

Desert Plants

Volume 4. Numbers 1-4. 1982

Published by The University of Arizona for the
Boyce Thompson Southwestern Arboretum



Special Issue

Biotic Communities of the American Southwest—United States and Mexico

David E. Brown
Editor

ORIGINAL ON FILE
WESTLAND
RESOURCES, INC.
LIBRARY

Picacho Peak State Park. Photo by Josh Young.

Desert Plants

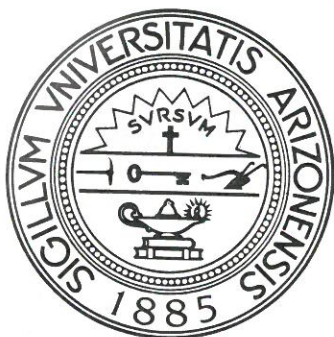
A quarterly journal devoted to broadening knowledge of plants indigenous or adaptable to arid and sub-arid regions, to studying the growth thereof and to encouraging an appreciation of these as valued components of the landscape.

Frank S. Crosswhite, editor

Volume 4, Numbers 1-4. 1982

Published by The University of Arizona
for the Boyce Thompson Southwestern Arboretum
P.O. Box AB, Superior, Arizona 85273.

The Boyce Thompson Southwestern Arboretum at Superior, Arizona, is cooperatively managed by The Arizona State Parks Board, The Boyce Thompson Southwestern Arboretum, Inc., and The University of Arizona.



A Special Issue of Desert Plants

Since the journal *Desert Plants* began publication in 1979 it has carried a number of articles and reports dealing with trees, shrubs, cacti and other desert plants in the landscape. Acceptance of *Desert Plants* by subscribers has greatly exceeded all expectations. As this is written the chronological list of subscribers, which began with number 0001, has now reached above the 4,000 mark. As the subscription list has grown it has been possible to make various improvements, to publish longer manuscripts, to use more illustrations, and to publish some photographs in full color.

In keeping with the *Desert Plants* policy of having an occasional special issue devoted to a single subject, the Boyce Thompson Southwestern Arboretum takes special pride and pleasure in publishing *Biotic Communities of the American Southwest — United States and Mexico* by David E. Brown (ed.), a result of many years of careful research and compilation sponsored by the U.S. Forest Service, the Arizona Game and Fish Department and other state and

federal agencies.

This special issue deals with the country between 27° and 37°30' N Latitude and 103° and 118° W Longitude. Although the "Southwest" thusly defined clearly centers on Arizona and New Mexico, it also includes Baja California del Norte, major parts of Sonora, Chihuahua, California, Nevada and Texas, as well as minor parts of Baja California del Sur, Coahuila, Utah and Colorado. This part of the North American continent is well known for its checkerboard of vegetation which includes major arid and subarid categories.

This issue of *Desert Plants* promises to become a collector's item. Single copies of a 48-inch by 60-inch companion map in color, "Biotic Communities of the Southwest," by David E. Brown and Charles H. Lowe, are available while the supply lasts free of charge from: Publications Distribution, Rocky Mountain Forest and Range Experiment Station, USDA Forest Service, 240 West Prospect, Fort Collins, Colorado 80526.

Contents

Acknowledgements 5

Foreword 6

Management Applications of Biotic Community Data 7

David R. Patton

Introduction 8

Charles H. Lowe and David E. Brown

Historical Background to Southwestern Ecological Studies 17

David E. Brown, W.L. Minckley and James P. Collins

Part 1. — Tundras 25

Arctic and Alpine Tundras 26

111.5 Alpine Tundra 27

Charles P. Puse

Part 2. — Forests and Woodlands 35

Boreal Forests and Woodlands 36

121.3 Rocky Mountain (Petran) Subalpine Conifer Forest 37

Charles P. Puse and David E. Brown

121.4 Sierran Subalpine Conifer Forest 40

Charles P. Puse

Cold-Temperate Forests and Woodlands 42

122.3 Rocky Mountain (Petran) and

Madrean Montane Conifer Forests 43

Charles P. Puse and David E. Brown

122.5 Sierran Montane Conifer Forest 49

Charles P. Puse

122.4 Great Basin Conifer Woodland 52

David E. Brown

Warm-Temperate Forests and Woodlands 58

123.3 Madrean Evergreen Woodland 59

David E. Brown

123.4 Californian Evergreen Forest and Woodland 66

David E. Brown

123.5 Relict Conifer Forests and Woodlands 70

David E. Brown

Tropical-Subtropical Forests 72

124.6 Sinaloa Deciduous Forest 73

Howard Scott Gentry

Part 3. — Scrublands 79

Arctic-Boreal Scrublands 80

131.5 Subalpine Scrub 81

David E. Brown

Cold-Temperate Scrublands 82

132.1 Great Basin Montane Scrubland 83

David E. Brown

Warm-Temperate Scrublands 85

133.2 Californian Coastalscrub 86

Charles P. Puse and David E. Brown

133.1 Californian (Coastal) Chaparral 91

Charles P. Puse

133.3 Interior Chaparral 95

Charles P. Puse and David E. Brown

Tropical-Subtropical Scrublands 100

134.3 Sinaloa Thornscrub 101

David E. Brown

Part 4. — Grasslands 107

Arctic-Boreal Grasslands 108

141.4 Alpine and Subalpine Grasslands 109

David E. Brown

Cold-Temperate Grasslands 112

142.4 Montane Meadow Grassland 113

David E. Brown

142.1 Plains and Great Basin Grasslands 115

David E. Brown

Warm-Temperate Grasslands 122

143.1 Semidesert Grassland 123

David E. Brown

143.2 Californian Valley Grassland 132

David E. Brown

Tropical-Subtropical Grasslands 136

144.3 Sonoran Savanna Grassland 137

David E. Brown

Part 5. — Desertlands 143

Cold-Temperate Desertlands 144

152.1 Great Basin Desertscrub 145

Raymond M. Turner

Warm-Temperate Desertlands 156

153.1 Mohave Desertscrub 157

Raymond M. Turner

153.2 Chihuahuan Desertscrub 169

David E. Brown

Tropical-Subtropical Desertlands 180

154.1 Sonoran Desertscrub 181

Raymond M. Turner and David E. Brown

Part 6. — Wetlands 223

W.L. Minckley and David E. Brown

Arctic-Boreal Wetlands 237

Cold-Temperate Wetlands 239

Warm-Temperate Wetlands 248

Tropical-Subtropical Wetlands 268

Literature 288

Appendix I. A Digitized Classification System For the Biotic Communities of North America, With Community (Series) and Association Examples for the Southwest 302

David E. Brown, Charles H. Lowe and Charles P. Puse

Appendix II. Scientific and Equivalent Common Names of Plants and Animals Used as Examples in the Text, Arranged by Biomes 316