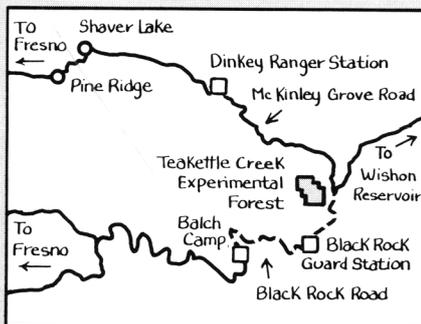
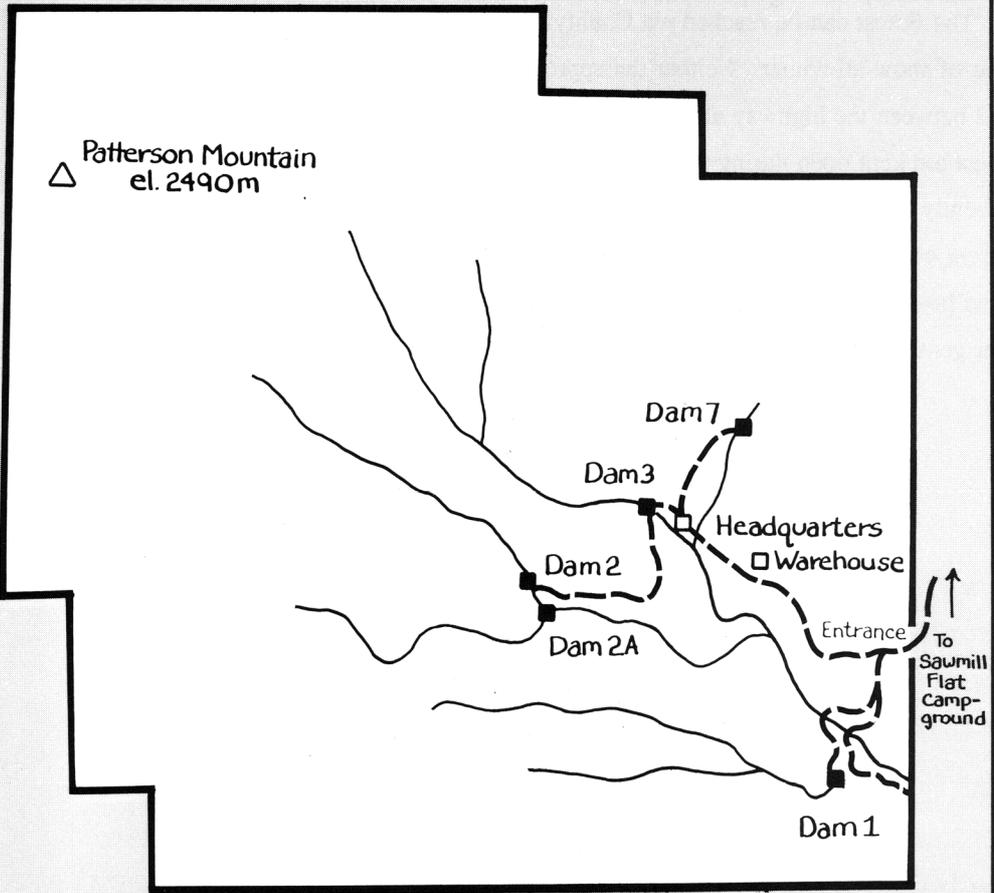
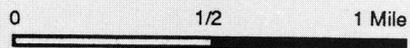


Teakettle Creek Experimental Forest



LEGEND

- Water Courses
- - - Gravel or Dirt Roads
- △ Mountain or Peak



TEAKETTLE CREEK

Experimental Forest

Three 200-hectare watersheds were first selected for study in 1934. Streamgauging stations were constructed on five subdrainages in the mid 1930's, and data on snow accumulation and melt, and precipitation and streamflow were collected. In 1942 the work was halted due to World War II. Studies were resumed in 1957 and the approximately 1300-hectare Experimental Forest was formally dedicated in 1958. The original objective was to determine methods of managing watersheds in representative fir and fir-pine types for the maximum beneficial yield of water consistent with control of floods and erosion.

An ecological survey of a portion of the Experimental Forest was written in 1975. Major forest species listed in that study include red fir (*Abies magnifica* A. Murr.), white fir (*A. concolor* var. *lowiana* [Gord.] Lemm.), sugar pine (*Pinus lambertiana* Dougl.), Jeffrey pine (*P. jeffreyi* Grev. & Balf.), western white pine (*P. monticola* Dougl.), incense-cedar (*Libocedrus decurrens* Torr.), mountain hemlock (*Tsuga mertensiana* [Bong.] Carr.), and western juniper (*Juniperus occidentalis* Hook.). Lodgepole pine (*P. contorta* Dougl. ex Laud.) grows on the higher portions of the Experimental Forest. Subordinate species include *Arctostaphylos nevadensis* A. Gray, *Arctostaphylos patula* Greene, *Ceanothus cordulatus* Kellogg, *Chrysolepis sempervirens* [Kellogg] W. Dud., *Prunus emarginata* [Dougl. ex Hook.] Walp., and *Quercus kelloggii* Newb. (Griffin 1975).

Atmospheric deposition has not been measured onsite. Hydrogen ion loading has been monitored since 1980 at Giant Forest in Sequoia National Park, 55 kilometers south southwest. At Giant Forest hydrogen loading in 1982 was 10 milligrams per square meter with a 4-year mean (1980-1984) of 4.5 milligrams per square meter per year. The 1982 sulfate ion loading at Giant Forest was 3.9 grams per square meter with the 4-year mean (1980-1984) 3.5 grams per square meter per year.

Harvest disturbance is minimal. A minor "sanitation" cut in 1979 along roads to the gauging stations is the only known timber removal.

Mapped geologic units are primarily Triassic metamorphics, mainly quartzite, with some Miocene olivine basalt on top of the quartzite. Only the lower elevation southeastern corner of the Forest is granodiorite. The entire Experimental Forest is withdrawn from mineral entry.

CLIMATE

The climate is typically Mediterranean, with moist, relatively mild winters and dry, warm summers. Annual precipitation is about 1120 millimeters at 2100 meters elevation, with most falling as snow between November and May. Mean, maximum, and minimum July air temperatures are 17°C, 30°C, and 3°C. Winter records are unavailable.

SOILS

Soils are generally Xerumbrepts and Xeropsamments typical of the southwestern slope of the Sierra Nevada. Mapped series, with percentage of Forest area in parentheses, include Cagwin (15 pct), Cannell (15 pct), Sirretta (10 pct), Ledford (15 pct), Toem (10 pct), Umpa (5 pct), Waca (5 pct), Windy (5 pct), Shaver/Ledford (5 pct), and miscellaneous (15 pct). The cation exchange capacity, determined by the sum of cations method, is 25-30 milliequivalents per 100 grams.

MAIN COMMUNITIES

Red Fir (SAF 207), Ponderosa Pine-Sugar Pine-Fir (SAF 243), and wet and dry meadows are the main communities (Eyre 1980).

DATA BASES

Climatic Data

Data available for 1977 to the present are air temperature, relative humidity,

and precipitation (continuous strip chart and daily maximum/minimum air temperatures) for nonwinter months. Coverage is sporadic during earlier years.

Hydrologic Data

Stream discharge records are continuous for five subbasins with areas and 15-year mean annual discharges as follows:

Area	Discharge
<i>km²</i>	<i>m³/yr</i>
¹ 0.3	1.1 x 10 ⁵
² 2.2	1.5 x 10 ⁶
² 2.2	1.3 x 10 ⁶
² 0.7	4.6 x 10 ⁵
² 2.0	1.4 x 10 ⁶

¹October 1957 to September 1963.

²October 1957 to September 1969, and
May 1977 to present.

Continuous strip chart records are available for stream temperature at three sites during snow-free months between 1980 and 1984. Data have been reduced to daily maximum/minimum values and temperatures at 0000, 0600, 1200, and 1800 hours.

Soil Moisture Data

Twelve sites were monitored by neutron probe a minimum of three times during snow-free months between 1977 and 1985.

EXAMPLES OF RESEARCH

- Snow hydrology
- Monitoring methods for avian populations
- Forest soil moisture and soil temperature regimes.

FACILITIES

The two primary buildings on the Forest are a warehouse/garage and main cabin. The cabin sleeps five, and the warehouse has limited maintenance equipment. Laboratory space is not available. A field office of the Pacific Southwest Research Station, with office and laboratory facilities, is located in Fresno, about 1 1/2 hours driving time away. Lodging is available at Dinkey Creek, approximately 40 minutes driving time distant.

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LOCATION

Teakettle Creek Experimental Forest is located in the north drainage of Kings River about 80 kilometers east of Fresno, California, on the Sierra National Forest and is 12 kilometers southwest of Wishon Reservoir (see map). Latitude is 37°58' N., and longitude is 119°2'25" W. Elevation ranges from 1980 to 2590 meters.

Main access is along approximately 8 kilometers of graded road from the junction with a paved road at Tule Meadow.

