Children of Coyote, Missionaries of Saint Francis, it seems to me, would be an excellent "first assignment" for upper division college classes in California history, social history, or Hispanic California history. Yes, there are plenty of statements in the book with which a knowledgeable reader might take issue. After all, the book is a *tour de force* of explanations for poorly-documented religious, political, and personal motivations and decisions in the past. I myself was not particularly happy with Hackel's invented cover term—Children of Coyote—for aboriginal native Californians. Hackel was looking for a culturally-significant term by which to refer to the speakers of the many native language groups. But since nobody used that name for their own people at the time of Spanish contact (or since), I could do without it. But all in all, this is a fine piece of work, Sherburne Cook with a stronger nod toward real individuals in the past.

A Canyon Through Time: Archaeology, History and Ecology of the Tecolote Canyon Area, Santa Barbara County, California

Jon M. Erlandson, Torben Rick,
and René Vellanoweth
Salt Lake City, Utah: University of Utah Press, 2008, 224 pp., illus., $35.00 (paper).

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The purpose of this book is to present a comprehensive cultural and ecological history of the Tecolote Canyon area in southern California. Employing the findings of past excavations and the results of their own cutting-edge research, Erlandson, Rick, and Vellanoweth detail significant societal and environmental transformations over 10,000 years in coastal Chumash country. The study area consists of a distinctive drainage composed of two canyons (Tecolote and Winchester) that extend from the southern flanks of the impressive Santa Ynez Mountains to the Pacific Ocean, a little west of the modern-day city of Goleta in Santa Barbara County. Written in a lucid style for both professional archaeologists and the broader public, the authors skillfully present archaeological data on critical sites and historical records for significant cultural places, along with an impressive array of maps, tables, and photographs, to generate the history of the Tecolote Canyon area.

In writing this succinct and readable book, the authors make several important and timely contributions to California archaeology. First, the book emphasizes the importance of taking a long-term, diachronic perspective for truly understanding the history of any area in California. The authors examine human settlement, subsistence, and technology throughout the Early, Middle, and Late Holocene periods, emphasizing Chumash versatility and resourcefulness in responding to significant social and ecological changes. Tecolote Canyon history, however, does not stop with European contact, but continues through historic times up to the present. The book is also a testimony to the persistence of the authors in completing and publishing on the Tecolote Canyon Archaeological Project, which spanned over 25 years and involved various spurts of intensive field work funded primarily by cultural resource management initiatives. The project is exemplary for maintaining an overarching research design with pertinent research questions that structured the field and laboratory work for over a quarter of a century. It is also exemplary for incorporating archaeological work undertaken many decades earlier by Frederick Ward Putnam, David Banks Rogers, and others as important databases for examining the structure, age, and content of significant archaeological sites that proved important in evaluating the project's research questions.

The long-term character of the field work at Tecolote Canyon also encapsulates the story of an archaeologist coming of age. Here a young, carefree Jon Erlandson, with his long board, Bermuda shorts, and tie-dye shirts, once surfed nearby Haskell's beach searching for the perfect wave. Later, as a student at the University of California at Santa Barbara, he began participating in archaeological projects in Tecolote Canyon. Eventually, Erlandson would direct much of the work discussed in the book, and provide the motivating force and perseverance to bring together this impressive archaeological synthesis.

A second notable contribution of the book is the integration of ecological history into the core of the archaeological research. Beginning with geological developments and tectonic processes that produced the coastal landscape of the Santa Barbara Channel area, the authors present an overview of the flora and fauna of the region, specifically the "stacking" of multiple, richly endowed habitats between the mountains and sea. They incorporate the latest findings on changes in sea level, sea surface temperatures, droughts, and El Niño events to examine the long-term influences that environmental transformations had on the Chumash people in the study area. Significantly, they also consider the implications of long-term human impacts on the landscape and environment of the Tecolote Canyon area.

A third notable contribution is that the book serves as a model for demonstrating the benefits of long-term collaborative archaeological research. From the outset of the Tecolote Canyon Archaeological Project, archaeologists worked closely with local Chumash people to incorporate their concerns and ideas into the scope of work. Significantly, Chumash elders and tribal scholars collaborated with archaeologists to preserve and protect as much of the archaeological record as possible in the study area, and—in cases where development would ultimately destroy sites—to study these remains in as sensitive a way as possible, using appropriate cutting-edge scientific methods.

The concise book (197 pages including references) is divided into eight chapters. The first three introduce the reader to the Tecolote Canyon area, its landscape history, and the past history of archaeological research in the area. The next four chapters discuss the cultural and ecological history of the canyon during four major time periods: the Early (10,000–7,000 B.P.), Middle (7,000–3,500 B.P.), and Late Holocene (3,500 B.P.–Spanish contact), and the "Historic" period after Chumash encounters with European explorers and settlers beginning in A.D. 1542. The latter chapter also describes historical and modern impacts of Spanish and Euro-American settlements and land use practices on the canyon lands. The final chapter summarizes the main conclusions of the Tecolote Canyon Archaeological Project, and compares and integrates these findings with the history of the western Santa Barbara coast.

In a comprehensive book covering more than 10,000 years of history, much can be highlighted. For the purposes of this brief review, I conclude with three observations. First, Erlandson, Rick, and Vellanoweth present a useful overview of subsistence and technological changes among local Chumash populations. While considerable variation is demonstrated, the general trend over time from Early and Middle to Late Holocene times is an increasing diversification and intensification in the use of coastal and terrestrial resources. Early Holocene people obtained the majority of their protein from shellfish, and much of their calories from plants, as evidenced by the milling stone assemblages, in addition to the eclectic harvesting of game, fish, and birds. With sea level rise continuing in the Middle Holocene, and the silting of local estuaries and an overall shrinking terrestrial landscape, significant changes are seen in the types of shellfish, the addition of mortars and pestles, and technologies associated with more intensive hunting and fishing activities. By Late Holocene times, local Chumash people had greatly diversified their fishing technologies with nets, harpoons, and boats, now harvesting a varied range of fish from pelagic and nearshore waters, including kelp forests, rocky reefs, sandy beaches, and bay and estuarine habitats. There is also good evidence for the hunting of sea mammals (such as the now locally extinct Guadalupe fur seal and sea otters), and terrestrial game, including deer, rabbits, and raccoons, along with a few birds (e.g., loons and gulls).

Second, the authors provide insights on Chumash settlement dynamics over time. During Early Holocene times, at least some of the habitation sites appear to have been semi-sedentary residential bases that anchored people near good shellfish collecting and terrestrial plant harvesting habitats. Interestingly, local populations appear to have been more residentially mobile in Middle

Holocene times. In Late Holocene times, as sea levels stabilized and the contemporary landscape came into view, habitation areas focused along the mouth of Tecolote Canyon near productive coastal habitats and sources of fresh water. These later village sites (SBA-71, -72, -73), which played important roles in David Banks Rogers' definition of the Canaliño archaeological culture, were relatively permanent, were situated on both sides of Tecolote Creek, and were associated with cemeteries, dance floors, and semisubterranean temescals (sweat lodges). These sites, which were occupied intensively and continuously from 1,300 to 500 years ago, show evidence of interpersonal violence, differential distributions of wealth and prestige items, and the diversification and intensification of resources (as noted above). Significantly, permanent Chumash occupation of the study area appears to have ended about 500 years ago.

Third, the authors consider the broader impacts that Chumash and non-Indian cultures have had on the Tecolote Canyon area, and on the greater Santa Barbara coast. They discuss how Chumash populations affected local habitats over the last 10,000 years through various fishing, gathering, and hunting activities. Economic intensification influenced the local abundance of specific species of shellfish, fish, and marine and terrestrial mammals. However, indigenous landscape management practices, primarily prescribed burning, in some places increased biodiversity, enhanced grasslands and shrubland, and augmented populations of some terrestrial game. Erlandson, Rick and Vellanoweth stress that throughout Holocene times, only one species found in the archaeological record, the flightless duck (*Chendytes lawi*), became extinct due to human predation. They contrast this with the varied ecological catastrophes brought on by Spanish and later Anglo-American landscape practices, practices that led to the eradication of varied plant and animal species and the broad transformation of the environment along the Santa Barbara coast.

In conclusion, this in-depth study of a specific place on the Santa Barbara Coast enhances our understanding of Chumash cultural developments, developments that have been debated in the archaeological literature over the last two decades. What I particularly appreciate is how the book complements and relates to much of the recent work that Erlandson, Rick, and Vellanoweth have conducted on the northern Channel Islands and in other areas of the Santa Barbara coast. My only quibble with the book is that in incorporating some of the earlier archaeological findings of David Banks Rogers and others, I was sometimes confused about whether various analyses of artifacts and faunal remains were based on these earlier works or on the later studies conducted by the authors. However, this is a pretty minor point in light of the concerted effort of the authors to integrate prior archaeological work (including the re-analysis of museum collections) into their study. This book belongs on the shelf of all California archaeologists and anyone else interested in a case study of complex hunter-gatherers and the coastal Chumash.