UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 509
PLATE 1

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1965—G65025

Mapped by C. B. Hunt, 1956–57

Base from U.S. Geological Survey topographic quadrangles; Chloride Cliff, 1952, Furnace Creek, 1952, and Bennetts Well, 1952

MAP SHOWING PLANT DISTRIBUTION, DEATH VALLEY, CALIFORNIA

SCALE 1:62 500

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT HALF-INTERVAL CONTOURS

EXPLANATION

XEROPHYTES

Plants dependent upon surface and vadose water. Arranged by altitude with highest altitude forms at top. Numbers indicate approximate number of shrubs per acre

BENCHLAND XEROPHYTES

f

Burroweed *Franseria dumosa*
Common associated shrubs are creosote bush, incienso, and desert holly

e

Incienso *Encelia farinosa*
Common associated shrubs are creosote bush, burroweed, and desert holly

c

Creosote bush *Larrea tridentata*
Upper boundary drawn at lower limit of burroweed or incienso. Lower boundary marks lower limit of creosote bush. At low altitudes creosote bush is mixed with desert holly and (or) cattle spinach; these commonly are more abundant than the creosote bush. At intermediate and upper altitudes are many nearly pure stands of creosote bush

h

Desert holly *Atriplex hymenelytra* in nearly pure stands
On the gravel fans in front of Artists Drive and Funeral Mountains. Common associated shrubs are honeysweet Tidestromia oblongifolia *and a spurge. At south, the desert holly mixes with cattle spinach*

Ap

Cattle spinach *Atriplex polycarpa* in nearly pure stands
At north the cattle spinach mixes with desert holly

XEROPHYTES ALONG DRY WASHES

Surface water and vadose water more plentiful than in benchland, but permanent water table is beyond reach of these plant roots

mm

Mixed stands
Common shrubs are those of the adjoining benchland xerophytes and, in addition, some or all of the following: honeysweet Tidestromia oblongifolia; *stingbush* Eucnide urens; *bebbia* B. juncea; *desert trumpet* Eriogonum inflatum; *sticky-ring* Boerhaavia annulata; *incienso* E. farinosa; *stephanomaria* S. parryi; *a spurge* Euphorbia sp. *and pygmy cedar* Peucephyllum schotti

ch

Cheesebush *Hymenoclea salsola*
Includes the common shrubs of the adjoining benchland xerophytes, but few others. Restricted to low edges of fans on west side of Badwater Basin

PHREATOPHYTES

Plants dependent on permanent ground water, arranged in order of increasing salt tolerance; the least salt-tolerant at the top

LESS SALT-TOLERANT PHREATOPHYTES

Salt tolerance up to about 2 percent

mp

Mixed stands at springs and along spring-fed washes on the gravel fans
Common shrubs are those xerophytes on nearby benchland, in the washes, and, in addition, the following phreatophytes: honey mesquite Prosopis juliflora; *screwbean mesquite* P. pubescens; *arrowweed* Pluchea sericea; *desert baccharis* B. sergiloides; *a rabbitbrush* Chrysothamnus *sp.; tamarisk* Tamarix gallica *and* T. aphylla; *inkweed* Suaeda suffrutescens *alkali sacaton grass* Sporobulus airoides; *saltgrass* Distichlis stricta; *and, locally, common reed grass* Phragmites communis; *a rush* Juncus *sp.; bulrush* Scirpus *sp., and sedge* Carex sp.

m

Honey mesquite *Prosopis juliflo*
Ground mostly dune sand around edge of the salt pan. Associated plants are the more salt-tolerant phreatophytes

a

Arrowweed *Pluchea sericea*
Generally includes an understory of saltgrass

Ac

Four wing saltbush *Atriplex canescens*

i

Inkweed *Suaeda suffrutescens*
Generally mixed with desert holly; sparse growth along lower edge of the desert holly on west side of Middle Basin; also on Furnace Creek fan

as

Alkali sacaton grass *Sporobulus airoides*
Forms small pure stands but in large areas commonly is mixed with saltgrass

MORE SALT-TOLERANT PHREATOPHYTES

Tolerance 2 to 6 percent

t

Tamarisk *Tamarix galica* and *T. aphylla*
Associated plants include any or all of the phreatophytes. Stands have developed from plants introduced since 1882

s

Saltgrass *Distichlis stricta*
Nearly pure stands; locally associated with Juncus cooperi

p

Pickleweed *Allenrolfea occidentalis*
Nearly pure stands. The most salt tolerant of the plants; tolerates up to 6 percent of soluble salts in the soil moisture around its roots

AREAS WITHOUT PERENNIAL SHRUBS

B

Bare ground
Average less than one shrub per acre except along washes

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Limit of species