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1992–1993

Don C. Erman, Director

WILDLAND RESOURCES CENTER
Division of Agriculture and Natural Resources
University of California
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Report 32
December 1993
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Introduction

Goals and Objectives

The Wildland Resources Center seeks to stimulate research and to foster extension of knowledge on conservation, management, and utilization of wildland resources with a view to their optimum present and future use. Broad general goals are to:

• enhance the capacities and image of the University’s research and extension work related to wildlands
• provide liaison among the University’s academic staff and key people in state and federal agencies and other organizations concerned with wildland resources and problems
• provide coordination among the University’s research and extension activities related to wildlands

Objectives for the center are numerous and change with time. Current efforts of the center focus on the following objectives:

• provide information about the center to scientists and specialists concerned about terrestrial renewable natural resources
• make administrators and the academic staff of the University aware of the social, economic, and environmental importance of California’s wildlands
• augment financial support for the University’s programs in research and extension related to wildlands
• inform investigators of availability of research funds in their areas of expertise
• build and maintain directories to expertise and facilities related to wildland resources in California
• inform state and federal agencies, public utilities, and environmental groups concerned with wildlands and associated resources about the roles and activities of the center and capabilities of the University to solve their problems
• provide facts and information about governmental agencies concerned with wildlands to aid the academic staff in contacting agencies for support and assistance
• assist in planning for research, development, and extension programs to solve wildland problems
• build an infrastructure to support watershed management research and extension

Organization

The Wildland Resources Center is a systemwide, multicampus, organized research unit and special program supported by and reporting to the Associate Vice President for Special Projects and Programs of the Division of Agriculture and Natural Resources. The center is charged to relate not only to research but also to extension and continuing education activities concerned with terrestrial natural resources. Leaders in the Agricultural Experiment Station are kept fully informed about all matters affecting the center. The director of the center is Dr. Don C. Erman, Department of Wildlife and Fisheries Biology on the Davis campus.

The center is guided in fulfilling its goals and objectives by two kinds of committees. A policy board comprised of 12 members of the academic staff from several campuses is the primary advisory body for the center. Technical panels are formed as needed to assist in guiding specific projects.

Director’s Report

The Policy Board met twice: at UC Berkeley in fall and at UC Santa Barbara in spring.

The final directory, to private and other agencies involved in research and extension in wildlands, was completed in December 1992. The third edition of the UC directory was published in May 1993.


The center accepted several state contracts, part of which included operational expenses. Continuing contracts in 1992-1993 from the California Department of Forestry and Fire Protection were as follows:

• inventory of research and extension in wildlands (concluded in December 1992)
• assistance in development of a habitat conservation plan for the northern spotted owl (concluded in March 1993)
• development of decision analysis support for evaluation of alternatives for the spotted owl habitat conservation plan (concluded in March 1993)
• statewide assessment of timber inventory on private, commercial timberlands (concluded in June 1993)
• socioeconomic assessment of alternatives to conserve the California spotted owl.

New contracts from the California Department of Forestry and Fire Protection included:

• timber supply analysis under new forest practices legislation
• Sierra Nevada research planning
• mixed ownership protocols project on the Mokelumne River watershed
• development of a study plan to relate past and ongoing hillslope activities to stream channel conditions.

Contracts with the California Department of Fish and Game included a continuing study on the effects of temperature on gametogenesis in chinook salmon and a new study on four molossid bat species in California.

Pacific Gas and Electric Company made a donation to the center continuing awards for excellence in research in wildlands. Based on joint identification of priorities and after making a search in its UC database, the center mailed out announcements of the awards. The six awardees have been presenting seminars on their research at PG&E’s San Ramon research facility beginning in the spring and will continue into 1994.

The director devoted substantial time at the state level representing the University in ongoing planning and policy concerning wildland resource problems and biodiversity in California.

Consolidation

The third year of permanent budget reductions to the University resulted in the administrative consolidation of the center with the Water Resources Center, the Salinity/Drainage Taskforce, and the Water Quality Program under the name of Centers for Water and Wildland Resources. The consolidated unit and the center, both under the direction of the center’s director, will move to the Davis campus in late summer. Each unit will retain its individual identity and multicampus research unit standing.

Directories to Expertise and Facilities

The center published the third, updated edition of *Wildland Expertise and Facilities in the University of California System* in May 1993. The center’s combined directory database to research and extension work related to wildlands now includes 2307 individuals: 358 in state agencies, 804 in federal agencies, 253 in the California State University system, and 892 in the University of California. The 1993 UC directory added 62 staff and faculty scientists to this edition.

Inventory of Research and Extension Work

The inventory of wildlands research and extension in California begun by Dr. Dana Abell was completed in December 1992 by Dr. Alan Stangenberger of the Department of Forestry and Resource Management on the Berkeley Campus. Presentation of the database and a demonstration by projected computer display was made before the California Board of Forestry. Dr. Stangenberger illustrated the searching capabilities and type of data incorporated in the final product. The database can be searched to locate not only researchers by fields, but also active research projects and levels of funding.

**Timber Industry Growth and Harvest Study**

The cooperative study undertaken by the center to assess the current status of timber inventory, growth, and harvest on private commercial timberlands in California was concluded at the end of the fiscal year. The work for this contract was under the direction of Professor William McKillop (UC Berkeley, Department of Forestry and Resource Management). The contract for this project was extended and augmented to allow for independent review of the data by Professor Keith Gilless (also of UC Berkeley, Department of Forestry and Resource Management).

The combined advisory teams (technical team of four scientists, including former board member Professor Rundel, and oversight committee of nine people, including Professor Romm of the policy board) met twice (once in October 1992 and once in June 1993). A report was submitted by Dr. Gilless and a final draft was produced by Dr. McKillop. Written comments were invited from advisory team members. The final report from Dr. McKillop, the assessment by Dr. Gilless, and comments from three of the team members will be included in a forthcoming publication by the center in late summer.
California Bat Studies

The center received an additional $25,000 in funding from the California Department of Fish and Game to continue status surveys for three rare California bat species: the western mastiff bat, (Eumops perotis), the pocketed free-tailed bat, (Nyctinomops femorosaccus), and the big free-tailed bat, (Nyctinomops macrotis). All are considered mammals of Special Concern by California Department of Fish and Game, and the mastiff bat is a candidate for listing as endangered under the Federal Endangered Species Act. This year, a fourth species, the spotted bat (Euderma maculatum), another federal candidate species, has been added to the study. Research for this project is being conducted by an independent consultant, Dr. Elizabeth Pierson.

The current distribution and status of these species is being assessed by evaluation of historically important localities, and by searching for new localities using acoustic techniques. All four species have distinctive, high intensity, audible echolocation calls, which, when recorded, can provide documentation of the species presence. The study has so far identified several previously unknown populations of the pocketed free-tailed bat in San Diego County, and has found the mastiff bat to be more widely distributed at lower elevations of the western Sierra than previously realized (although populations in the Los Angeles basin and the developing areas of San Diego County appear to be declining). Prior to this study, the spotted bat was known from only 13 specimens statewide, and no roosts had ever been identified. An extant population has now been located, based on acoustic data, at Yosemite National Park.

Northern Spotted Owl Habitat Conservation Plan

The northern spotted owl Habitat Conservation Plan (HCP) for state and private lands continues to be developed and refined. Dr. Martin Berbach, Wildland Resources Center consultant with the Department of Forestry and Fire Protection (CDF), assisted in writing and producing two administrative drafts of the HCP. After release of the first internal review draft on August 11, 1992, the HCP steering and scientific committees met in September and October to resolve several issues. Some of the most crucial issues that had to be resolved were landowner incentives for participation, funding, and a habitat description. The second draft was released on December 12, 1992, for comments by the HCP committees and several selected outside reviewers. At that time, Dr. Berbach resigned his consulting position and accepted a permanent position with CDF in Resource Management as an associate wildlife biologist in Sacramento.

The HCP was presented by the steering and scientific committees to the Board of Forestry's Forest Practice Committee meeting in June 1993 in Redding. The HCP was well received by the Forest Practice Committee and the audience, but the issues of the habitat description and funding were still unresolved. At present, the HCP steering and scientific committees are working on refining the habitat description based on data from private timberlands. The Board of Forestry is currently working on strategies for funding the northern spotted owl HCP.

California Spotted Owl

The range of the California spotted owl extends from the northern Sierra Nevada into the coastal mountains near Mexico. Concern about the status of the owl led to a cooperative state and federal effort to provide for conservation of the species throughout its range. State and federal natural resource agencies met in June 1991 and convened the “California Spotted Owl Assessment and Planning Team.” Among the agencies represented were the U.S. Forest Service, the U.S. National Park Service, the U.S. Bureau of Land Management, and California’s Resources Agency, Department of Forestry and Fire Protection, Board of Forestry, and Department of Fish and Game. The purpose of this effort is to insure that state and federal policies conserve the California Spotted Owl by developing an effective strategy to protect the owl across a range of land holdings and jurisdictions. The charter for the cooperative effort directs federal and state natural resource agencies to

"...work cooperatively...to assess local research, inventory and monitoring information for the...spotted owl...[And that]...as more information becomes available...agencies will continue to work cooperatively to incorporate other species and habitat needs into a long-term ecosystem planning strategy for the Sierra and Southern California ecosystems."

A Steering Committee was established, co-chaired by Ron Stewart, Forest Service Regional Forester, and Douglas Wheeler, Secretary of the California Resources Agency. In addition to the members noted above, the Steering Committee included a number of "observers" from environmental groups, the forest products industry, and county government. The Steering Committee provided general guidance to two specialized teams, one with expertise in biology.
and ecology, and another with expertise in economics and policy analysis. They were respectively labeled the “Technical Team” and the “Policy Implementation Planning (or ‘PIP’) Team.” This venture was designed to produce three major results:

- A review by the Technical Team of the status of the California spotted owl, to be published as a technical report.
- Recommendations by the Technical Team for a management strategy to maintain viable populations of the owl, including an assessment of alternative measures considered.
- An analysis by the PIP Team of socio-economic effects resulting from the implementation of the management recommendations of the Technical Team, including an “evaluation of alternative institutional strategies” and regulatory applications to be considered for adoption by state and federal agencies.

The Technical Team, headed by Dr. Jared Verner of the Forest Service, was charged with assessing the biological status of the California Spotted Owl and making recommendations to insure the survival of the species. The Policy Implementation Planning Team, headed by Dr. Richard Standiford of the University of California, was directed to advise the Steering Committee on the economic, social, and institutional aspects of implementing the Technical Team recommendations. Staff and analytical support for the Team is provided by Dr. Larry Ruth and graduate student researchers through a contract with the Wildland Resources Center.

The Technical Team’s report was accepted by the Steering Committee in Fall 1992. An interim management plan has been adopted by the Forest Service pending a comprehensive review in an environmental impact report (EIS) under NEPA.

The Policy Implementation Planning Team’s review of impacts and their evaluation of alternative institutional approaches to implementation in the Sierra Nevada and in Southern California is nearly complete. Information contained in this report is expected to contribute to the Forest Service’s EIS. The Policy Implementation Planning Team’s draft report will be presented to the Steering Committee in Fall 1993.

**Sierra Nevada Research Planning**

The center, in collaboration with the California Department of Forestry and Fire Protection and the Resources Agency, defined the goals and structure for a project to assess the priority needs for research in the Sierra Nevada. Review and comments from the center’s policy board were important in shaping the final agreement. The center will form a Sierra Nevada Research Advisory Team from local representatives in Sierra counties, from the scientific community knowledgeable about the Sierra, and from at-large interests.

The team of about 35 members is expected to develop a report to the state which will summarize the adequacy of existing information, research needs and priorities, the research agenda, and a process for administering a Sierra Nevada research program.

Presentation of the team’s findings will be made to the public in Sierra regions, to the Sierra Summit Steering Committee, and the Executive Council on Biodiversity.

**Sierra Nevada Ecosystem Project**

The director was appointed a member of the steering committee for the Sierra Nevada Ecosystem Project. This $7 million study, funded in part by Congress and mostly by the USDA Forest Service, will examine the status, distribution, and future of old-growth forests in the Sierra and develop a full range of alternative management options for the entire ecosystem. Development and assessments of the various alternatives will be the charge of an 18-member science team under the direction of a team leader.

The six-member steering committee, representing the University, the USDA Forest Service, The California Academy of Sciences, the National Park Service, and a scientist of national stature (member of the National Academy of Sciences), was charged with selecting a science team leader and developing a list of potential science team members. The steering committee will continue to provide overall project guidance until completion of the study in December 1995.

The team leader selected initially was Dr. John Gordon of Yale University, who resigned shortly after initial acceptance because of family obligation. The steering committee then selected Professor Deborah Elliott-Fisk, UC Davis, and Director of the Natural Reserve System, as the new team leader. In consultation with Dr. Elliott-Fisk, the steering committee completed selection of the 17 other science team members. The final team includes several University faculty members, and is expected to directly involve many other University faculty, staff, and students with knowledge and expertise concerning the Sierra.

This study will have far-reaching consequences for future management of the Sierra and will influence approaches to ecosystem management elsewhere. The center will receive a contract from the Forest Service to manage the funds and administer the work under the guidelines of Congress and the Steering Committee. This will include support of the science team, special consultants, and necessary staff. The center will solicit information concerning the Sierra from the individuals listed in the center’s directories to wildland expertise. Later the center will help plan and organize a major symposium on the Sierra.

This study and the other, state-supported project, Sierra Nevada Research Planning, will be complementary projects, both coordinated by the center.
Biodiversity at the State Level

The director has continued to represent the University as the alternate for Vice President Ken Farrell at quarterly meetings of the Executive Council on Biodiversity. The council enlarged its membership by adding additional government agencies (state and federal) and several representatives of organizations of county supervisors. The council has worked on preparing an educational video explaining biodiversity and heard from several groups who explained efforts to plan for biodiversity elements through better state, federal, and local coordination.

The director also serves on the editorial board of coop forestry extension newsletter on biodiversity (Natural Resources News, Hannah Kerner, Editor, Department of Environmental Science, Policy, and Management, 163 Mulford Hall, University of California, Berkeley, CA 94720. Telephone: (510) 642-2360. FAX: (510) 643-5438. Email: kerner@nature.berkeley.edu). This newsletter, as well as one published by the council itself, aims to expand information distribution about current issues in integrated resource management.

Biodiversity Symposium Proceedings

The proceedings of the October 28-30, 1991, symposium on biodiversity in Santa Rosa, California, was published in December 1992 in the center's report series. Technical papers from 40 presentations and 3 panelist papers are included. Dr. Richard Harris, extension forester, was the primary conference organizer and senior editor of the proceedings. The director and extension staffer Hannah Kerner also served as editors.

Pacific Gas and Electric Awards

The Pacific Gas and Electric Company donated $28,000 to the center for "Awards for Research Excellence in Wildlands." Five University of California research groups were awarded gifts. The awardees were:

- G. Mathias Kondolf, Landscape Architecture, Berkeley, for "Determination of Flushing Flow Requirements in the Trinity River Below Lewiston Dam"
- Peter B. Moyle, Wildlife and Fisheries Biology, Davis, for "Long-Term Work at Martis Creek and Experimental Predator-Prey Studies"
- Robert L. Bugg, Sustainable Agriculture Research and Education Program, Davis, for "California Native Forbs and Grasses for Weed Suppression in Rights-of-Way"
- Mark R. Stromberg, Hastings Natural History Reservation, and John W. Menke, Agronomy and Range Science, Davis, for "Establishment of Native Perennial Grasses in Ongoing Cattle Operations"
- Joseph J. Cech, Jr., Wildlife and Fisheries Biology, Davis, for "Limiting Factors in Salmonid Fish Habitat Requirements"

Research by 16 investigators from the 3 northern campuses and Hastings Natural History Reservation was reviewed by a joint team of UC faculty and PG&E scientists, headed by Ellen Yeoman of PG&E.

The center used a small part of the donation in support of the wildland research seminar series at the PG&E research center in San Ramon. Three recipients presented spring seminars. The two remaining recipients will present seminars in the fall and winter. Funds remain to continue the series in 1993-94.

Announcing Sources of Funds

During the past year, 60 announcements of sources of funds for grants and contracts were distributed in the form of 8,087 flyers to UC's academic staff at 8 campuses and many county offices of Cooperative Extension. Although most of the disseminated information was provided by the Sponsored Projects Office on the Berkeley campus, this year seven of the announcements of opportunities came from other sources, such as the Western Regional Center (WESTGEC) of the National Institute for Global Environmental Change (NIGEC).

The center's keyword dictionary continues to be a powerful tool for getting information to selected audiences. The number of keywords used in dispersing announcements ranged from 1 to 16 and averaged over 4 per mailing.

Keywords used frequently this year included ecosystems; waste management; environment-organism interactions; climate; and global warming.

Expenditures

Expenditures for the 1992-93 fiscal year for the center's regular program of work amounted to $163,026. An additional $7500 was provided from special funds by the Vice President's office for production and mailing of the UC directory. Funds were provided from regular appropriations for the Agricultural Experiment Station. Funds from extramural contracts were expended as follows:

- Inventory of forest/wildlands research $ 8,326
- Spotted owl habitat plan $19,078
- Northern spotted owl timber harvest plan analyses $ 345
- PG&E gift $27,000
- California owl $62,113
- Timber inventory study $27,612
- Chinook salmon $ 370
- Habitat plan evaluation $18,182
Gifts and Contracts

New funds received from extramural sources during the fiscal year involved:

California Department of Fish and Game
- gathering information on four species of molossid bats $25,000

California Department of Forestry and Fire Protection
- socioeconomic assessment of alternatives to conserve the California spotted owl $33,695
- timber supply modeling $135,576
- Sierra Nevada research planning $105,000
- Mokelumne River watershed - mixed ownership protocols project $31,500
- development of a study plan to relate hillslope activities to stream channel conditions $20,000

Pacific Gas and Electric Company
- awards for research excellence $28,000

Income from the sale of publications amounted to $283.

Policy Board

The center's policy board met twice during the fiscal year to review the program, activities, and finances of the center. The fall meeting was held at Berkeley on November 9, 1992. The spring meeting was held at Santa Barbara on April 19, 1993, where Dr. Theodore Adams was elected to chair the policy board. Priorities were established among alternatives, and advice was given that channeled and expedited the center's program of work.

The 12 current policy board members represent 6 campuses plus Cooperative Extension. Two members agreed to serve a second term and three retiring members were replaced by new members from their respective campuses.

Staff and Facilities

Don C. Erman  
Director

Elizabeth Frey  
Program Assistant II (0.75 FTE)

Alan G. Stangenberger  
Specialist (0.55 FTE)

Beginning in September 1993, the center will be located in 1323 Academic Surge on the Davis campus as part of the Office of the Director of the Centers for Water and Wildland Resources. The 380 square-foot office will house work stations for four persons with four microcomputers for word processing, desktop publication, and accessing the wildland expertise database. Space on the Berkeley campus includes a small office in 311 Giannini Hall.

Publishing

The center published three reports this year:

Proceedings of the symposium on biodiversity of northwestern California. Richard R. Harris, Don C. Erman, and Hannah M. Kerner. (Report 29—1000 copies at a printing cost of $5830.)
Wildland expertise and facilities in the University of California System. Don C. Erman, Elizabeth Frey, and Alan G. Stangenberger. (Report 30—2200 copies at a printing cost of $6,941.)
Complete List of Publications

Conserving wildland resources through research: Introductory report from the Wildland Research Center. October 1, 1959. 64 p.


*Publication out of print.
## Policy Board Members

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<th>Term Expires</th>
<th>Name, Title, Address</th>
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<td>Daniel W. Anderson, Professor Department of Wildlife and Fisheries Biology 66 Briggs Hall, UC Davis, 95616</td>
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<td>(916) 752-6586</td>
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<td>1993</td>
<td>Sylvia M. Broadbent, Professor Emerita Department of Anthropology 1327 Watkins Hall, UC Riverside, 92521</td>
<td>(909) 787-3844</td>
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<td>(909) 787-5524</td>
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<td>1993</td>
<td>Jeffrey M. Romm, Professor Department of Forestry and Resource Management 145 Mulford Hall, UC Berkeley, 94720</td>
<td>(510) 642-6499</td>
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<td>1993</td>
<td>E. Lee Fitzhugh, Extension Wildlife Management Specialist Department of Wildlife and Fisheries Biology 8 Briggs Hall, UC Davis, 95616</td>
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<td>1994</td>
<td>Alexander J. Home, Professor Department of Civil Engineering 609 Davis Hall, UC Berkeley, 94720</td>
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<td>1994</td>
<td>Roderick Nash, Professor History/Environmental Studies 4816 Ellison Hall/3215 Phelps Hall, UC Santa Barbara, 93106</td>
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<td>1994</td>
<td>B. Diane Wallace, County Director Cooperative Extension 5555 Overland Avenue, UC San Diego, 92123</td>
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<td>1995</td>
<td>Theodore E. Adams, Jr., Extension Wildlands Specialist Department of Agronomy and Range Science 121 Hunt Hall, UC Davis, 95616</td>
<td>(916) 752-3457</td>
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<td>1995</td>
<td>Margaret H. Fusari, Lecturer and Natural Reserve Coordinator Departments of Environmental Studies and Biology 272 Applied Sciences Building, UC Santa Cruz, 95064</td>
<td>(408) 459-4971</td>
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<td>Frank Davis, Associate Professor Department of Geography 5710 Ellison Hall, UC Santa Barbara, 93106</td>
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<td>1995</td>
<td>Thomas A. Scott, Area Natural Resources Specialist Department of Earth Sciences 2217 Geology Building, UC Riverside, 92521</td>
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