Westside Dust Test Plots

studies designed to develop plants and grazing systems for effective dust control under way in three counties

Lloyd N. Brown

The dust—Of the dust storms in the southern San Joaquin Valley the past several years—comes from two sources: *1*, the Westside Plains and *2*, from farm leveling operations and subdivision development.

The dust from farms and subdivisions varies greatly with the weather and the amount of land being developed. As soon as irrigation starts this dust problem subsides rapidly.

The Westside Plains cover almost a million acres and are bounded, in general on the east, by irrigated areas; on the west, by the foothills; on the north, by the Fresno-Merced county line; and on the south, by the area around McKittrick.

A large part of the area is composed of excellent agricultural soil. When ultimately brought under irrigation, it will compare favorably in production with the best soils in the San Joaquin Valley.

In recent years the main reasons for the large amount of dust originating on the Westside are subnormal rainfall and more than usual winds of high velocity. The last six consecutive seasons of subnormal rainfall made the longest such period on record. Until rainfall occurs in amounts sufficient to produce a vegetative cover, dust storms are likely to continue.

Observations indicate that—with sufficient rainfall—enough seed is present to produce a good cover.

The seriousness of the situation and the losses caused by the dust storms led to the initiation of an experimental range study with the Range Land Utilization Committee and the Agricultural Extension Service co-operating.

Three parcels of land of about 500 acres each were leased—one each in Fresno, Kings and Kern counties. These tracts are being fenced to exclude livestock.

The leased areas are to be used mainly for two purposes: *1*, trial plantings to find new plants which are superior to those now growing in the area; and, *2*, to develop some system of grazing manage-

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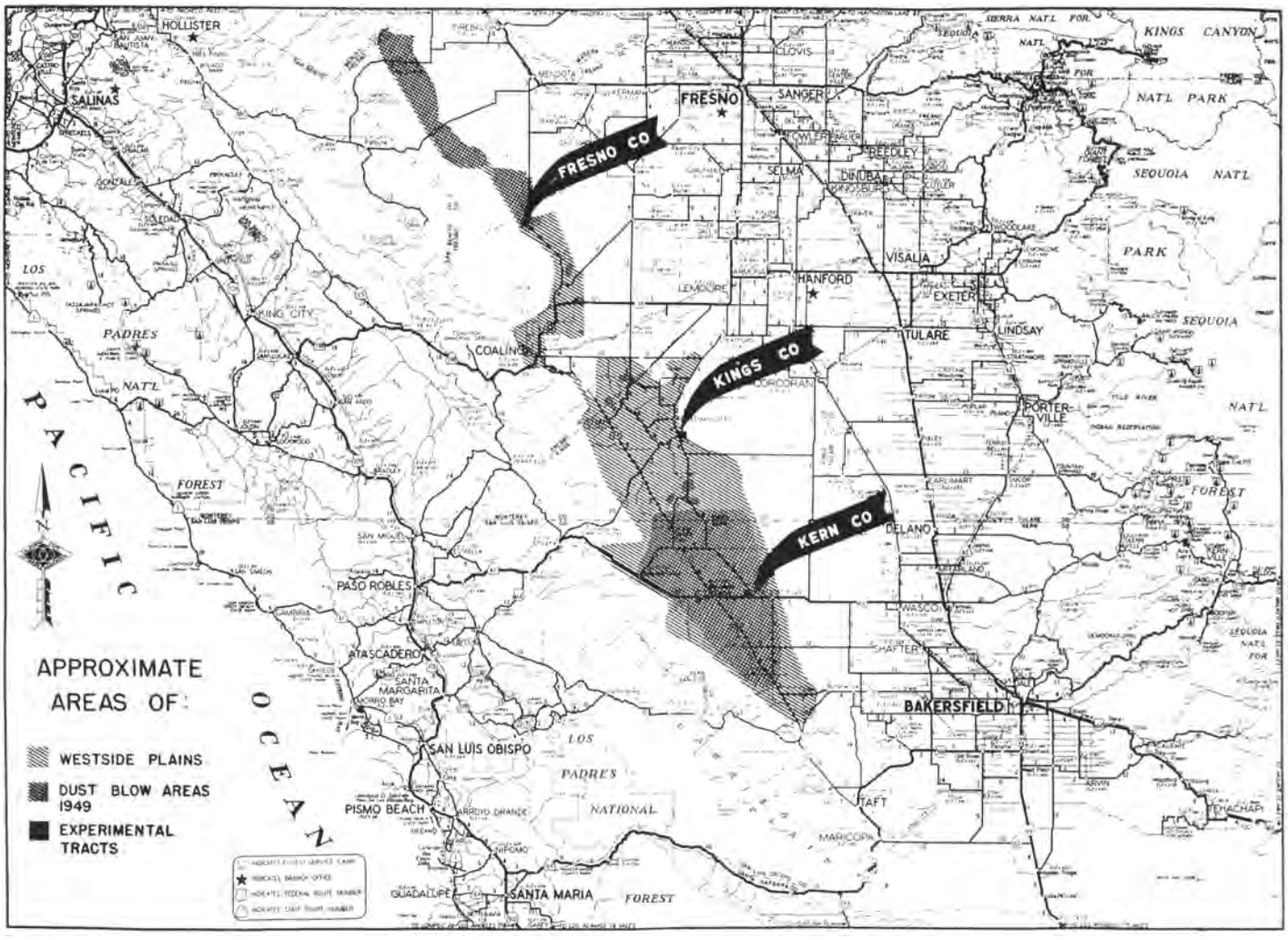
Unirrigated Westside Plains of the San Joaquin Valley where dust originates in dry years.



WESTSIDE

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ment that will leave a more effective dust control cover on the land. New plants or native plants may be developed or discovered which will produce a soil cover resistant to wind erosion. The idea of finding new plants is not too remote as foxtail and filaria—the two plants most popular with livestock men of the area—came from the Mediterranean region.

Most of the fenced areas are to be used for studies on grazing management practices which will leave a protective cover to aid dust control. This will be a complicated investigation involving economics, nutrition, palatability, season of use, and similar considerations.

During the first week of January, 1951, trial plantings were made in each of the leases. Plantings were made with a special range seeder which makes a furrow about 12" wide and from ¼" to ½" deep, and drills the seed in the middle of the furrow. By this method of seeding, the young plants get a chance to become established with less competition from native vegetation. Several rows—1,300 feet long and three feet apart—were sown with the following species: smilo, rose clover, annual rye, yellow flowered sweet clover, *Stipa cernua*, bur clover, cucamonga brome, soft chess, local rice grass, S.C.S. rice grass, harlan brome, deerweed *Lotus scoparius*, allscale *Atriplex polycarpa*, lenscale *A. lentiformis*, spinescale *A. spinifera*, wingscale *A. canescens*, and winter fat *Eurota lanata*.

About half of the species planted sprouted to a good stand but—due to the almost complete absence of rainfall—grew to about one inch in height only by March.

The clovers, rye grass, and bromes made a fine showing but none of the species lived long enough to permit any satisfactory evaluation.

Similar plots will be planted again this winter for continuing studies.

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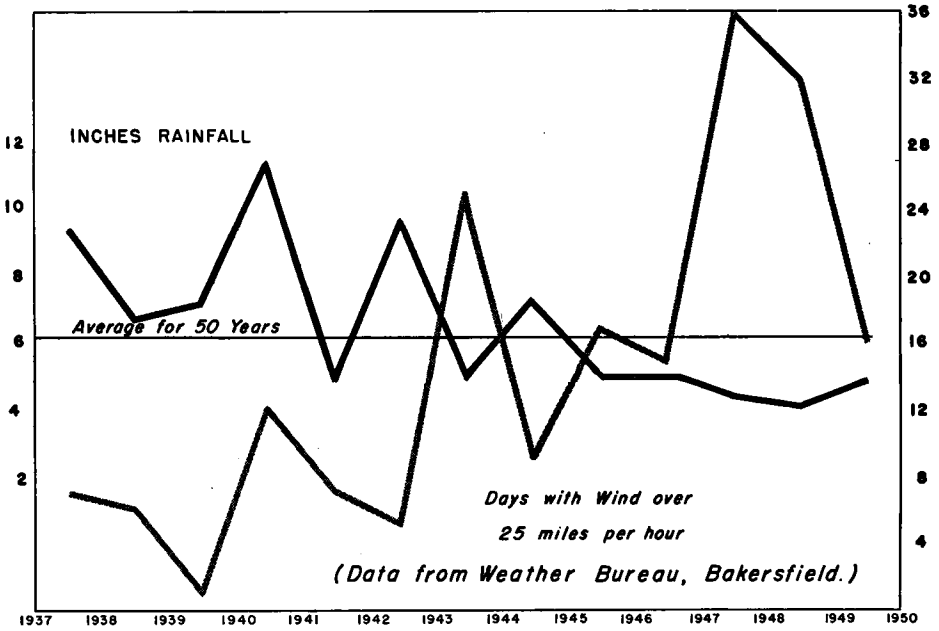
RAINFALL AND WIND STORMS — 1937 TO 1950



Experimental tract in Fresno County where tested plants grew to about one inch in height because of lack of rain. Photo taken in March 1951.

RESISTANCE

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subjected to commercial fumigation in previous years while the Temescal Canyon grove had been fumigated only every two or three years.

The net mortality in Temescal Canyon was the highest for any of the three areas tested but it was not high enough for control of the scale. With a net mortality of only 55.5%, there is no doubt that the scale in the Temescal Canyon area is resistant to HCN fumigation. The resistance in this particular grove had been maintained although the scale insects were subjected to fewer fumigations than were those in the groves in the other areas.

The scale in the Arlington Heights area had the greatest resistance to HCN fumigation. Pretreatment counts indicated a low natural mortality of only 14%, and a net mortality after fumigation of only 17%—which is very low. Apparently the scale in the Arlington Heights area is still very resistant.

It is evident that the citricola scale in the Redlands area—with a net mortality of between 27.4% and 38.9%—still possesses a high degree of resistance to HCN fumigation.

Although there is a variation in the degree of resistance of citricola scale to HCN fumigation in these three areas, it is apparent that the scale is still resistant.

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