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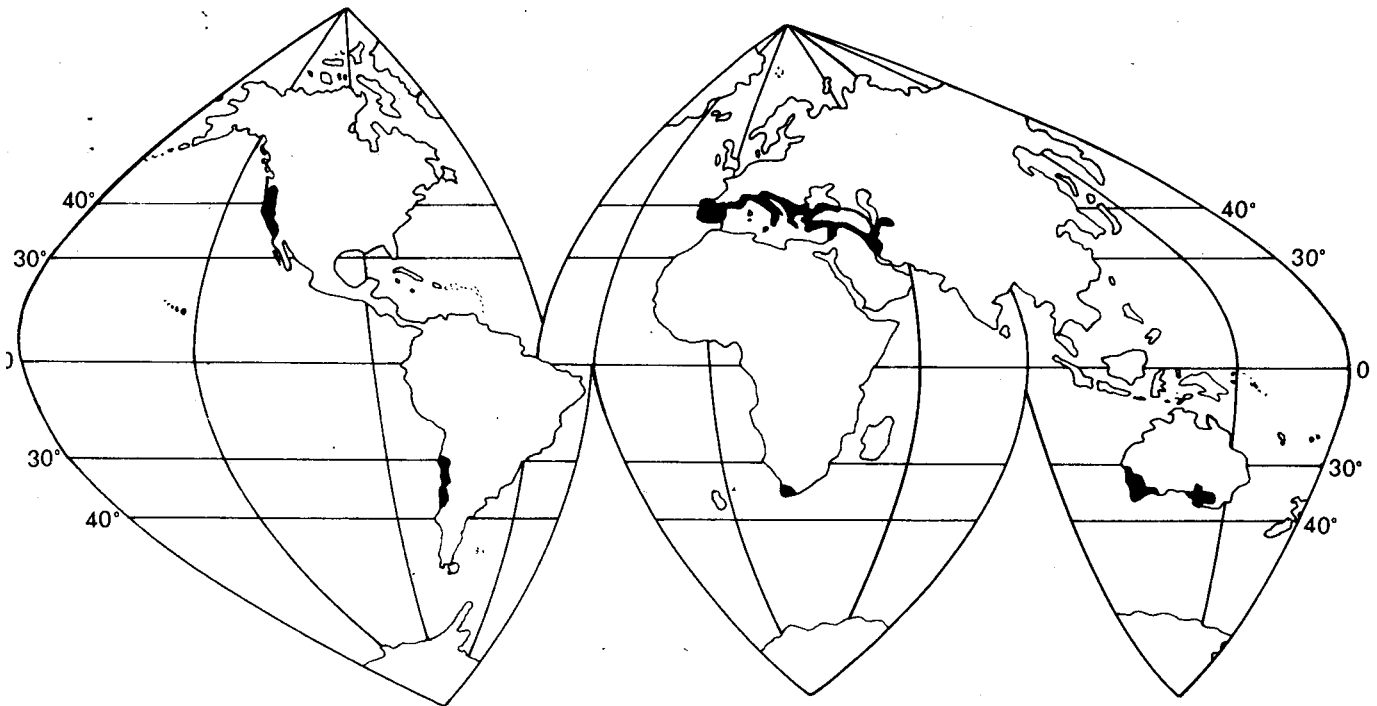
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Proceedings of the Symposium on  
**Dynamics and Management  
of Mediterranean-Type  
Ecosystems**

June 22-26, 1981, San Diego, California

San Diego State University



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Proceedings of the Symposium on

# Dynamics and Management of Mediterranean-Type Ecosystems

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Technical Coordinators:

**C. Eugene Conrad**

Pacific Southwest Forest and  
Range Experiment Station

**Walter C. Oechel**

San Diego State University

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## PREFACE

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Mediterranean-type ecosystems, which typically have a summer drought, are of worldwide importance. They are present in North and South America, Europe, Africa, and Australia. In California, the regions of Mediterranean climate contain more than 70 percent of the State's population in about 40 percent of its land area. The Mediterranean Rim countries have high population concentrations and ancient cultures. The South African, Australian, and Chilean ecosystems, though less densely populated, have long histories of human impact.

Much of the conceptual development and organization of this Symposium arose from the great need to establish better mechanisms of information exchange between scientists and resource managers. This need is recognized as an international problem. We therefore envisioned a forum for the exchange of information that would meet the following requirements:

- Provide opportunity for researchers and practitioners to talk to each other
- Involve representatives of many nations and many disciplines, and deal with many levels of ecosystem organization
- Generate a published volume of proceedings as a source of information for participants and others.

The first two of these requirements were met during the conferences. Publication of these Proceedings meets the third requirement.

Some of the participants at the conference described themselves as practitioners; others, in about equal numbers, as researchers. These two groups made up more than two-thirds of the participants. Others described themselves as primarily educators, students, environmentalists, or members of the interested public. Of the 377 or more registered participants, about 10 percent were from countries other than the United States.

Numerous sponsoring organizations, listed on the preceding page, contributed money, time, and supplies to the Symposium. Also listed are those persons who shared in organizing and carrying out the meetings. The task could not have been accomplished without the support of these groups. Not included in the list are a great many special people in each of the sponsoring organizations who also made important things happen. These workers were involved all the way from the first ideas for the Symposium to the completion of this publication. It is the anonymous workers who make those who are named look good.

The 5-day Symposium was organized into 15 sessions, a number which made necessary two and even three concurrent sessions at times. Selected product displays were in place during the day and posters were presented at two evening

sessions. As much as possible, the sessions were arranged to avoid conflict between closely related subjects in the same time slots. These Proceedings, therefore, do not follow the day-to-day sequence of the program, but are organized according to subject matter.

An examination of the "Perspectives" of scientific and management programs began the Symposium and also introduces these Proceedings. Following are sections on "Vegetation," "Fauna," "Soils," "Hydrology," and "Fire," each drawing the appropriate sessions together. Then a section on "Planning" covers a single session. The final paper for each session was prepared, usually by the coordinator, as a summary and synthesis of the papers presented. "Review and Follow-up" presents remarks made in a concluding session by selected participants, and also includes two additional papers. One describes the Laguna-Morena Demonstration Area, the subject of an afternoon field trip. The second discusses certain problems of particular concern to developing countries. The final section in these Proceedings is the "Poster Presentations," which provides brief summaries of the displays, arranged in alphabetic order.

To expedite the publication of the Proceedings, we asked each author to assume full responsibility for submitting manuscripts in photoready format by the time the conference convened. The views expressed in each paper are those of the author and not necessarily those of the sponsoring organizations. Trade names are used solely for necessary information and do not imply endorsement by sponsoring organizations.

In the opening session, one speaker suggested forming a Mediterranean Ecosystems Institute with international participation. The proposal was widely discussed and favorably received during the week that followed. Presently, efforts are being made toward the establishment of an international steering committee. A first step being planned is the formation of a representative working group that would operate within the framework of an existing international organization. Continued exchange among scientists and practitioners on an international scale through such a group is needed if the best and most appropriate methodologies are to be applied to land resource problems in all Mediterranean climate ecosystems.

*Technical Coordinators:*

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Range Experiment Station

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## ACKNOWLEDGMENTS

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### Sponsors and Organizers

Chaparral Research and Development Program, Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture

In 1977, the Forest Service, U.S. Department of Agriculture, established a research and development program at this Station titled "Vegetation Management Alternatives for Chaparral and Related Ecosystems." This 5-year program, with headquarters at Riverside, California, is an intensive effort to develop, test, and demonstrate a wide range of operations for maintaining or increasing the productivity of chaparral and related ecosystems in southern California.

Systems Ecology Research Group, San Diego State University

The Systems Ecology Research Group was established in 1975 at San Diego State University. Investigators in the Group have specialized in basic ecological research in Mediterranean-type environments. Early research focused on resource use and allocation in the chaparral of California and the matorral of Chile. Current studies concern mechanisms controlling resource use, organization of plant communities in chaparral ecosystems, and plant succession following fire in chaparral.

California Department of Forestry

The California Department of Forestry is charged with fire protection and resource management responsibilities on the majority of California's non-Federal wildlands. In recognition of the value of vegetation management in meeting these responsibilities, the Department in 1981 began a major new program of vegetation management. The program works with private landowners, providing State cost-sharing to carry out projects based on the degree of public benefits derived.

### Co-Sponsors

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Charles W. Philpot, Pacific Southwest Forest and Range Experiment Station, Riverside, California  
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