

L. B. Boydstun

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

DEEP CREEK WILD TROUT
MANAGEMENT PLAN

DEEP CREEK, SAN BERNARDINO COUNTY

REGION 5 INFORMATION BULLETIN
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By

FRANKLIN G. HOOVER, FISHERY BIOLOGIST

UNDER THE SUPERVISION OF

JAMES ST. AMANT, ASSOCIATE FISHERY BIOLOGIST

AND

KEITH R. ANDERSON, FISHERIES MANAGEMENT SUPERVISOR

REGION 5

JULY 1983

FRED A. WORTHLEY JR., REGIONAL MANAGER

CALIFORNIA WILD TROUT MANAGEMENT PROGRAM

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JULY, 1983

Approved by:

Keith R. Anderson

for Fred A. Worthley Jr.
Regional Manager, Region 5
California Department of Fish and Game

8/23/83

Date

Robert R. Tyrrel

Robert R. Tyrrel
Forest Supervisor
San Bernardino National Forest
U. S. Forest Service

9/7/83

Date

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DEEP CREEK, SAN BERNARDINO COUNTY

Prepared by

California Department of Fish and Game

with assistance from

and

in cooperation with

U. S. Forest Service

San Bernardino National Forest

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PREFACE

In 1965, the Department of Fish and Game in the California Fish and Wildlife Plan recommended expansion of trout management activities to "protect and enhance wild trout fisheries" (CDFG 1965). In response to this recommendation, and to address concerns expressed by the public, the California Wild Trout Program was established by the California Fish and Game Commission in 1971. The primary purpose of the program is to preserve attractive stream trout fisheries which are naturally sustained by wild strains of trout rather than artificially maintained by domesticated, catchable-sized trout stocked on a put-and-take basis. Emphasis is placed on protecting the aquatic environment to perpetuate natural production and on preserving the natural character of the streamside environment to provide a quality angling experience. In addition, appropriate angling regulations are established to protect and manage the wild trout resource and fishery.

Since 1971, the Fish and Game Commission has designated eight backcountry^{1/} and nine roadside streams as wild trout streams (Martis Creek Lake, the only lake in the program, was added in 1974). Each wild trout stream is to have its own management plan and angling regulations which will emphasize individuality and diversity. Deep Creek, San Bernardino County, has been classified as a candidate wild trout stream and is being managed in anticipation of official designation.

Management goals for each stream will use the general goals of the wild trout program as guidelines. These goals are:

1. To maintain wild trout populations at levels necessary to provide satisfactory recreational angling opportunities.
2. To maintain and enhance where possible the habitat required for optimum wild trout production.
3. To preserve the natural character of the streamside environment.

This plan was prepared to identify the Department of Fish and Game's current and proposed activities on Deep Creek, and to define the management direction to be taken in coordinating with agencies responsible for environmental protection. Along most of Deep Creek, land use planning is the responsibility of the U.S. Forest Service. Pursuant to the Memorandum of Understanding between the Department and the Forest Service (Title 2600, Forest Service Manual), the Department will identify management direction which is intended to preserve and protect fish and wildlife resources in National Forests and the Forest Service will recognize the Department's responsibilities and concerns along with those of the other users of the forest in their multiple use planning.

^{1/}Remote with access largely provided by trails.

RESOURCE STATUS

General Setting

Deep Creek is located in southern California about 60 miles east of the Los Angeles metropolitan area. Encompassing a drainage of 62,995 acres, Deep Creek is the major drainage on the north slope of the San Bernardino Mountains in San Bernardino County (Figure 1). It originates east of the community of Arrowbear at an elevation of approximately 6,200 feet and flows north and west for approximately 22 miles before joining the West Fork of the Mojave River at an elevation of 3,000 feet (Figure 2).

The primary tributary to Deep Creek is Holcomb Creek which originates north of Big Bear Lake and flows westward. Secondary tributaries include Crab, Green Valley, Sheep, Shake, Hook, Little Bear, Coxey and Willow creeks.

The elevation range and physical setting of Deep Creek result in wide fluctuations in climatic conditions. Air temperatures along the creek during the summer are often above 80°F. at higher elevations and over 100°F. near its confluence with the West Fork of the Mojave River.

Average annual precipitation in the Deep Creek drainage ranges from 16 inches at lower elevations to 40 inches near its headwaters. Snow is common above 4,000 feet during winter. It provides the source of most runoff and is not uncommon in the lower portions of the creek and adjacent desert areas.

Streamflow records from a gauging station on Deep Creek 1/2 mile above the confluence with the West Fork of the Mojave River show the average flow over a 68-year period was 65 cubic feet per second (cfs) (U.S. Geological Survey 1980). Recorded flows ranged from a high of 46,600 cfs on 2 March 1938 to a low of zero cfs on 17 and 18 July 1961. From October 1960 to September 1976, the average monthly streamflow fluctuated from a low of 1.7 cfs in August to a high of 148.5 cfs. in February (Figure 3).

Since these measurements were taken near the lowermost end of Deep Creek they should not be viewed as being representative of flows in the higher elevation reaches of the stream. They are, however, indicative of the widely varying flows of Deep Creek both from year-to-year and from month-to-month.

Pre-tertiary igneous and metamorphic rocks make up the major portion of the San Bernardino Mountains. Soils are predominantly residual and youthful, lack profile development, and average only 1 to 3 inches in depth.

Vegetation along the upper half of Deep Creek is primarily mixed conifer and oak forest. Various chaparral and chaparral-woodland combinations cover hillsides at mid-elevations, while desert vegetation is found below the confluence of Willow Creek (Figure 4).

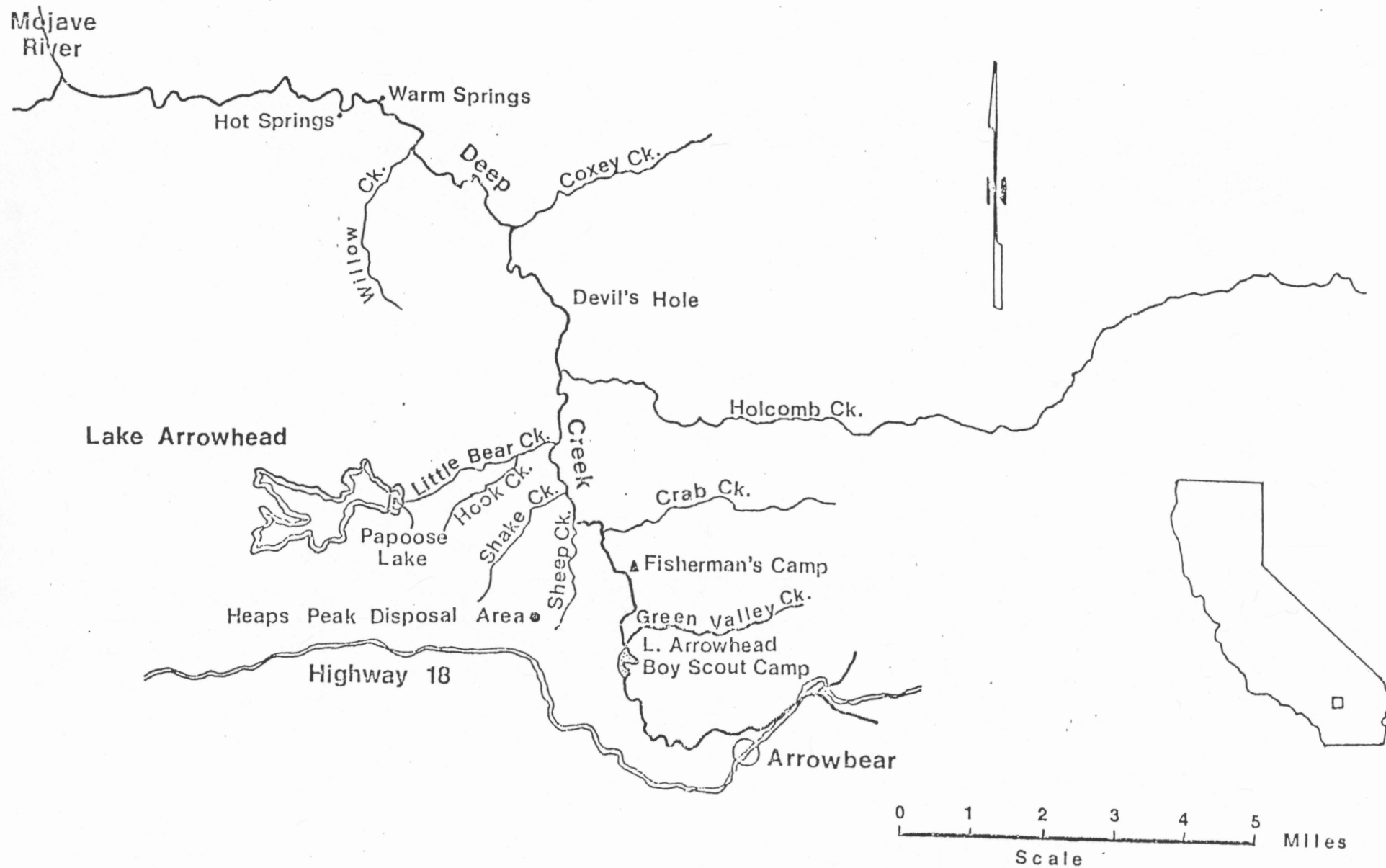


Figure 1. Deep Creek drainage and general location

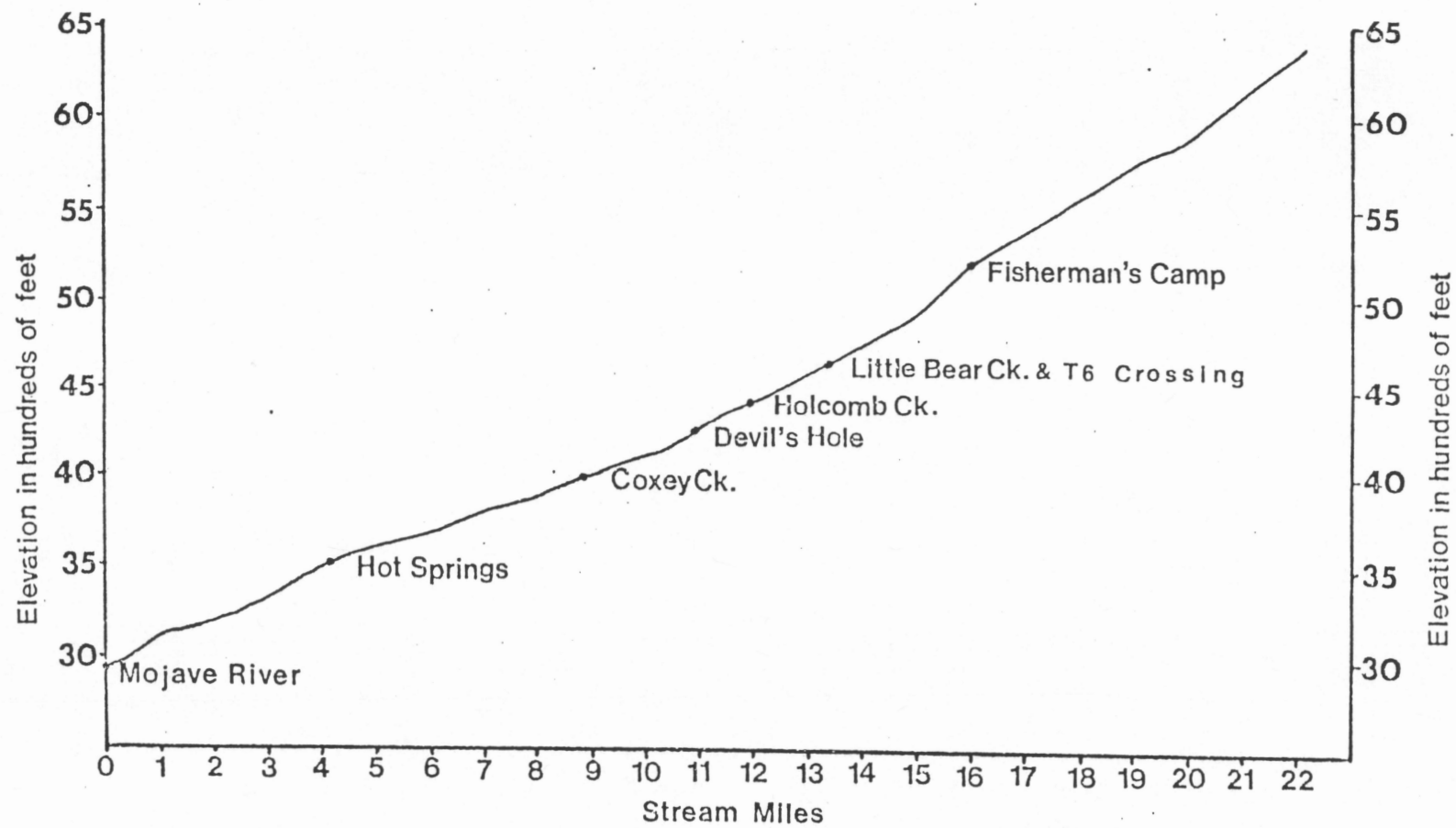


Figure 2. Longitudinal stream profile of Deep Creek

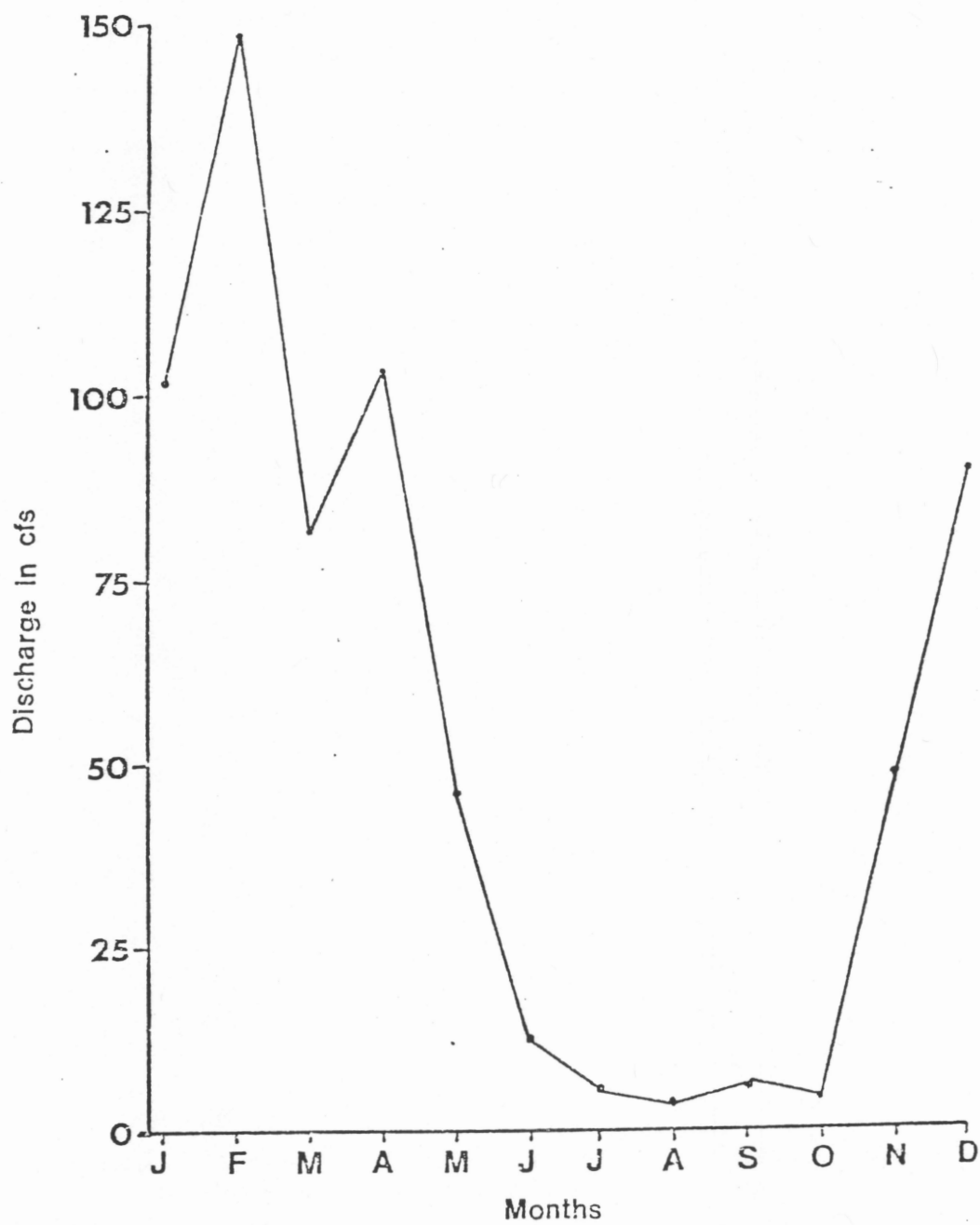


Figure 3. Deep Creek mean monthly discharge Oct. 1960 - Sept. 1976

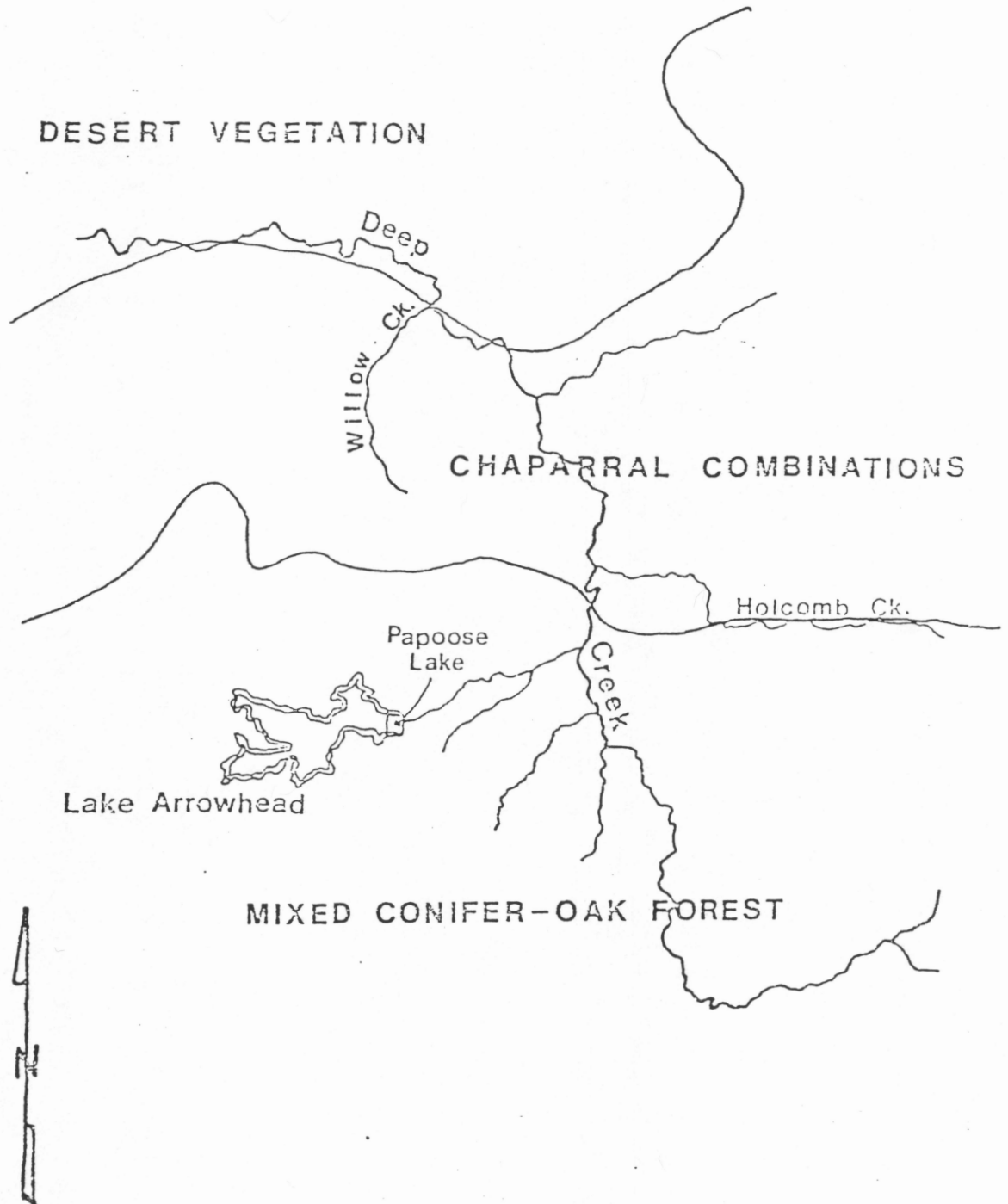


Figure 4. Vegetation types in the Deep Creek area

Riparian vegetation along Deep Creek includes white alder (Alnus rhombifolia), sycamore (Platanus racemosa) and Fremont cottonwood (Populus Fremontii).

Aquatic vertebrates, other than fish, that have been reported inhabiting the stream include: Pacific pond turtle (Clemmys marmorata), two-striped garter snake (Thamnophis couchi hammondi), California slender salamander (Batrachoseps attenuatus), western toad (Bufo boreas), Pacific treefrog, (Hyla regilla) and California treefrog (Hyla cadaverina). Beaver (Castor canadensis) are also present in Deep Creek as well as some of its tributaries.

Access

Access to Deep Creek is surprisingly limited considering the stream's length and the degree of human habitation and development in the San Bernardino Mountains (Figure 5).

There is vehicle access to the confluence of Deep Creek and the Mojave River. The lowermost portions of Deep Creek are, therefore, readily accessible by foot from that location.

In the past the Warm and Hot springs area of Deep Creek was accessible by vehicles. The Forest Service, however, closed the access road to reduce recreational use of that area in order to lessen pollution of the stream by human waste and to decrease the opportunity for spread of water borne disease organisms. The area is still accessible by foot along Trail 3W02 which extends from the old road to the Hot Springs.

The central portion of Deep Creek is usually reached by three Forest Service roads from the Lake Arrowhead area. Roads 2N26 and 2N25 join 3N34. Road 3N34D branches off from 3N34 to provide access to a portion of Deep Creek known as Devil's Hole. Road 3N38 extends north, then east, from the juncture of 3N34 and 3N34D. Many fishermen park at the end of 3N38 and walk a short distance to Deep Creek. Another access route from the Lake Arrowhead area is Road 2N75. It joins road 3N34 which provides additional access from the east.

Road 3N34 also crosses Deep Creek near the road's juncture with Road 3N15 (Hook's Creek Road) and provides stream access that is quite popular with fishermen and other recreationalists. This stream crossing is popularly known as "T6 Crossing".

Further upstream, Road 2N18 extends from Hook's Creek Road to Deep Creek where there is a small campground called Fishermen's Camp. In the past this road was open, but now there is a locked gate that prevents access by the general public. There are several trails, including the Pacific Crest Trail, (PC 2000), which provide pedestrian access to Deep Creek. The upper portion of the stream may be reached by short hikes from various residential roads. Highway 18 crosses Deep Creek near its headwaters.

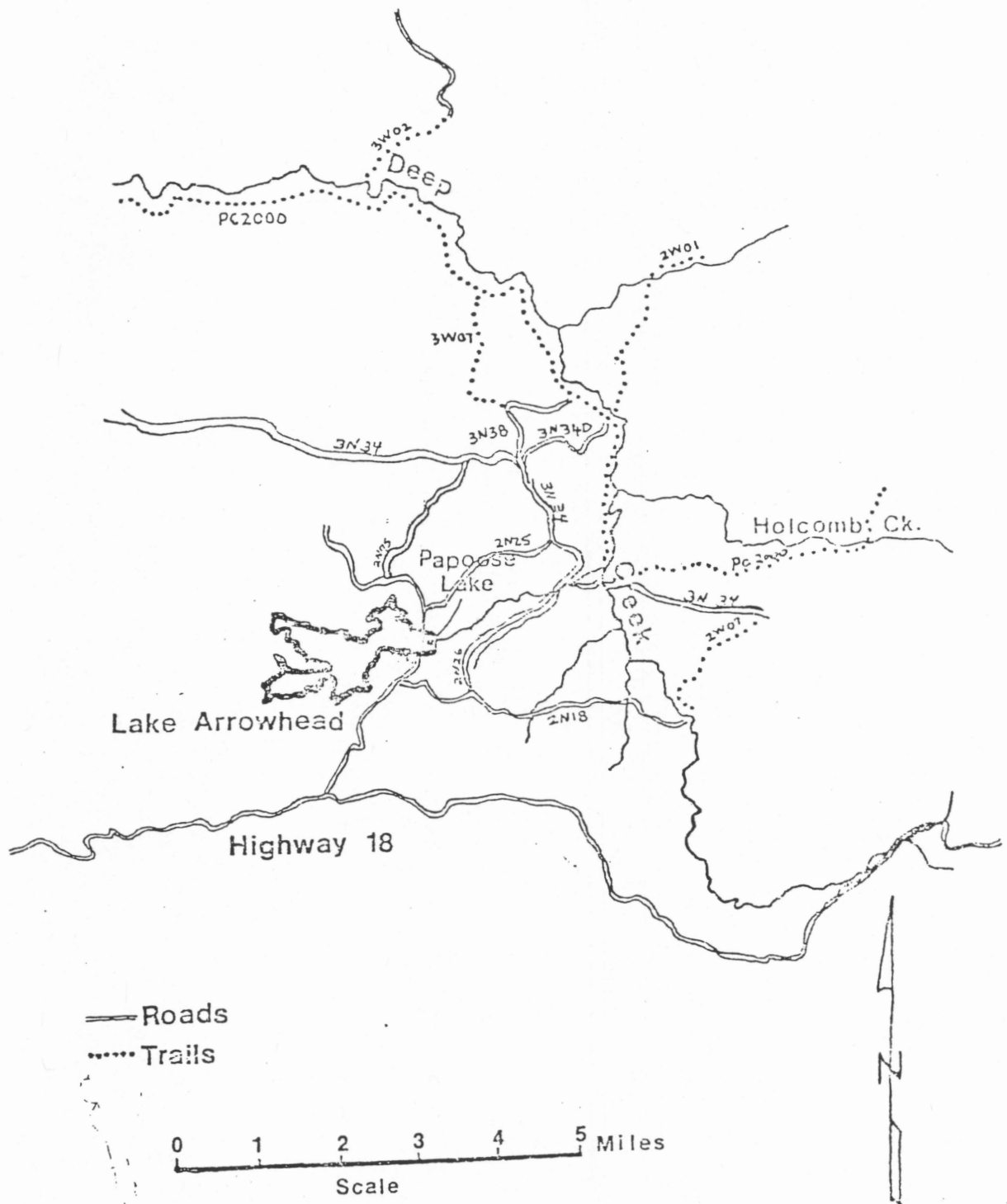


Figure 5. Deep Creek access

Deep Creek below the junction with Little Bear Creek was inventoried by the U.S. Forest Service as Area 05178 in the 1977 Roadless Area Review and Evaluation (Rare II). The area was allocated to the nonwilderness category and activities and development are controlled by existing management plans (USFS 1979).

Land Ownership

Deep Creek lies wholly within the boundary of the San Bernardino National Forest. Portions of its watershed and upper stream reach near Arrowbear, however, are in private ownership (Figure 6).

Description of the Fishery

Rainbow trout (Salmo gairdnerii) and brown trout (Salmo trutta) are the primary gamefish throughout Deep Creek. Rainbow trout are much more abundant. Although ratios fluctuated significantly, during collection efforts at Devil's Hole between 1976 and 1982, rainbow trout outnumbered brown trout about 8 to 1.

While it is not known how long ago trout were introduced into Deep Creek, Department records between 1940 and 1973 show rainbow trout stocking occurred at least as early as 1940. Small numbers of brown trout fingerlings were stocked in 1956 and 1970.

From 1950 to 1973, Deep Creek was managed as a catchable trout stream and stocked with an average of 15,000 rainbow trout annually. With the advent of the wild trout program, it was recognized that Deep Creek could sustain a satisfactory fishery without stocking. To help assure that abundant populations of wild trout would be maintained, special angling regulations covering the stream from its headwaters in Little Green Valley down to the confluence of Coxey Creek were imposed in 1974. These regulations reduced the seasonally variable daily bag limit of 5 or 10 trout, to a year round limit of 3; required that fish under 6 inches total length be released; and restricted angling to artificial flies only. In 1982 the gear restriction was modified to include artificial lures with single barbless hooks. Bait angling is prohibited to help assure maximum survival of angler released fish.

As part of the management program for Deep Creek, two fish population monitoring stations were established in Deep Creek. The lower station is at Devil's Hole and the upper station is near the crossing of Road 3N34 (T6 Crossing). Trout population estimations were made at both locations in 1981 and 1982. In 1981, the population estimation at Devil's Hole was 8,500 rainbow trout and 200 brown trout per mile. At T6 Crossing it was 7,000 rainbow trout per mile. No brown trout have been collected at T6 Crossing. In 1982 it was estimated there were 3,000 rainbow and 1,000 brown trout per mile of stream at Devil's Hole and 6,250 rainbow trout per mile of stream at T6 Crossing.

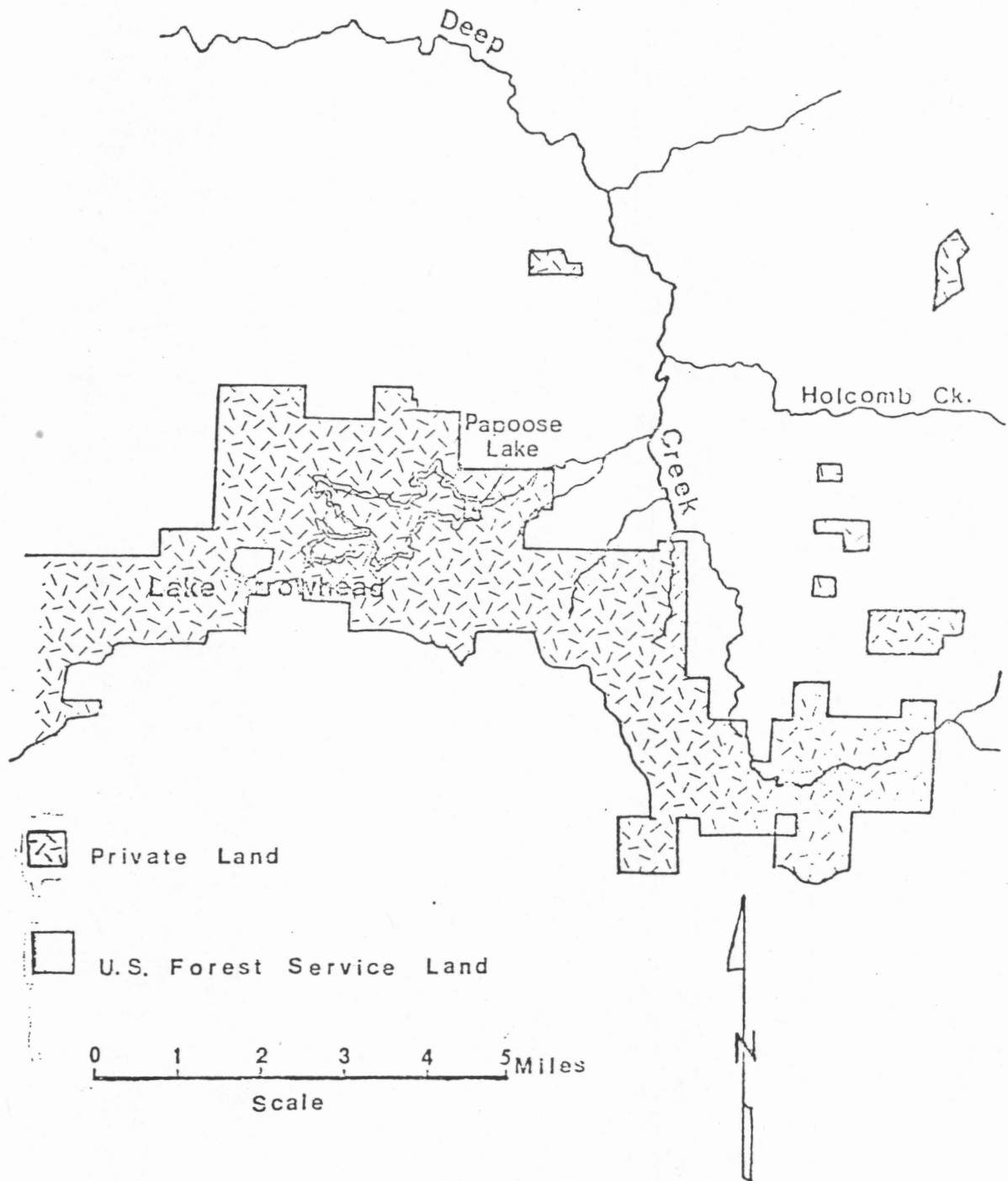


Figure 6. Private lands along Deep Creek

Although more numerous than brown trout, rainbow trout, on the average, are usually smaller than brown trout (Figure 7). While endeavoring to tag fish over 6 inches during a tagging study in 1976 and 1979, the largest rainbow trout caught had a fork length of 10.5 inches and the average size tagged was 7.2 inches. On the other hand, the largest brown trout caught was 19.1 inches and the average size tagged was 9.7 inches.

Scales from 24 rainbow trout captured at Devil's Hole in 1981, and 50 rainbow trout captured at Devil's Hole and T6 Crossing in 1982 were examined for age determination. Of these fish, 40% were age I, 53% were age II, and 7% were age III.

Back calculations indicate the average fork length of these rainbow trout at age I was 3.0 inches with a range of 1.8 to 4.5 inches. At age II their average length was 5.7 inches with a range of 3.0 to 7.8 inches. They averaged 7.2 inches in length at age III with a range of 7.0 to 8.0 inches. No fish in the sample were older than age III.

To obtain information on angler use and harvest, Department biologists placed \$5 reward tags on 133 rainbow and 28 brown trout in the Devil's Hole area of Deep Creek in May 1976. During June and August 1979, an additional 135 rainbow and 21 brown trout were tagged with \$5 reward tags in this area. A questionnaire (Appendix I) was distributed to all persons returning tags, soliciting comments about the fishery and requesting information about the angler. Thirty-six tags (11%) were returned. Anglers were generally satisfied with their fishing experience, although a number were concerned with poaching. Based on the survey, anglers preferred to catch and release rather than harvest the trout landed. For each trout placed in the creel, anglers reported an average of 9.5 trout. Thirty-eight percent of the reporting anglers released all fish caught while 35% kept a limit of three fish.

In the downstream warmer portions of Deep Creek, bluegill (Lepomis macrochirus) and brown bullhead (Ictalurus nebulosus) have been found although they are not abundant.

Arroyo chubs (Gila orcutti) are the only nongame fish found in Deep Creek in recent years. In the lower portion of the stream they are more abundant than trout, but as elevations increase they become fewer. At Devil's Hole they are occasionally found, but none have been caught at T6 Crossing.

Historically Mohave chubs (Gila bicolor mohavensis) inhabited the lower-most sections of Deep Creek and were found as late as 1940 (Hubbs and Miller 1942). They are now believed extinct in the streams of the Mojave River system due to hybridization with arroyo chubs.

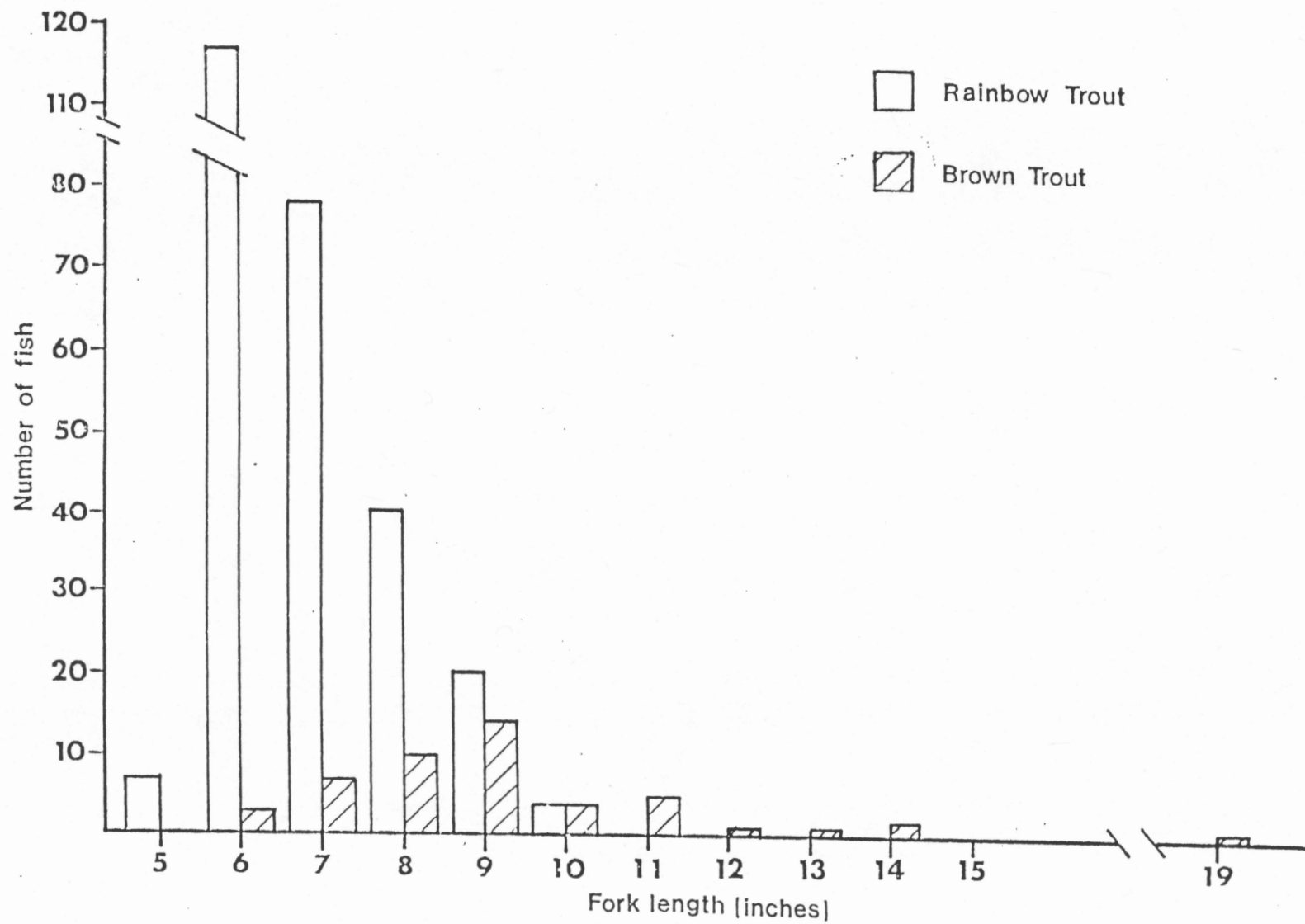


Figure 7. Lengths of Deep Creek trout tagged in 1976 and 1979

Forest Service Timber Management Policy

Due primarily to the proximity of major urban areas, the National Forests in southern California are managed primarily to protect and enhance recreational, watershed, wildlife and scenic resources. The principle goals of the Forest Service's Timber Management Plan for San Bernardino National Forest are to:

1. Maintain attractive forests for recreational use and enjoyment.
2. Provide protection from excessive insect or disease loss.
3. Provide favorable conditions for maintenance of water yield and quality.
4. Reduce the potential for loss of forested area due to uncontrolled fires.
5. Maintain or enhance wildlife and fisheries habitat, and provide necessary protection for areas designated as critical habitat for threatened and endangered species.
6. Utilize trees removed from the forest - as a result of implementing stand treatments to achieve the preceeding goals - for fuelwood, posts, poles, sawlogs, or other useful forest products.
7. Provide educational and interpretive services which foster public understanding of natural processes and management of forest ecosystems (U.S. Forest Service 1978).

The timber management policy is, therefore, to maintain a healthy, vigorous, naturally appearing forest which will support the goals of the Plan. Removal of trees is directed toward protection and maintenance of an attractive, healthy forest, rather than lumber production as is the case in many forests.

ENVIRONMENTAL PROBLEMS

Sedimentation

Sedimentation has been a problem in Deep Creek for many years. Major sources of sediment have been the Heaps Peak refuge disposal site, developed ski areas, and the construction site of the new Lake Arrowhead dam (Papoose Lake). In addition, some sediments originate on the dirt roads and trails in the watershed and where several roads ford streams.

On 23 January 1975, the California Regional Water Quality Control Board for the Lahontan Region adopted waste discharge requirements for the Lake Arrowhead Dam project. Board requirements included a maximum turbidity limit

of 20 Jackson Turbidity Units and a maximum limit of 80 mg/l of suspended sediments on the discharge from the construction site down Little Bear Creek. These limits were, however, exceeded many times.

The Regional Water Quality Control Board has pursued enforcement activities against San Bernardino County for violations of waste discharge requirements at both the Lake Arrowhead Dam project and the Heaps Peak disposal site. As a result, during 1979 and 1980, the County of San Bernardino spent \$300,000 at the site of the New Lake Arrowhead Dam and \$600,000 at Heaps Peak to revegetate denuded and eroded areas. The Board feels this will substantially improve the quality of runoff water leaving these locations and it plans to monitor the situation to evaluate the effectiveness of the restoration efforts.

A sand and gravel operation on upper Holcomb Creek has potential for causing sedimentation problems. The Department and the Forest Service will work jointly on this and any such future operations to minimize impacts on water quality.

Organic Pollution

The increasing amount of human use of the Deep Creek drainage has resulted in serious organic pollution. Official concern about this pollution began in the early 1960's when several cases of hepatitis were reportedly contracted by persons who frequented Deep Creek. There also were sporadic reports of stomach cramps and high fever from people who visited Deep Creek. In July 1976, the death of a young boy occurred after he had played in Deep Creek in the Devil's Hole area. Although an autopsy found that the cause of death was not of water-borne origin, the boy's death prompted the San Bernardino County Department of Environmental Health to begin a water sampling program near the confluence of Deep Creek and Little Bear Creek and in the Devil's Hole area of Deep Creek.

Coliform bacteria counts 70 times the maximum limit recommended for swimming waters were found. The County Health Department was quoted as saying that Deep Creek was comparable to a "stream of open sewage." During 26 to 28 July 1976, the Regional Water Quality Control Board took 47 water samples from various locations along Deep Creek and its tributaries. Coliform bacterial counts were lower, but were still at least 23 times the maximum limit recommended for swimming waters.

The highest fecal coliform counts were found in the Hot Springs area. The lowest occurred in Deep Creek above the confluence of Crab Creek. Although there were some exceptions, the higher coliform counts generally correlated with areas of high human habitation or use. The main pollution sources seemed to be the Hook Creek cabin tract, public use sites within the Warm and Hot Springs areas, cabins along Little Bear Creek, the Lake Arrowhead Boy Scout Camp, possibly Snow Valley during periods of peak occupancy, and campers at such points as Crab Creek and along Deep Creek.

Another disease problem has occurred in Deep Creek, but may not be related to organic pollution. In 1971, a teenaged girl died 5 days after swimming in the Warm Springs area of Deep Creek. Autopsy findings revealed she had contracted amoebic meningoencephalitis (*Naegleria*). This infection of the central nervous system was the first reported case in the western United States and only the 36th known worldwide.

On 29 May 1975, a 9-year-old girl was also stricken with amoebic meningoencephalitis after swimming in the Hot Springs at Deep Creek. As a result of an early diagnosis and quick treatment, the child recovered and the first live sample of the causative amoeba was collected (Appendix II).

Little is known about this rare disease, but it is believed of soil origin and not related to the water pollution problem being generated in the Hot Springs or in the upstream mountain communities. Concentrations of the organism can occur in warm, stationary waters and probably enter the body through nasal passages during swimming and diving activities. A quarantine has been placed on the Warm and Hot Springs area, but is largely unheeded by the public. The San Bernardino County Department of Public Health (pers. comm. 1979) stated that the "potential danger to anglers... is exceedingly low" (Appendix III). This applies to those anglers and other persons who frequent the cool, flowing stream water and who avoid extensive water contact, particularly swimming and diving.

The Regional Water Quality Control Board for the Lahontan Region identified both water-contact and non-water-contact recreation as well as freshwater habitat as beneficial uses for Deep Creek. The Board's goals are to upgrade and maintain the water quality so these uses can safely occur. To that end, they have worked with the County to abate waste discharge in the San Bernardino Mountains. Specifically, the discharge of waste to surface water in the Mojave Hydrologic Unit (which includes all tributaries to the Mojave River) above elevation 3,200 ft. is prohibited. Also, the discharge of all waste in the Deep Creek watershed above elevation 3,200 ft. is prohibited. Exemptions to these prohibitions may be granted whenever the Regional Board finds that the discharge of wastes will not individually or collectively, directly or indirectly, adversely affect water quality.

Beaver

Beaver have become established in Deep Creek and several of its tributaries as well as various other local waters such as Lake Arrowhead. The population in Deep Creek apparently fluctuates greatly in size. It expands during a series of dry or near-normal years, but one or more wet years may have a devastating effect on the population.

In early 1978, 16 beaver dams were noted in approximately 1-1/2 miles of stream near the confluence of Holcomb Creek. Many dams also were found in

other sections of the stream. The water impounded by these dams flooded riffles and allowed sediment to cover trout spawning and food production areas. Increased aquatic habitat produced by ponding was considered less important to trout production than the lost spawning and food production habitat. Anglers normally able to move up and down the canyon along the edges of the stream found it difficult to move past some ponded areas.

The winter of 1977-78 was very wet and spring rains washed out virtually all of the dams and apparently most of the beaver. The population has been held in check by the series of wet winters in the early 1980's.

Although the beaver population seems to be naturally controlled by periodic high streamflow, a prolonged series of dry years may allow development of a large population that could produce extensive changes in stream and bank habitat due to ponding. Riparian vegetation also could be extensively damaged by large numbers of beavers. The Department and the Forest Service should jointly monitor the beaver population in Deep Creek and seek a feasible solution to the problem when such is considered necessary.

Mining

Since the turn of the century there have been various types of mining claims made and abandoned in the Deep Creek area. Forest Service records indicate that, at the present time, there are no active claims in the vicinity except for a sand and gravel operation on Holcomb Creek (see Sedimentation section).

The Department of Fish and Game has closed the entire length of Deep Creek and its tributaries to suction and vacuum dredging to prevent siltation and degradation of trout habitat.

Recreation

There is a wide variety of recreational activities occurring in the Deep Creek drainage. They range from fishing and hunting to swimming and hiking. Most of these uses have at least the potential for contributing to the organic pollution problem in Deep Creek. The current Forest Service restriction on overnight camping along Deep Creek should be continued until at least such time as the organic pollution of the creek has abated.

Present road access to Deep Creek seems adequate and should not be significantly altered.

Recreation in the Deep Creek drainage should be directed toward dispersed use. Existing regulations aimed at preventing concentrations of recreationalists should be enforced. Trails should be encouraged that would tend to direct recreationalists away from points of concentration.

Off-road-vehicle use is having a significant deleterious effect on riparian growth and stream habitat in portions of the Deep Creek drainage. In addition, operation of these vehicles in streambeds intensifies the already

serious problem of sedimentation in Deep Creek. Vigorous enforcement of Forest Service regulations regarding the misuse of off-road-vehicles is essential to prevent habitat degradation.

Grazing

In the past, the only grazing allotment in the Deep Creek drainage was in the vicinity of lower Willow Creek. Past grazing practices resulted in isolated damage to riparian growths. Recently this allotment was expanded to include an area directly to the east on the east side of Deep Creek. Grazing will rotate between these two areas and a nearby BLM allotment adjacent to the forest boundary. This will allow a great deal of flexibility in grazing practices and should prevent damage to the environment from overgrazing.

MANAGEMENT PROGRAM

Management Goals

The goals of wild trout management for Deep Creek are:

1. To protect, maintain, and enhance where possible the aquatic environment of Deep Creek and its tributaries.
2. To provide self-sustaining populations of wild trout which offer the opportunity to: (a) catch trout 8 inches and larger, and (b) catch trout at rates of 2 fish or better per hour.
3. To maintain an attractive streamside environment featuring more remote, secluded angling.

Management Direction

1. Continue to evaluate the wild trout fishery of Deep Creek by collecting baseline data and establishing monitoring programs to determine population trends and angling success.
2. Preserve the natural integrity of Deep Creek and maintain or improve trout habitat quality.
3. Work with the Regional Water Quality Control Board to minimize the impact of sediment from existing and future developments in the area and meet other state water quality objectives applicable to the Deep Creek drainage.
4. Oppose water developments which would significantly alter the flows needed to maintain self-sustaining, abundant wild trout populations in Deep Creek.

5. Recommend to the California Fish and Game Commission that Deep Creek be managed for wild trout angling pursuant to the Trout and Steelhead Conservation and Planning Act of 1979 (Fish and Game Code Sections 1725-1728).
6. Recommend that Deep Creek be designated a Wild Trout Stream by the California Fish and Game Commission.
7. Work with San Bernardino County concerning developments on private lands to insure protection of streams and streamside habitat within the Deep Creek Drainage.

Fishery Management

The program of collecting baseline trout population data at the Devil's Hole and T 6 Crossing sampling stations will be completed. Following this, trends in abundance, size and age structure of the trout populations will be monitored by electroshocking sampling surveys at approximately three-year intervals. Angling quality and parameters of trout harvest will be examined by tagging trout with reward tags at 5-year intervals. The 1976 and 1979 tagging studies will serve as baseline information.

To monitor angler use and success, a program using volunteer questionnaires available at two or three locations along the stream will be proposed. The use of such a program is conditioned upon Forest Service participation.

The combination of trout population, tagging, and angler questionnaire surveys will provide a basis for determining if the fisheries management goal (as stated on page 17) is being achieved. If this goal is not being met, consideration will be given to changing angling regulations.

Instream Habitat

Baseline information which accurately describes basic instream habitat parameters (temperature, stream flow, and sedimentation) is not available for the primary wild trout area (Green Valley to Willow Creek). Acquiring such information would help in evaluating the potential impact of future proposed developments in the drainage. The goal of the field collection phase of a planned program will be to establish baseline data for critical periods (e.g. water temperatures during middle to late summer) and/or during dry, average and wet years. Inasmuch as is feasible, an effort will be made to correlate data with established collecting stations (e.g. the U.S. Geological Survey flow gauge near the lower end of Deep Creek).

Wild Trout Angling Regulations

California Senate Bill 192, "The Trout and Steelhead Conservation and Planning Act of 1979" (now Fish and Game Code Sections 1725-1728) mandates that the Department annually recommend for Fish and Game Commission consideration at

least 25 miles of stream and at least one lake that the Department deems suitable for catch-and-release trout management. As specified in SB 192, catch-and-release regulations are defined as daily bag limits of zero, one or two trout with or without accompanying size restrictions.

The wild trout management goals for Deep Creek coincide with the purpose and intent of Senate Bill 192. In addition to being a candidate water for Commission designation as a Wild Trout Stream, Deep Creek also is a candidate for catch-and-release trout management pursuant to SB 192.

The Department will propose to the Fish and Game Commission that the angling regulations for Deep Creek be modified and the stream be designated for catch-and-release trout management. Existing regulations provide that Deep Creek upstream from the confluence of Coxey Creek is open with a bag limit of three trout with a minimum size of six inches total length and only artificial lures with a single barblless hook may be used. The proposed change would (1) reduce the bag limit from three trout to two trout, and (2) extend the reach of stream under wild trout management from Coxey Creek downstream to the confluence of Willow Creek. This would place 16 miles of Deep Creek under wild trout management regulations. Deep Creek below the confluence of Willow Creek does not support trout populations and habitats of the quality commensurate with the standards of SB 192 and the Wild Trout Program.

Wild Trout Stream Designation

Deep Creek is considered to be an excellent wild trout fishery resource which has exceptional value due to its proximity to the state's largest metropolitan area. Studies have shown that trout production and the angling opportunity offered by the trout populations in its semi-remote setting are comparable to other officially designated backcountry streams. Wild trout designation will encourage recognition of the value of this resource as a part of California's program to maintain and manage the best of the state's remaining wild trout waters. The proposed designation has been coordinated with the Forest Service and is now ready for Commission consideration. The Department will propose that the 16 miles of Deep Creek managed under wild trout angling regulations be designated by the Fish and Game Commission as a Wild Trout Stream.

PROGRAM IMPLEMENTATION SCHEDULE

<u>Task</u>	<u>Department Section or Agency Responsible</u>	<u>Implementation Date</u>
A. Fishery Management		
1. Devil's Hole and T-6 road crossing population transect surveys:		
a. Completing baseline surveys:	Region 5	Summer 1985
b. Periodic monitoring:	Region 5	1988, 1991, etc.
2. Tagging program:		
a. Periodic monitoring:	Region 5	1984, 1989, etc.
3. Angler questionnaires:	Region 5	1984, 1989, etc.
B. Habitat Data Collections		
1. Jointly develop plans to study riparian habitats, water quality, water temperatures, stream flows and sedimentation:	Region 5/USFS	As manpower and budgets permit
C. "Catch-and-Release" Angling Regulations (SB 192)		
1. Coordinate with other interested parties:	Region 5-IFB	August-September 1983
2. Recommend to Commission:	Region 5-IFB	October 1983
D. Wild Trout Stream Designation		
1. Coordinate with other interested parties:	Region 5-IFB	1983-1984
2. Recommend to Commission:	Region 5-IFB	1984
E. Land Use Planning		
1. Continue to jointly implement the management program to meet the goals of the plan:	Region 5/USFS	Continuing

PROGRAM IMPLEMENTATION SCHEDULE
(CONTINUED)

<u>Task</u>	<u>Department Section or Agency Responsible</u>	<u>Implementation Date</u>
2. Coordinate with Regional Water Quality Control Board activities which will protect water quality of Deep Creek:	Region 5	Continuing

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APPENDIX I
1979 DEEP CREEK TROUT TAGGING STUDY

1. Did you keep the tagged fish? Yes _____ No _____
2. If you did keep it, would you have kept it if it had not been tagged?
Yes _____ No _____
3. Was your fishing trip to Deep Creek motivated by knowledge that
reward-tagged fish were present? Yes _____ No _____
4. Approximately how many times a year do you fish Deep Creek?
5. What areas of Deep Creek do you usually fish? _____

6. What is the average number of fishermen who accompany you on your fishing
trips to Deep Creek? _____
7. Approximately how many other fishermen do you see fishing on your trips to
Deep Creek? _____
8. Approximately how many hours do you fish when you go to Deep Creek? _____
9. On the average approximately how many fish do you catch when you go to
Deep Creek? _____
10. On the average approximately how many fish do you keep on your trips to
Deep Creek? _____
11. If you had to release all of the fish you caught, would you continue to
fish at Deep Creek? Yes _____ No _____
12. Are you satisfied with the quality of fishing in the areas of Deep Creek
where you have fished? Yes _____ No _____
13. Do you belong to a fly fishing club? Yes _____ No _____
14. What are the primary reasons that you fish at Deep Creek? (Reply on back
of this form.)
15. Do you have any comments or suggested fishing regulation changes for Deep
Creek? (Reply on back of this form.)

C10—The Sacramento Union, Sunday, December 31, 1973

Update

Deep Creek

One girl survives an exotic disease

LOS ANGELES (AP) — A few new warning signs are posted at Deep Creek Hot Springs, but hikers still stop for swims. Last summer, 10-year-old Mary Pack took just such a dip — and almost died of a rare disease so deadly that only three people in the world are now known to have survived.

A powerful microorganism in the water found its way into Mary's body last June as she swam in the tepid water. A few minutes later, Mary was unconscious.

"This little girl was very fortunate," said Dr. James Seidel of Harbor General Hospital in Los Angeles. "Usually, within three days you're dead."

Mary was rushed to nearby San Bernardino County Hospital where a pathologist found a strange speck in the girl's spinal fluid. The startled physician diagnosed it as amoebic meningo encephalitis — a disease that has been reported only 100 times in history. At that time, all but two of those cases had proved fatal.

The doctor ordered the child airlifted 80 miles to Harbor General, where a team of specialists won the battle to save her. Today, Mary's mother finds it hard to believe her daughter was so close to death.

"It's like she's never been sick," said Margaret Pack, 29. "She looks very healthy. She's gained her weight back; she got pretty skinny there for awhile. Even Dr. Seidel can't believe how she's come out of it with no problem."

Mary stayed in the hospital for one month. She spent the rest of the summer recuperating, and in September, she returned to school. Pack says



Mary Pack

Mary is now doing better in school than ever before.

But Pack is still concerned — because nothing has been done about the toxic swimming hole.

"The people don't seem to pay attention to us," said Richard Metford, the Forest Service's area manager. He says hikers ignore the warning signs he's posted and swim anyway, despite the fact the lethal organism may still be lurking beneath the surface.

Pack thinks the rangers should do more than post signs: "They should either get it closed down or cleaned up."

DEPARTMENT OF PUBLIC HEALTH

1 North Mt. View Avenue • San Bernardino, CA 92415 • (714) 383-2941

LOUISE MATHONEY, M.D., D.P.H.
Director of Public Health

January 18, 1979

Department of Fish and Game
987 Jedsmith Drive
Sacramento, California

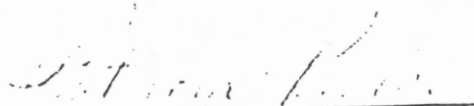
Dear Mr. John M. Deinstadt,

I appreciate your concern over Deep Creek and the potential dangers of amoebic meningoencephalitis to anglers and employees of the Department of Fish and Game. In answer to your questions:

- 1) The trails leading to Deep Creek have been posted as well as the creek itself. Unfortunately these signs are often vandalized and are replaced periodically. The United States Forest Service is responsible for posting warning signs and has been since 1971.
- 2) Amoebic meningoencephalitis is found all over the world but occurs in higher concentrations in warm, fairly stationary water such as the hot springs pools. The organism probably enters the body through the upper nose. Wading or sitting in the hot springs is not as dangerous as swimming and diving which forces water into the nasal passages. This particular amoebae seems to need warm water (82.5-98.6 F) to flourish. Not very much is known about this disease, however I would say an angler is not apt to fish in a warm, stationary pool but rather in a cool moving body of water. Particularly if they are after trout. The potential danger to anglers or Fish and Game employees is exceedingly low. Both cases of amoebic meningoencephalitis were from swimmers in the hot springs and not from other areas of the creek.

If you have further questions please feel free to call me at (714) 383-2357 or write again.

Very sincerely,


Ms. Patricia Bruce, M.S.
Communicable Disease Investigator

PB/pab

EARL GOODWIN

ROBERT C. THOMAS