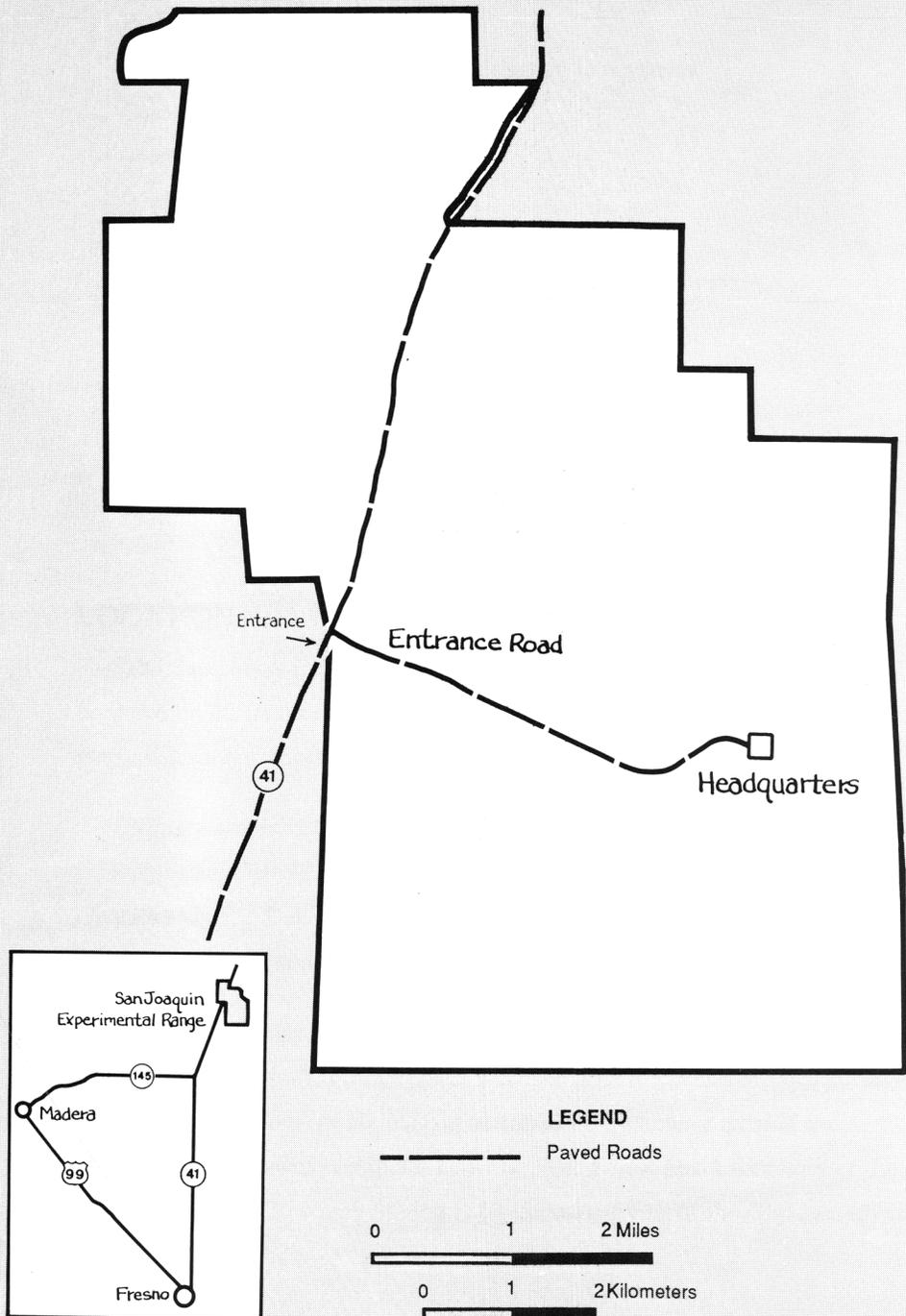


San Joaquin Experimental Range



SAN JOAQUIN Experimental Range

The San Joaquin Experimental Range (SJER) has been in existence since 1934. It was purchased by the Forest Service and is managed by California State University, Fresno, for research and educational purposes under a long-term agreement with the Pacific Southwest Research Station. SJER was the Annual Grassland Biome site for the International Biological Program during the 1970's and is currently a Man and the Biosphere Reserve.

SJER consists of about 1820 hectares (including a 33-ha livestock enclosure built in 1934), cross-fenced into 34 range units varying in size from 7 to 295 hectares (*fig. 10*).

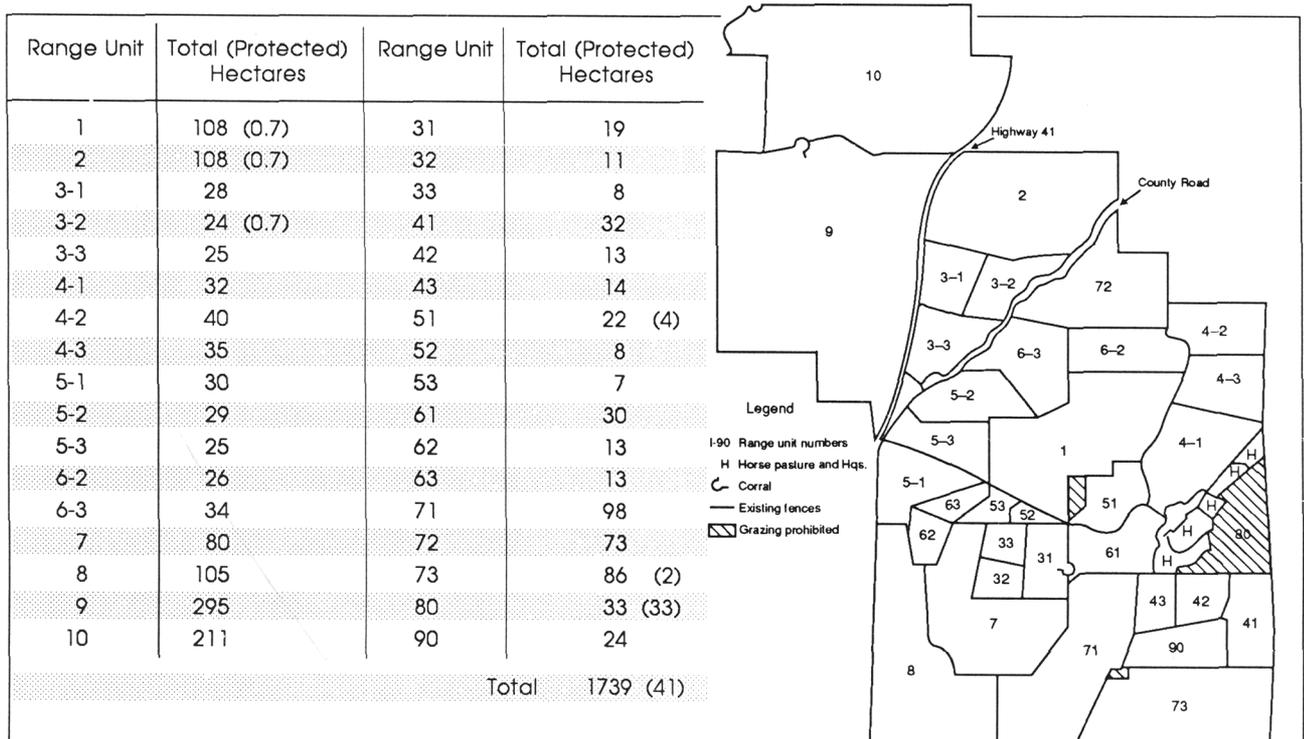


Figure 10—Numbered range units on the San Joaquin Experimental Range. Area of range units is listed at left. Hectares protected from livestock are in parentheses.

Vegetation on SJER includes annual grasslands and blue oak-digger pine woodlands (fig. 11). Annual grasslands consist largely of introduced grass species, such as wild oat (*Avena fatua*), soft chess (*Bromus mollis*), riggut brome (*Bromus diandrus*), red brome (*Bromus rubens*), wild barley (*Hordeum* spp.), and foxtail fescue (*Vulpia megalura*). Common forbs include broadleaf filaree (*Erodium botrys*), redstem filaree (*Erodium cicutarium*), true clovers (*Trifolium* spp.), popcorn flower (*Plagiobothrys nothofulvus*), turkey mullein (*Eremocarpus setigerus*), and many others. In the blue oak woodland, the most common trees are blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizenii*), digger pine (*Pinus sabiniana*), and California buckeye (*Aesculus californica*). Wedgeleaf ceanothus (*Ceanothus cuneatus*) shrubs are also common.

Cattle on SJER consist of a breeding cow herd (about 275 cows with or without calves), owned by California State University, Fresno. Except for grazing systems experiments, grazing is continuous year-long (fig. 12).



Figure 11—Much of the San Joaquin Experimental Range consists of blue oak savanna.

CLIMATE

The climate is typically Mediterranean, with moist, mild winters and dry, hot summers. Annual precipitation ranges from 254 to 813 millimeters, with a mean of 483 millimeters and most falling as rain between October and April. Monthly mean air temperatures range from about 6°C in January to about 27°C in July. Monthly minimum temperatures vary from a low of slightly above freezing in January to over 16°C in July. Monthly maximum temperatures range from about 10°C in January to almost 38°C in July.

SOILS

Soils are of granitic origin and most are less than 76 centimeters deep. On upland sites, Ahwahnee Series (Mollic Haplustalfs) soils are common, covering about 96 percent of SJER. These typically have A horizons that are grayish brown to brown, slightly acidic, and low in organic matter content. Visalia Series soils (Cumulic Haploxerolls) are found on alluvial or swale sites, are generally darker, deeper, and more productive than Ahwahnee Series soils.



Figure 12—Grazing by domestic cattle is a major land use at the San Joaquin Experimental Range.

MAIN COMMUNITIES

Blue Oak–Digger Pine (Eyre 1980), California Prairie, and Blue Oak-Digger Pine Forest (Kuchler 1977) are the main communities on the Experimental Range.

DATA BASES

Climatic Data

Daily precipitation and daily temperatures (minimum and maximum) are available since 1934.

Plant Data

Peak forage production is available since 1934. For some years, detailed seasonal production and composition data are also available. A wide variety of producer and consumer data were collected for 3 years (1973-1975) when SJER was the Annual Grassland Biome Site for the U.S. International Biological Program.

Livestock Data

Figures on stocking rates and weight gains are available for various years.

Wildlife Data

Biological data for various years are available for western rattlesnakes (*Crotalus viridis*), red-tailed hawks (*Buteo jamaicensis*), California quail (*Callipepla californica*), California ground squirrels (*Spermophilus beecheyi*), avian community structure, and other wildlife aspects.

EXAMPLES OF RESEARCH

- Oak ecology
- Wildlife habitat-relationships
- Bird population trends
- Livestock science.

FACILITIES

A variety of facilities is available (*fig. 13*). Dormitory facilities are limited. Most summertime visitors prefer to obtain food and air-conditioned lodging in Fresno or Madera, both about 40 kilometers away. Shop and limited laboratory facilities are available for routine plant drying, sorting, and weighing. Some restrictions on facilities are imposed by previously scheduled use.

CONTACT ADDRESS

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LOCATION

The San Joaquin Experimental Range is located about 40 kilometers north of Fresno, on Highway 41, in Madera County (see map). Latitude is 37°05' N., and longitude is 119°45' W. Elevation ranges from 210 to 520 meters.



Figure 13—The office building also contains laboratory and conference facilities.