RESERVOIR

C—067417

C-067417

Table 15. Recreation facilities

	Camp sites	Boat-launching lanes	Parking spaces	Access road	Boat warning device
PRESENT					
Romero Overlook[a]			50		1
Basalt area		3	149	5	
Quien Sabe Point					1
Dinosaur Point		2[b]	—	c	—
Total		5	199	5	2
FUTURE					
Basalt area	80	—	—	—	—
TOTAL	80	5	199	5	2

[a] Visitor center.
[b] Makeshift 2-lane ramp is provided by using a section of old State Highway 152.
[c] Abandoned Highway 152 serves as access road.

C—067418

C-067418

Swimming at San Luis Reservoir

Potential Enhancement

Future development at San Luis Reservoir is presently focusing on overnight camping facilities at the Basalt area, with 80 camp units and a group camp slated for completion by 1977.

Several undeveloped boat-in access sites in the southern arm of the reservoir, which presently have some visitation, could be improved by providing primitive facilities.

Increased interpretive facilities could emphasize the vast archeological resources of the general area. The cove adjacent to Dinosaur Point could provide interpretive facilities and a parking lot. Tailings from the construction of the Pacheco Diversion Tunnel to the San Felipe Division could be used as fill for such a development.

C—067419

C-067419

Conclusions and Recommendations

1. San Luis Reservoir is located at a point where the cool Pacific Ocean air meets the hot airmass of the San Joaquin Valley, creating a continuous air movement. High winds reach velocities of 30 to 40 miles an hour between April and September, causing hazards to boaters, boat anglers, and water skiers. The Department of Parks and Recreation is experimenting with keeping the Dinosaur Point portion of the reservoir, west of Tunnel Island, open during periods of extreme winds. Most boaters voluntarily remain in the sheltered area.

2. The boat-launching ramp has recently been silted over with a 5-foot accumulation of silt from the eroding bank. If no remedial steps are taken, this process may continue. The soil beneath the continuous concrete slab is wet. Heavy equipment on the slab would collapse the ramp.

> The Basalt area boat-launching ramp should be rebuilt. The continuous concrete slab should be replaced with separate slabs of preformed concrete to better withstand and distribute the stress caused by the heavy equipment required for silt removal.

3. Alternate sites for the boat ramp in the open shoreline are inferior to the present sheltered site located in a draw. Consideration should be given to seeking alternate sites away from the eroding bank. The erosion, and silt deposition and removal would have to be weighed against the hazards of launching and recovering boats in an open area subject to high winds.

4. At the northern shore of the reservoir some visitors park indiscriminately on the narrow shoulders of State Highway 152 and walk to the shoreline. This parking creates hazards to the visitors and highway travelers and should be eliminated. Plans should be made to provide safe and legitimate access at some point on the north shore from Highway 152.

5. Evaluation and approval or disapproval of the experimental minibike site should be completed by July 1977.

C—067420

C-067420

Location and Description

Shasta Lake Unit of the Whiskeytown-Shasta-Trinity National Recreation Area is administered by the U.S. Forest Service. The lake lies 10 to 20 miles north of the city of Redding and its associated communities of the northern Sacramento Valley. Easy and rapid access is provided by Interstate 5 which has five highway interchanges to the area. (See plate 30.)

Present Recreation Activities

Present recreation sites are shown on plate 30, and recreation facilities listed on table 16. Visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	435,600
Picnicking	56,400
Camping[a]	476,350
Swimming	688,000
Water skiing	372,200
Boating	1,443,300
Fishing	386,200
Hunting	4,800
Other[b]	570,000
Total	4,432,850

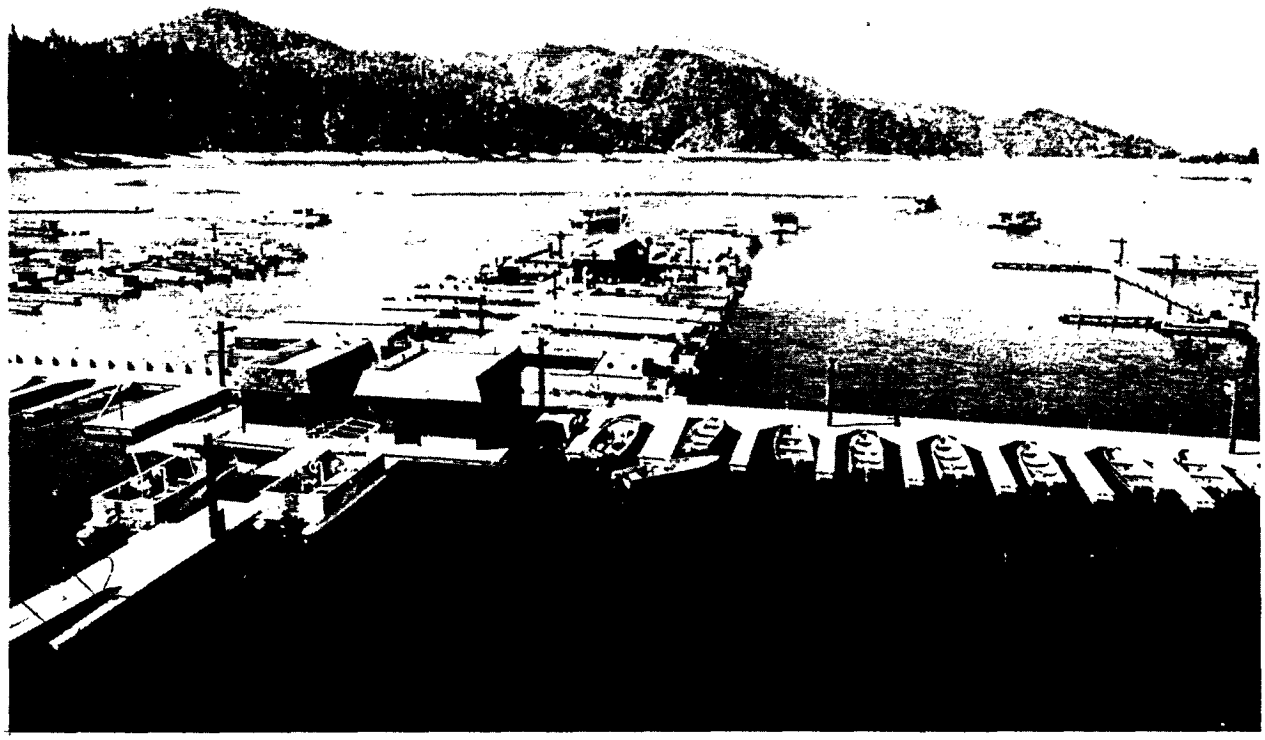
[a] Includes lodging.
[b] Includes hiking, games, resort use, nature, and ORV use.

Because of the hot climate, steep terrain, and deficiencies in forest cover, water-oriented recreation is a main attraction of the Shasta Unit. Land recreation, although prevalent, only complements the water-oriented recreation activities.

Boating accounts for the greatest number of visitor-days. Houseboating has grown in popularity, challenging powerboating for the heaviest use of the lake. The miles of shoreline available, with the large numbers of coves and bays, provide the essential elements of seclusion that are required for a fulfilling houseboating experience. Only mild interest is shown in nonpowerboating activities, such as sailing, rafting, and canoeing. Apparently the existing physical conditions of the reservoir do not encourage these uses.

C—067421

C-067421



One of the several resort areas at Shasta Lake offering a variety of opportunities for boating

Swimming, although popular, occurs from boats rather than from the shoreline. The steep shoreline, the heavy drawdown during the recreation season, and the prevalence of a rocky and muddy shoreline have prohibited development of safe and acceptable swimming facilities.

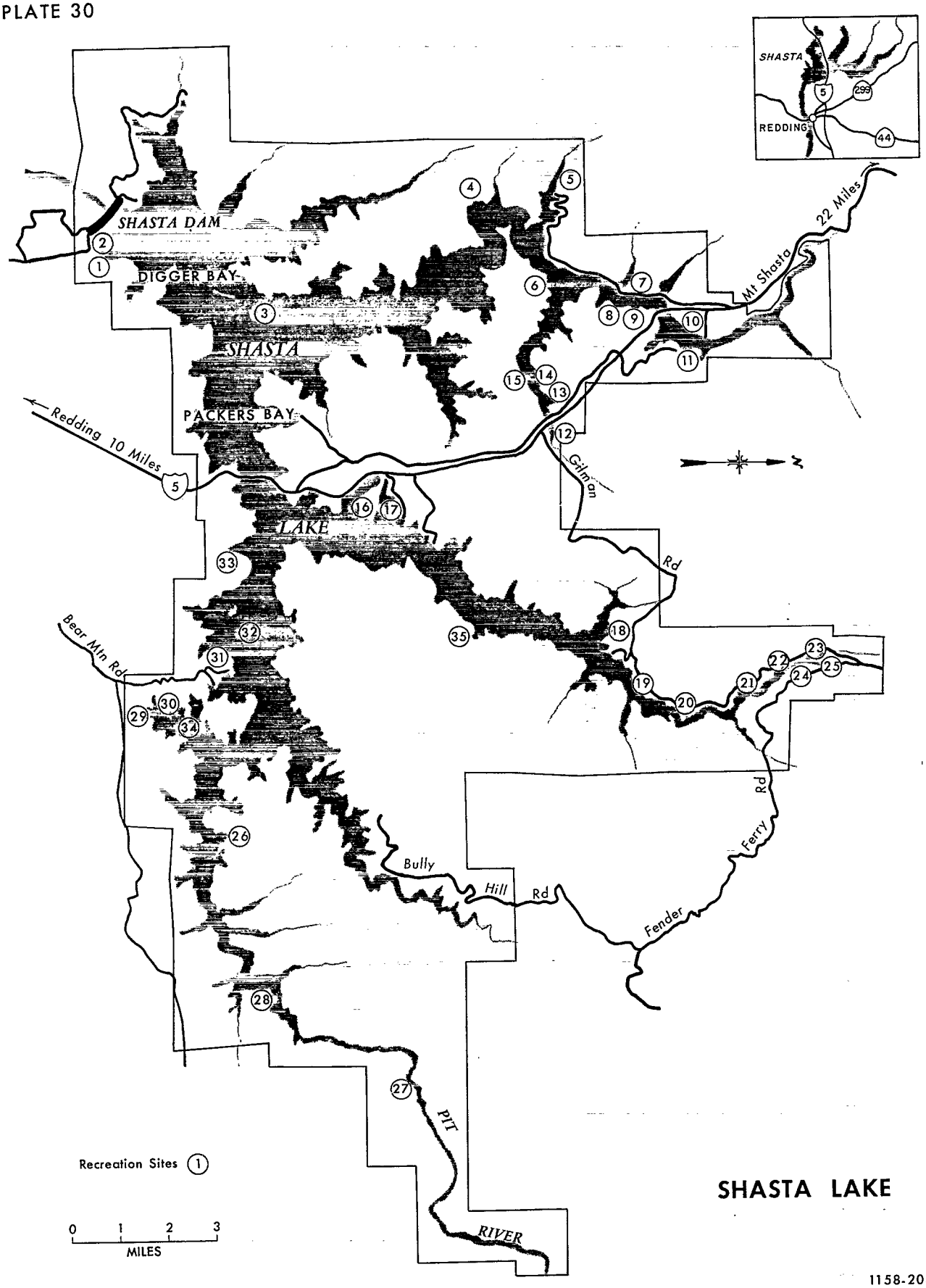
Camping at developed sites provides easy access for visitors desiring to use the water surface during the daylight hours; however, the temperatures are hot and the sites lack a forested atmosphere, being predominately shrub and scrub oat. Boat-in camping on secluded, undeveloped areas around the lake is increasing in popularity. Because the suitable areas are small, this use is well dispersed.

Fishing is an important attraction because of the lake's renown as a cold- and warm-water fishery. Both bass and rainbow trout are available.

C—067422

C-067422

PLATE 30



SHASTA LAKE

AUGUST 1976

118

1158-208-3

C—067423

C-067423

Table 16. Recreation facilities

	Camping sites	Boat ramps	Picnic sites	Swimming beaches
Centimudi		1		
Fisherman's Point			4	
Slaughterhouse Island[a]	13			
Goosenest Cove[a]	10			
Old Man[a]	8			
Salt Creek Point	7			1
Lakeshore West	14[b]			
Lakeshore East	23[b]			
Sugar Loaf		1		
Antlers	59[b]	1		
Gregory Creek	18[b]			
Salt Creek			44	1
Nelson Point	6[b]			
Oak Grove	43			
Lower Salt Creek	12	1		
Baily Cove	33	1		
Wintoon	11			
Hirz Bay	49	1		
Dekkas Rock	10			
Moore Creek	13			
Jennings Creek	8[c]			
Ellery Creek	19[b]			
Pine Point	13[b]			
McCloud Bridge	19[b]			
Point McCloud	32[b]	1		
Rand Island	18[a]			
Stein Creek	5[a]			
Arbuckle Flat	11[a]			
Jones Valley	29[bc]	1		
Rocky Ridge	10[c]			
Mariner's Point	8[c]			
Ski Island	29[a]			
Allie Cove	4[a]			
Green Creek	11[a]			
Total	545	8	48	2

[a] Boat access only.
[b] Trailer spaces available (133).
[c] Boat access also.

Note: U.S. Forest Service is presently supervising modification and expansion of marina facilities at Digger Bay, Shasta Lake, Sec. 12, T33N., R5W., M.D.M.

C—067424

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Potential Enhancement

The possibilities for recreation enhancement have been explored by the U.S. Forest Service in its "Land Use Plan--Shasta and Clair Engle-Lewiston Units." The plan stresses a balanced mix of outdoor recreation use, including both land and water activities, with a strong emphasis placed on the retention of the natural forested outdoor environment.

The net effect of the plan over a 30-year period would be to increase the recreation use to about twice the present use. Generally, with anticipated changes, new carrying capacities are based on land use designations rather than on facility development. However, extension of boat ramps to lower pool levels and the addition of developed campgrounds are proposed.

Conclusions and Recommendations

1. Conflicts are prevalent among activities on the lake's surface. High-performance powerboats generate noises which clash with the natural setting. Fishing, water skiing, and houseboating all use similar resource areas which degrade each activity's experience.

Adequate zoning controls must be implemented to retain the integrity of each activity.

2. Substandard sanitation facilities on some boats create spot pollution problems. Dispersed camping in some locations also create sanitation problems which require greater patrol and cleanup of sites. Floating restrooms could alleviate the problem of spot pollution. Increased education is necessary to inform the public of its responsibilities.

3. Existing developments on private lands do not always conform to county zoning regulations. Potential residential or resort development on some parcels of private lands would destroy scenic, watershed, archeological, or historical values, as set forth by the goals for a National Recreation Area. Exchange or easements should be sought to foster the compliance of incompatible developments to National Recreation Area goals.

C—067425

C-067425

4. The number of developed camping sites on public land is insufficient to meet average summer weekend demand. Most camping facilities on public land do not meet the standards expected by the using public.

> Additional campgrounds that consider user needs could be developed near Packer's Bay. However, it should be realized that the camping experience offered should cater to the transient visitation patterns that predominate.

5. Development activities are reducing and affecting some wildlife habitat areas. Habitat improvement measures are needed to sustain existing populations. Of particular importance are the southern bald eagle, the Shasta salamander, and the osprey, whose specific habitat needs are not completely understood.

6. Control by zoning should reduce the unacceptable soil, vegetation, and esthetic damage caused by present use of off-road vehicles.

7. Resort owners and concessionaires have voiced concern over the potential threat that severe drawdown of water may decrease the desirability of their facilities.

> Shasta Reservoir is not authorized to provide recreation. The reoperation of water for recreation benefits is of secondary priority to the authorized purposes of Shasta Dam.

8. Bridge Bay Resort has one sewage treatment facility to accommodate the wastes from houseboats and a nearby motel. With the possible addition of more houseboats and condominiums at the resort, potential sanitation problems could arise. Enforcement of adequate safeguards should be considered before these problems occur.

C—067426

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SUGAR PINE RESERVOIR

Location and Description

Sugar Pine Reservoir, an authorized feature of the Auburn-Folsom South Unit, American River Division, Central Valley Project, will be constructed on North Shirttail Canyon Creek, about 5 miles northeast of Foresthill. (See plate 31.) This reservoir and a conveyance system will serve municipal, industrial, and irrigation water to the Foresthill area. Initial recreation development will be provided by the Bureau of Reclamation and administered by the U.S. Forest Service. Most of the reservoir area is within the Tahoe National Forest.

Sugar Pine Reservoir will be built to a capacity of 7,000 acre-feet and have a surface area of 160 acres when full. By early September of each year, it will have a capacity of approximately 5,000 acre-feet and a surface area of 100 acres.

Potential Enhancement

The U.S. Forest Service has prepared a recreation plan for the reservoir. Approximately 64,000 visitor-days are predicted annually. Facilities will be provided for day and overnight use. Presently planned are 74 family camp units, two group campsites, 24 family picnic units, a two-lane boat-launching ramp, a swimming beach, an entrance station, and a sanitary disposal site.

Conclusions and Recommendations

The recreation plan for Sugar Pine Reservoir by the U.S. Forest Service should be implemented.

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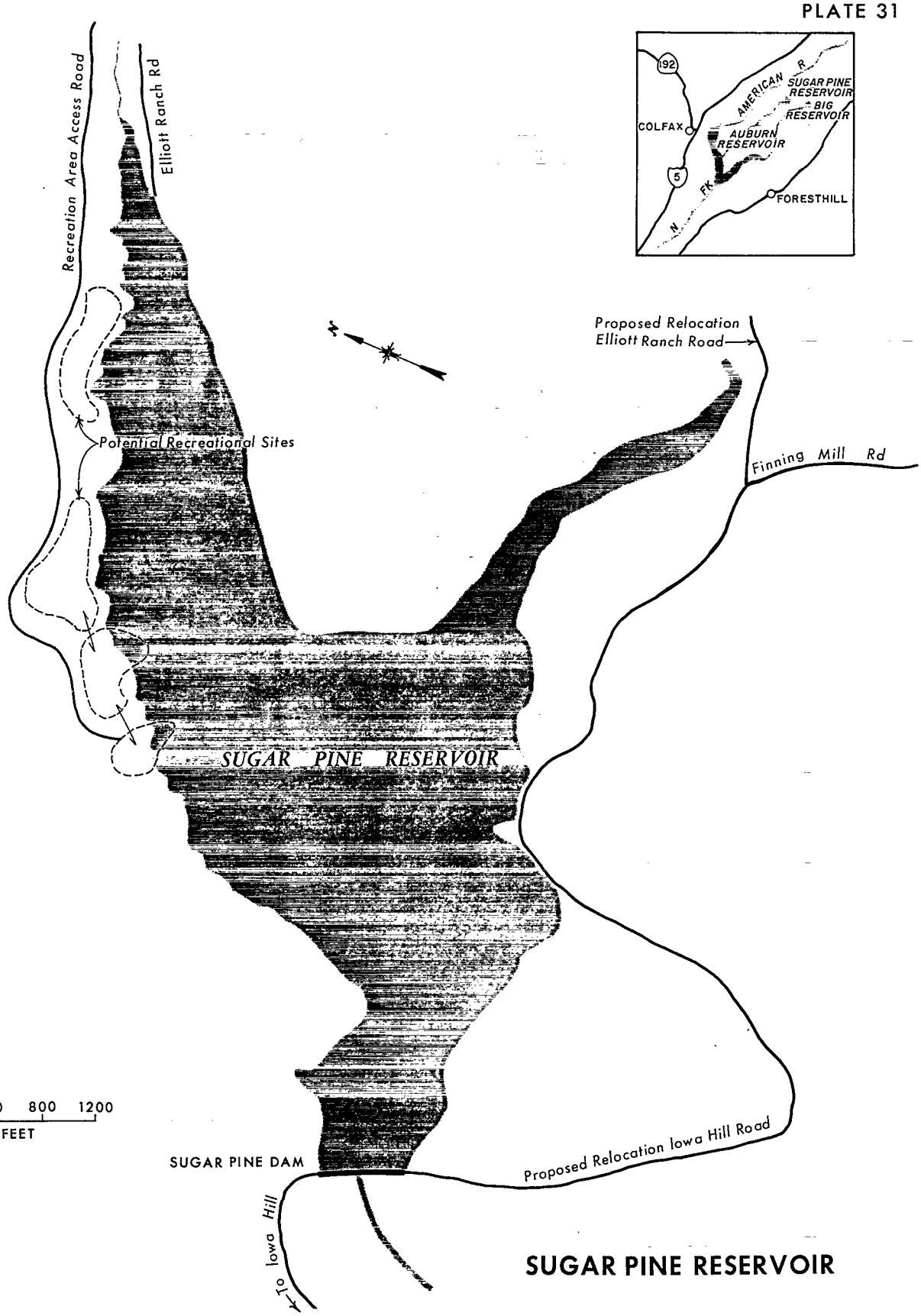
C-067427



SUGAR PINE RESERVOIR

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Always a popular pastime, fishing is an important recreation use. Here a young angler displays a striped bass, one of the many species found in Reclamation reservoirs.

C—067429

C-067429

Location and Description

The Tehama-Colusa Canal, when completed, will be 122 miles long, originating at the Red Bluff Diversion Dam and continuing south to a point near Dunnigan in Yolo County. (See plate 32.) Four reaches (60 miles) of the seven reaches of the concrete-lined canal have been constructed.

The canal in its first 3.2 miles is a dual-purpose irrigation and spawning channel, branching into two 1-mile single-purpose spawning channels and continuing as an irrigation canal. The continuing irrigation canal and spawning channels will eventually be fenced to keep wildlife from entering.

Planned for construction as part of the canal unit are two regulatory reservoirs: Funks Reservoir, 15 miles southwest of Willows; and Oat Reservoir, at the terminus of the canal. Physical data for these reservoirs are:

	Funks Reservoir	Oat Reservoir
Maximum pool fluctuation (feet)	2-3	2-3
Surface area (acres)	750	610
Shoreline (miles)	12.1	11.5
Elevation (feet)	240	166
Capacity (acre-feet)	17,300	14,500

Potential Enhancement

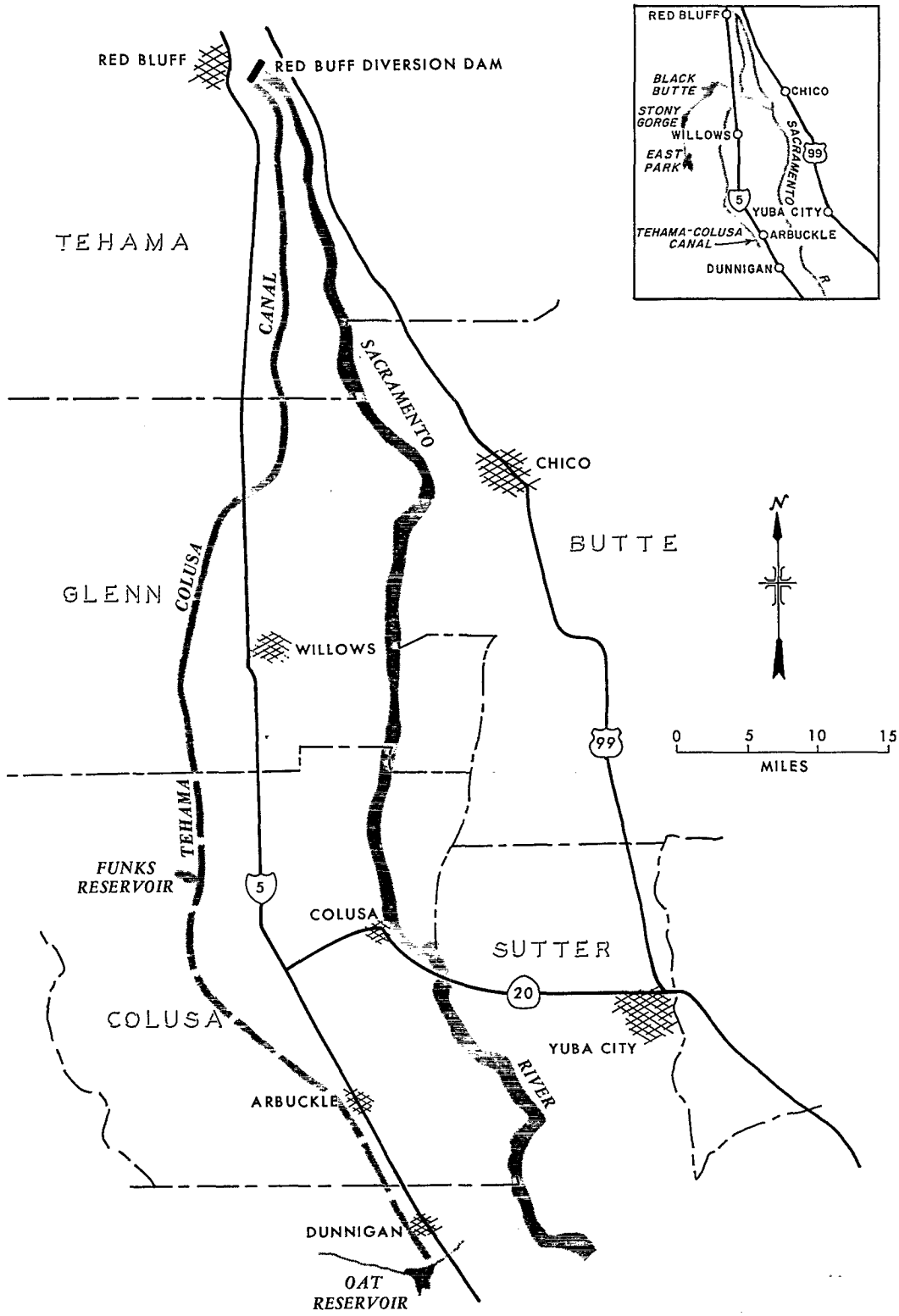
In a 1965 study the National Park Service determined the recreation potential for Funks and Oat Reservoirs. Because of the lack of alternative developed water recreation resources in the area and the proposed stabilized recreation pools, the study found the two reservoirs could provide many recreation benefits. Proposed recreation facilities are:

Activity	Funks Reservoir	Oat Reservoir
Access road (miles)	2	2
Parking spaces	290	220
Water system	2	1
Sanitation units	6	6
Boat ramps (lanes)	1	2
Picnic units	163	50
Beach	available	available
Trails	available	available

C—067430

C-067430

PLATE 32



TEHAMA-COLUSA CANAL

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At Funks Reservoir, 102,000 visitor-days of recreation were expected. Recreation estimates were 110,000 visitor-days initially and 500,000 visitor-days ultimately at Oat Reservoir.

Conclusions and Recommendations

The nature and quality of the recreation demand at the proposed reservoirs have changed since the National Park Service plan. The plan requires updating before recreation facilities are constructed. A bike trail along the canal should be considered.

Yolo County Parks Department has been contacted for cost sharing of recreation facilities as well as for operation, maintenance, and replacement costs at Oat Reservoir. The cost-sharing provision of P.L. 89-72 will be instrumental in determining if more than minimum basic facilities can be built.

C—067432

C-067432

VOLTA WASTEWAY

Location and Description

The Volta (formerly San Luis) wasteway and holding reservoir are located in Merced County 6 miles northwest of Los Banos and 7 miles northeast of O'Neill Forebay. (See plate 33.)

The 6-1/2 mile wasteway begins at Station 022+00 on the Delta-Mendota Canal, follows State Highway 33, crosses the Southern Pacific Railroad near Volta, enters the Volta holding reservoir, and finally empties into Los Banos Creek about 12 miles from its turnout in the Delta-Mendota Canal. The Volta holding reservoir land and water areas--available for waterfowl management, public shooting grounds, fishing, hiking, photography, and wildlife education--are administered by the Department of Fish and Game. The wildlife area contains 2,847 acres of lands and 50 acres of water. Grazing activities are administered by Reclamation, consistent with management recommendations provided by the Department of Fish and Game.

Present Recreation Activities

Visitation for 1975 was:

Activity	Visitor-days
Sightseeing	749
Fishing	4,596
Hunting	7,540
Other	195
Total	13,080

Potential Enhancement

The Volta wasteway has a potential to offer additional opportunities for hiking, photography, wildlife viewing, and education in plant and animal life.

Conclusions and Recommendations

Activities could be expanded with additional facilities and manpower if funds could be made available to the Department of Fish and Game. However, being an operating area, the wasteway is hazardous for increased public use without proper safeguards.

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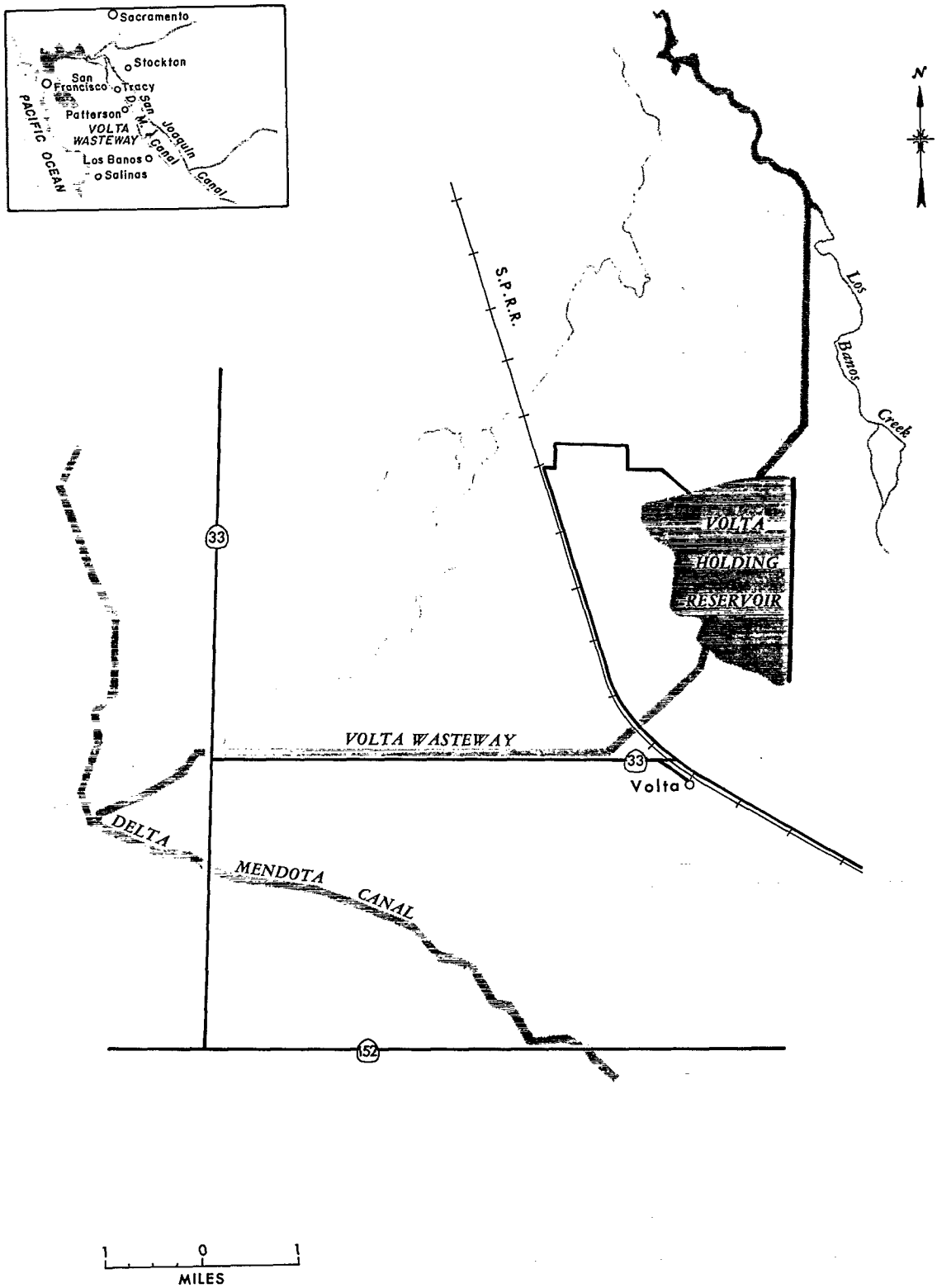

VOLTA WASTEWAY RECREATION AREAS

AUGUST 1976

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WHISKEYTOWN LAKE

Location and Description

Whiskeytown Lake, a 3,250-acre lake impounded on Clear Creek, is a unit of the Whiskeytown-Shasta-Trinity National Recreation Area administered by the National Park Service. Located 8 miles west of Redding, the lake is accessible from State Highway 299. Five access roads bring visitors to the water and the nearly 42,000 acres of supporting land.

Present Recreation Activities

Present recreation facilities are shown on plate 34, and listed on table 17.

Major developments are located at three main sites: Oak Bottom, Brandy Creek, and Whiskey Creek. An environmental interpretive center is located a mile downstream from Whiskeytown Dam. In addition, a 200-capacity group camp is located at Dry Creek. The visitation for the 1975 season was:

Activity	Visitor-days
Sightseeing	420,512
Picnicking	52,146
Camping	77,868
Swimming	237,372
Water skiing	85,470
Boating	170,940
Fishing	73,000
Hunting	8,760
Other[a]	147,949
Total	1,274,017

[a] Includes horseback riding, hiking, and nature studies.

Potential Enhancement

The Whiskeytown Unit now makes a major contribution to total opportunities offered by a National Recreation Area, and has great potential for recreation enhancement. Alleviating present overcrowding, resolving minor conflicts among activities, and recognizing impending threats to the area can bring about that enhancement.

C—067435

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The National Park Service drafted a Master Plan and an Environmental Assessment of the Plan, both dated April 1975. The plan's objective is to analyze the natural and special resources of the unit and to plan its development and use in such a manner that the widest variety of recreational activities, complementary to the Trinity and Shasta Units, can be realized. The future facilities that would be provided by implementation of the proposed plan are listed in table 17.

The Whiskeytown Environmental Interpretive Center

C—067436

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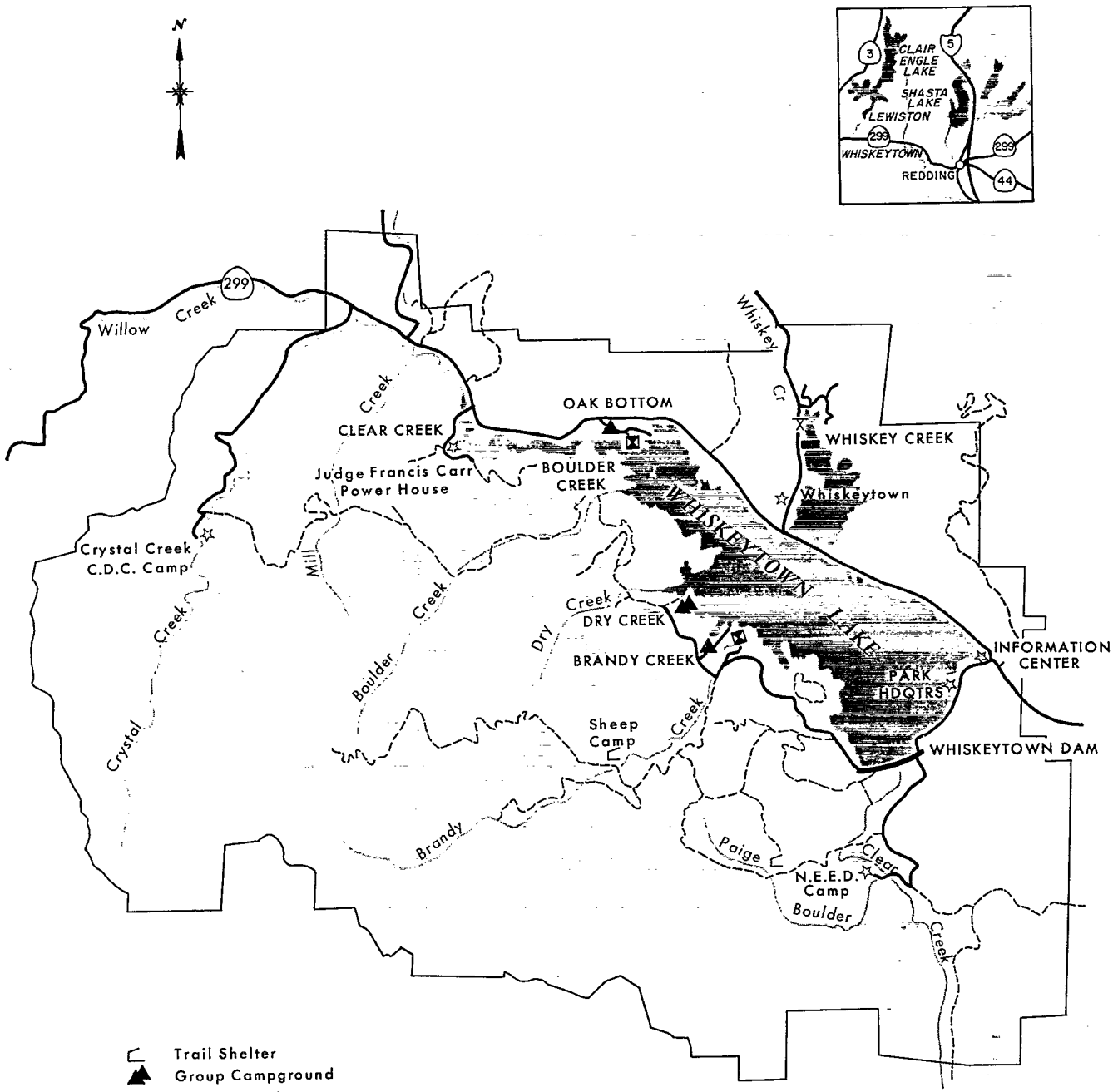
PLATE 34



WHISKEYTOWN LAKE

AUGUST 1976

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Table 17. Recreation facilities

	Camping spaces	Boat-launching lanes	Picnic sites	Swimming beaches (persons)	Moorage spaces
PRESENT					
Oak Bottom	100	7	19	300	36
Brandy Creek		8	58	500	80
Whiskey Creek		5	16		
Powerhouse			6		
Dry Creek	a				
Boulder Creek					—
Back Country	—	—	—	—	—
Total	100	20	99	800	116
FUTURE					
Oak Bottom	105				
Brandy Creek			48	500	25
Whiskey Creek	300				
Boulder Creek	400		50	1[b]	
Back Country[c]	180[d]	—	—	—	—
TOTAL	1,085	20	197	1,300+	145

[a] Group camp for 200 persons.
[b] 1,400 linear-foot beach.
[c] Future development includes 55 miles of all-vehicle roads, 15 for 4-wheel drive, 100 miles of hiking and horse trails, and 7 trail heads with 350 parking spaces.
[d] 50 primitive campsites, 70 sites at trail heads, and 60 sites for hikers.

C—067438

C-067438

Conclusions and Recommendations

1. Present tentative long-range plans of the California State Division of Highways call for making State Highway 299 a freeway from Redding through the Whiskeytown area and beyond. Large access structures would be required at five points for entrances to the park. The resulting incompatible access structures, unsightly landscape scars, high-speed traffic, disturbance of sandy soils causing silting of the lake, and increased traffic noise would all degrade the atmosphere of the park.

> The Division of Highways should devise measures to eliminate completely or minimize all the problems associated with highway construction.

2. Logging on unstable sandy soils is a danger to the park. Loose, exposed soils become eroded and gullied. Logging adjacent to the park accelerates siltation of the reservoir and threatens to destroy kokanee salmon spawning beds of Willow Creek and parts of Clear Creek.

> It is recommended that the California Division of Forestry, which regulates all logging, accept the suggestion of the National Park Service and adopt logging practice standards that will protect the Willow Creek and Clear Creek watersheds and lands, and diminish siltation of the reservoir.

3. The Division of Forestry proposes a 100-foot-wide fuel break with possibly a fire road to be built along the southern and western portions of the area's boundary. The fuel break, or modification of the vegetative cover, would be accomplished through controlled and highly selective thinning of the forest canopy and understory. The width of the modification would vary, averaging about 100 feet, and blend into the background. Trails for hiking and horseback riding could be located along the break and vistas opened at desired points of interest. Open spaces which would not be intrusive could be provided for helipads, to be used for rescue and transfer of men and equipment for the suppression of fires and for other park operations.

4. The Division of Forestry suggests controlled burning to: (a) accelerate sprouting of plants that would provide more deer forage; (b) spread knob-cone pines growth for needed shade; and (c) create fuel breaks for decreased fire hazards.

C—067439

C-067439

Before these suggestions are implemented, a study should be made by the National Park Service to determine the effects of burning upon the ecology of the park. Chaining and selective plant removal should also be considered as alternatives to controlled burning.

5. Beaches and campgrounds are presently overcrowded. Implementation of the Master Plan would greatly increase beach areas and the number of campsites. This would alleviate pressure on the present facilities and better distribute the visitors throughout the park.

6. Powerboating creates conflicts with other slower water-based activities, a condition common to all three units to the National Recreation Area.

Additional studies should be made in cooperation with the U.S. Forest Service to alleviate this problem.

7. Encroachment by planned private development on small lots adjacent to the north boundary threatens the beauty of the park. Residences and certain other buildings would require septic tanks which could be a threat to the quality of the lake water.

The approach of the Park Service to encourage Shasta and Trinity County Boards of Supervisors to adopt zoning and other regulations to protect the park from such encroaching developments should be implemented.

C—067440

C-067440

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East Bay Regional Park District, Oakland, CA

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City of Red Bluff, Red Bluff, CA

Fresno County Department of Parks and Recreation, Fresno, CA

National Park Service, Whiskeytown, CA

Shasta County Department of Water Resources, Redding, CA

State of California, Department of Fish and Game, Fresno, CA

_____, Department of Parks and Recreation, Sacramento, Los Banos, and Friant, CA

U.S. Army Corps of Engineers, Sacramento District

U.S. Bureau of Outdoor Recreation, San Francisco, CA

U.S. Bureau of Reclamation, Folsom, Redding, Willows, Tracy, Fresno, and Sacramento, CA

U.S. Forest Service, Weaverville, Nevada City, and Redding, CA

Wildlife Conservation Board, Sacramento, CA

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