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SOILS AND CONSERVATION

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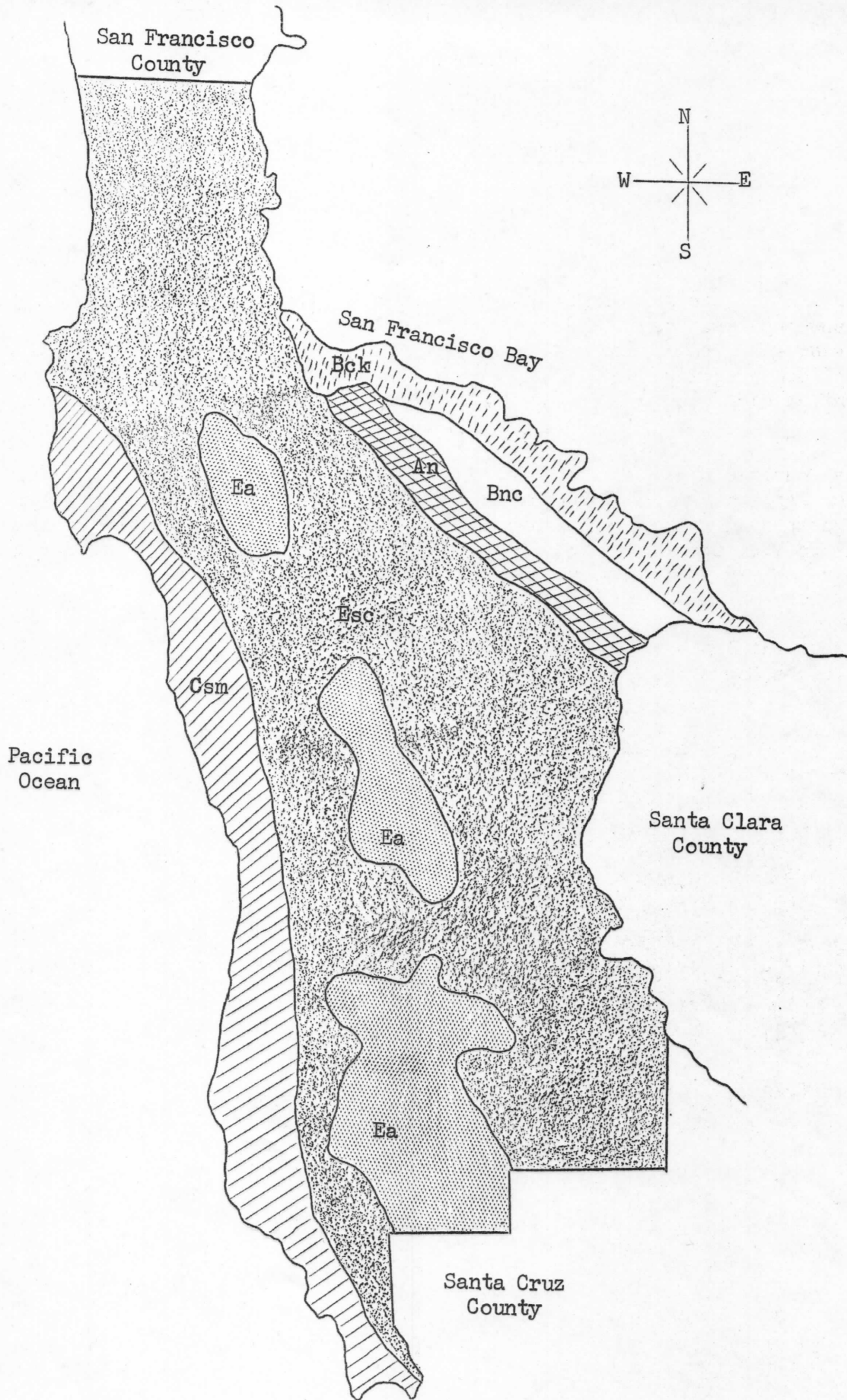
San Mateo County is a conglomerate of geological formations. The San Andreas Mountains which form a physical barrier between east and west are transversed by numerous small streams. This has divided the rural area into several communities with no common marketing or meeting place. It has also added to the great diversity of agriculture in the county.

The recent increase in population and the subdivision of land has created numerous problems of growth, adjustment, and relocation. Urbanization has progressed to a high degree and is rapidly increasing. High demand from nearby markets for specialty crops and exotic flowers has had a big influence on the complexion of agriculture here. We have Chinese growers using century-old methods in producing a great variety of vegetables and highly specialized organizations producing rare flowers such as orchids. In the mountains, in view of the great metropolitan area, the general ranches are seemingly remote and strictly rural.

The program of the Agricultural Extension Service and the Agricultural Experiment Station of the University of California is to assist farmers to improve efficiency of operation and develop better land use practices. In order to achieve these objectives many conservation practices have been developed and recommended by these organizations and then put into practice by farmers.

We, of the Agricultural Extension Service, believe that the soil is a natural resource and as such is a gift of nature. There is an urgent need for a greater understanding on the part of the general public as to what contributions they can make towards conservation of soil.

This report will serve to acquaint the reader with general soil types of San Mateo County. It will also illustrate some of the outstanding conservation practices adopted by San Mateo County farmers in 1953.



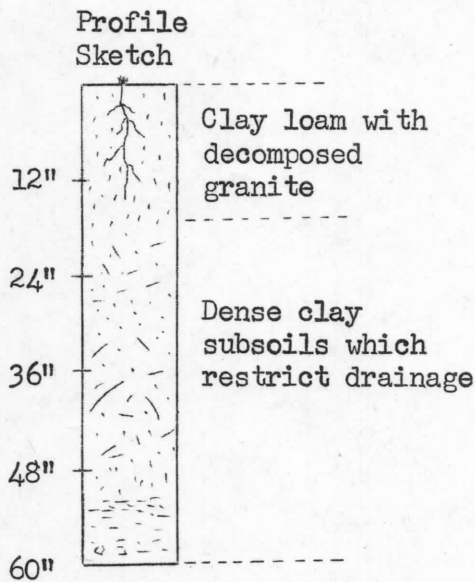
GENERALIZED SOIL MAP OF SAN MATEO COUNTY

CLASSIFICATION OF SAN MATEO COUNTY SOILS

The soils of San Mateo County are divided in a general way into four major topographic divisions. These divisions are Terrace Land, Upland, Valley Land, and Valley Basin Land.

Under each topographic division there are several such classifications or categories. Only the major classifications of the county will be discussed in this text. Additional information on soils may be obtained by consulting with the Farm Advisors of the Agricultural Extension Service, Half Moon Bay. The discussion presented herewith is based on soil classifications by R. Earl Storie and Walter W. Weir, Department of Soils, University of California.

TERRACE LAND

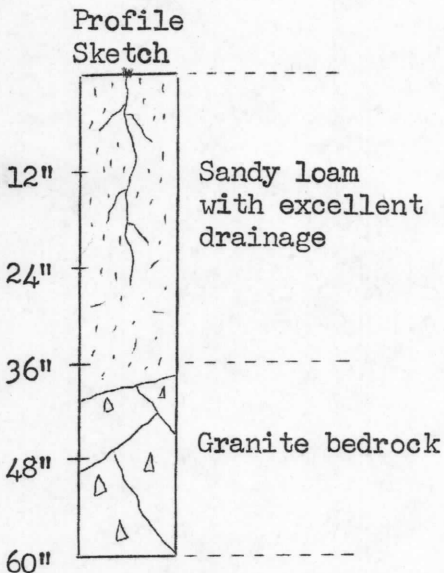


-Soils of terrace land occur in a narrow strip along the coast from Montara through Half Moon Bay and Pescadero to the Santa Cruz County line. Cool, wet winters and dry, temperate summers are characteristic of the prevailing weather conditions. Rainfall varies from 22 to 25 inches per year.

These soils are classed as belonging to the great Prairie group. They have a high value for native pasture and certain specialty vegetable crops such as artichokes and Brussels sprouts. Both nitrogen and phosphate fertilization are needed to maintain productivity.

In general, drainage is a problem on these lands because of the dense clay subsoils which restrict movement of water.

UPLAND

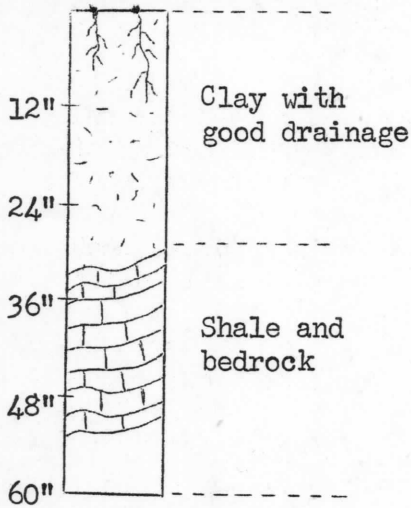


-Soils of this classification are located in the rolling, hilly-to-steep uplands of San Mateo County. Rainfall is generally heavy with an average of about 30 inches per year.

These soils are found along the western slopes of the San Andreas Mountains. Commercial timber operations and recreational areas such as parks, summer camps, etc., are found in these regions.

In the northern part of San Mateo County the soil classification is known as Colma sandy loam. Colma sandy loam is highly productive for vegetable and floricultural crops. From three to six feet of sandy loam is generally found here with granite bedrock at lower depths.

Profile Sketch



Esc

This classification embraces most of the grazing land in the county. It is typically rolling, hilly, and steep. Rainfall is from 25 to 30 inches on the western slopes and from 15 to 20 inches on the eastern slopes of the mountain ranges.

These soils are well adapted to the production of forage grasses, both native and introduced. In some locations they are suitable for the growing of hay, grain, and flax. Best use is for grazing livestock. They rank among the best in the state for that purpose.

VALLEY LAND

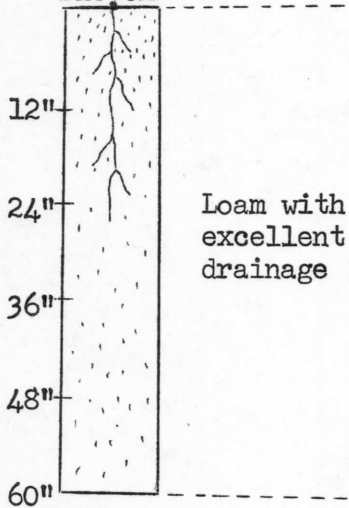
An

The Valley Land soils are derived from flood plains and alluvial deposits. They are located in a strip just below the eastern slope of the mountain ranges and stretch from San Bruno to East Palo Alto. Rainfall varies from about 15 to 20 inches per year.

Soils of this classification represent the most important agricultural group in California. Drainage is excellent and native fertility is high.

Valley lands in San Mateo County are almost entirely urban or suburban. Two large flower producing areas still remain in Redwood City and East Palo Alto. Here are found almost 10 per cent of the nation's chrysanthemum acreage and most of the county's greenhouse industry. The bulk of San Mateo County's floricultural industry is located on these soils.

Profile Sketch



VALLEY BASIN LAND

Bck

Saline and alkali soils are typical of this type. A narrow strip along the eastern edge of San Mateo County immediately adjacent to San Francisco Bay is the principal location.

These lands are typical salt marshes and have only limited agricultural usage. Reclamation of these soils for agriculture would be expensive because of the necessity of providing drainage and leaching out the salts. Some livestock are grazed on the grassland marshes.

Bnc

This soil type is found in the areas immediately bordering Bayshore Highway from San Bruno to Redwood City. Agricultural usage is limited, however, because of imperfect drainage. There is some grazing of livestock and hay production.

CONSERVATION PRACTICES IN 1953

The following is a brief discussion with illustrations of a few outstanding conservation practices developed by the Agricultural Extension Service and adopted by San Mateo County farmers in 1953.

CHEMICAL CONTROL OF BRUSH



About 85,000 acres, or over 50 per cent of the agricultural land in San Mateo County, are covered with brush or are subject to brush encroachment. The principal species is *Baccharis pilularis*, coyote brush.

Chemical eradication of brush - killing it in place without cultivation - is one of the biggest contributions to better land use. After the brush has been killed, volunteer stands of ryegrass, bur clover, filaree, and brome grasses will produce good forage. In heavier brush areas, burning and reseeding after chemicals have been applied results in excellent pastures on land that was virtually worthless from an agricultural standpoint. Many areas are by necessity sprayed by helicopter as shown in the above photograph. However, ground machines give excellent control in places where they can be used. Ranchers are spraying along roadsides and fences to prevent encroachment of brush into their fields.



Forty-two farmers have adopted this practice and over 3,000 acres have been sprayed with chemicals and returned to pasture as shown on the left. Farmers have accepted chemical control of brush and pasture improvement as the best conservation practice in San Mateo County.

DRYLAND AND IRRIGATED PASTURES

Perennial pastures provide the most effective, usable cover on our rolling hill lands. Good pasture not only results in soil conservation and land improvement, but in productive use. An annual rainfall of 20 to 40 inches produces an abundance of forage from a seeded mixture of perennial grasses and legumes.

Erosion is one of the primary deterrent factors in establishing a cover on the steeper areas. Many projects are devoted to getting pastures established and reducing erosion by improved seeding methods and use of nurse crops. Some 5,000 acres have been seeded to dryland permanent pastures with erosion and gullying practically non-existent.

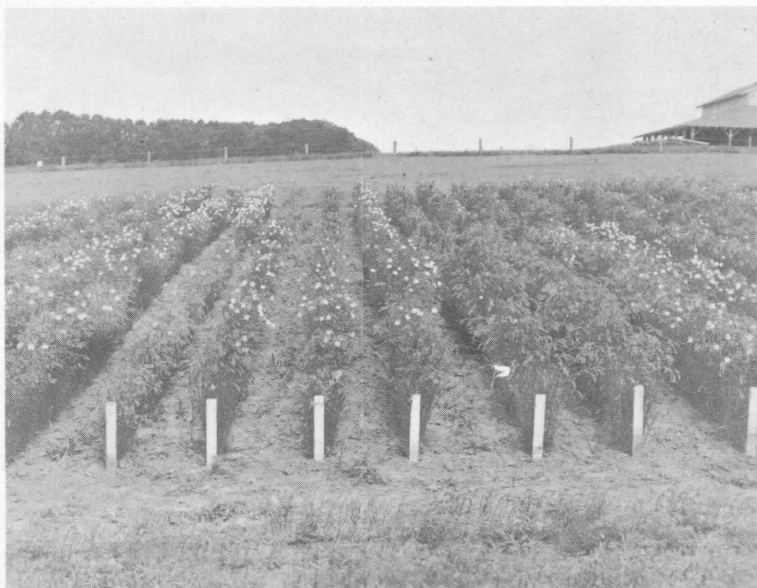
Irrigated pastures are confined for the most part to small, flat areas alongside creeks and streams. Upwards of 1,000 acres are irrigated from streams, storage ponds, and wells. These areas are highly productive and, although the total acreage is not great, when used in conjunction with dryland pastures are extremely valuable. An abundance of green feed is provided during the summer and fall months after the range feed has dried up. The above photograph shows an excellent irrigated pasture near Pedro Valley.



FIELD CROPS

Over 22,000 acres per year are devoted to cereals, flax and hay crops with a value between one and two million dollars annually. Many different varieties of barley, oats, wheat, flax, and vetch are tested each year for yield comparison and disease resistance.

All cereals and flax grown in the county are improved varieties which carry resistance to most of the diseases. These new varieties have been introduced as a result of test plots carried on with San Mateo County farmers by the Agricultural Extension Service and the Department of Agronomy, University of California at Davis.



New methods of weed control, disease resistant varieties, and fertilization practices have contributed to more efficient production and usage of soils. A flax variety trial in Pescadero can be seen at the left.