The California Geographer

Volume 42
2002

CALIFORNIA GEOGRAPHICAL SOCIETY

A Publication of the
CALIFORNIA GEOGRAPHICAL SOCIETY

THE CALIFORNIA GEOGRAPHER

List of Editors

(Vol.)		
I–X	1960–1969	Robert A. Kennelly
XI	1970	Robert W. Durrenberger
XII–XIII	1971–1972	Elliot G. McIntire
XIV	1973–1974	Roderick C. McKenzie
XV–XVIII	1975–1978	Donald G. Holtgrieve
XIX–XXII	1979–1982	Ronald F. Lockman
XXIII–XXX	1983–1991	Donald R. Floyd
XXXI–XXXIV	1992–1994	Elliot McIntire
XXXV–XXXVI	1995–1996	Bill Takizawa
XXXVII–XLI	1997–2001	Ray Sumner
42	2002	Judy Walton

List of Associate and Guest Editors

(Vol.)		
XI	1970	Elliot G. McIntire
XVIII	1978	Nancy Schluntz
XIX	1979	James W. Yerdon
XXIII–XXX	1983–1990	William L. Preston
XXXV	1995	Ray Sumner
XXXVI	1996	Carol Jean Cox
XXXVII	1997	Arnold Court, Dennis Napier, Barney Warf
XXXVIII	1998	David Nemeth
XXXIX	1999	Dale Pullin

The California Geographer

Volume 42, 2002

A Publication of the
California Geographical Society

Edited by
Judy Walton

Typeset by Cooper Publishing, Corvallis, Oregon
Printed by Ken Young Printing, Glendora, California

The California Geographer

The California Geographer is a refereed journal of the California Geographical Society. It has been published annually since 1960. Volumes I–XXIX (1–29) are indexed in volume XXIX, 1989, and volumes I–XVII (1–17) are indexed in volume XVII, 1977. With this issue (vol 42), volume numbering changes from the Roman to Arabic system.

For information on submitting a manuscript, see "Instructions to Contributors" on back page.Address manuscript inquiries to Judy Walton, CG Editor, Department of Geography, Humboldt State University, Arcata, CA 95521.

Information for Subscribers

Subscription Information: The domestic subscription rate is $10 per year; the foreign rate is $14.95. Back issues are available for $15 each. Questions regarding subscriptions should be directed to CGS, 1149 E. Steffen Street, Glendora, CA 91741.

Advertising: Full page (4.5"w x 7.5"h): Inside front cover—$300; inside back cover—$250; back cover—$300; elsewhere—$200. Half page (2.25"W x 3.75"H): 50% of full-page rates. For more information, contact Debra Sharkey, Geosciences Department, Cosumnes River College, 8401 Center Parkway, Sacramento, CA 95823-5799. Tel: (916) 691-7210; fax: (916) 691-7142; e-mail: sharked@crc.losrios.edu.

California Geographical Society
1149 E. Steffen St.
Glendora, CA 91741–3736

CALIFORNIA GEOGRAPHICAL SOCIETY
2002–2003

Web site: www.calgeog.org

Table of Contents

Articles

Geographic Education

Geographic Chronicles

Book Reviews

Sociocultural Aspects of Attitudes Toward Marine Animals: A Focus Group Analysis

Unna Lassiter
California State University Long Beach

Jennifer R. Wolch
University of Southern California

Abstract: In geographic research of the past decade, the understanding of nature-society relations has broadened to include ideas about our relationship with and attitudes toward animals. In this study, we explore the relationship between attitudes toward marine animals and sociocultural diversity, and the role of cultural difference and marginalization in the attitude formation process. We conducted five focus groups with low-income, inner-city Los Angeles women of different race/ethnicity (African American, Latina, Chicana, Chinese, and Filipina). From these group discussions we learned that participants had experienced both a distancing from and a rapprochement with animals in their everyday lives, leading them to alter their attitudes toward animals. Also, their experience of social exclusion and marginalization led many to understand that ideas about animals are socially constructed. Building on this understanding, certain participants argued that some animal-related practices have an overriding cultural purpose, even if such practices are not sanctioned by mainstream norms for human-animal relations prevalent in the U.S. This research contributes to our understanding of nature-society relations in geography, and can help wildlife managers better communicate to the public and garner support for species preservation and habitat conservation.

Introduction

EXCITING CHANGES ARE HAPPENING in geography in the study of human-environment relationships. Geography's flagship journal, the *Annals of the Association of American Geographers*, today devotes a section to nature-society relations in every issue. Among the six Nystrom finalist papers presented in the May 2002 issue

of *The Professional Geographer*, topics related to nature-society relations were well represented. Not surprisingly, the subfield of animal geography is attracting increasing attention, with the recent publication of *Animal Geographies* (Wolch and Emel 1998), *Animal Spaces, Beastly Places* (Philo and Wilbert 2000), and a growing number of textbooks that include perspectives on human-animal relations. This development has not occurred in a vacuum: from history to anthropology, the social sciences have launched a reconsideration of human-environment relations, partly in response to the real and urgent need to better understand attitudes toward nature in order to shape more effective practices and policies. Wildlife managers, for instance, are beginning to incorporate some of the latest research findings in their efforts to increase participation rates in recreational fishing (Murdock et al. 1996; Hunt and Ditton 2001); to engage divergent stakeholders, from state wildlife agency personnel to wildlife rehabilitators, in resolving common problems (Bright, Lipscomb, and Sikorowski 1997); and to reframe conservation on cultural grounds in places such as East Africa, where local economic incentives are not necessarily forthcoming (Infield 2001).

In the short time it has existed, attitudinal research related to nature and animals has changed significantly. Until recently, this research was based on survey questionnaires, from "new environmental paradigm" questionnaires (Dunlap and Van Liere 1978) to Kellert's surveys of attitudes toward wildlife (1979; 1987; 1993; 1999; with Berry 1980; with Gibbs and Wohlegenant 1995), on which much subsequent work has been modeled. While researchers have used surveys to characterize a range of attitudes and broadly link them to demographic variables, their efforts to clarify why differences occur, how attitudes change, and how people negotiate attitudes with behaviors have been largely frustrated. Also, academic and commercial research on animal-related topics has tended to focus on animal testing, hunting, vegetarianism, membership in animal rights organizations, the fur industry, organ transplants, companion animals, and zoos (Herzog and Dorr 2000).

But this research has done little to extend the understanding of a particular group's attitudes toward animals. Today, as attitudinal researchers better appreciate the dynamic nature and social contexts of attitudes, they are turning to other qualitative methods such as focus groups. The objective is not so much to

record attitudes and identify the groups that hold them but to create new conceptual frameworks from which to better understand the dynamic and complex nature of attitudes. It is within this research context that we undertook our investigation of the sociocultural processes of attitudinal change, and in particular the role of cultural "difference" in the attitude formation process. We wanted to examine how the process of marginalization might impact these attitudes: would disenfranchisement make people more or less sympathetic to animals and how would a change in attitude be explained?

To address this question, we investigated relationships between sociocultural factors (e.g., ethnicity/race, immigrant status, degree of assimilation) and attitudes toward marine animals among women of color living in Los Angeles. Greater Los Angeles, a major metropolitan coastal region, is an area where extraordinarily heterogeneous human populations live among unique ecosystems that contain threatened or endangered species. Our premise was that population subgroups in this city would have varying cultural traditions with respect to nature-society relationships and could therefore be expected to hold a wide variety of attitudes toward the environment and animals, marine animals in particular. We chose to focus on marine animals because people of all cultural and socioeconomic backgrounds are likely to have encountered them, whether at the beach, in aquaria, on fishing excursions, or at various events such as whale festivals and grunion runs. While marine animals were our primary focus, participants readily volunteered information about other animals such as pets.

We anticipated that the cultural diversity of life in Southern California would give residents the opportunity to reconsider their attitudes toward animals—perhaps leading to a repositioning of their views in relation to their sociocultural status—and that their insights into these changes could better help us understand the process of attitude formation and change. Our findings should also be of use to Southern California wildlife managers, who face the daunting challenge of dealing with an increasingly complex range of cultural practices and attitudes (Ewart, Chavez, and Magill 1993).

This paper presents findings from five focus group discussions conducted with low-income, inner-city women of color—one group each of African American, Latina,[1] Chicana, Chinese, and

Filipina women. Our analysis concentrates first on the various attitudes elicited in the groups, followed by a discussion of the contexts in which these attitudes formed and the reasons for them as given by participants. We then examine the resonance of various attitudes within each group and the connection between these attitudes and sociocultural variables, particularly cultural difference and marginalization. The criteria we used for our analysis were based on those outlined by Krueger (1994, 149–51), including internal consistency, frequency, extensiveness and intensity of comments, and recurring ideas that emerge to become the backbone of attitudes.

Focus Group Methodology

Conceptual Background

Focus groups (also known as "group depth interviews") involve bringing together groups of eight to twelve people to discuss an issue in the presence of a moderator who elicits a range of opinions and keeps the discussion from straying off course. While focus groups have been used increasingly in market research, social scientists are enlarging the purview of this methodology and using the technique to explore the processes of attitude formation across groups of people. Aside from the fact that they are faster and less onerous than individual interviews, focus groups appealed to us because the discussions allow participants more time to reflect, give them a chance to recall past thoughts and amend statements (Basch 1987, 434–35), and include the possibility for the moderator to probe for more details (Krueger 1994, 34–36).

Focus groups help ensure that topics are examined "from the perspective of representative participants of the study population and not just strictly through the lens of researchers" (Minnis et al. 1997, 47). Furthermore, exchanges between participants give researchers the opportunity to understand which arguments are of influence in attitude formation, or as Krueger (1994, 11) puts it: "Evidence from focus group interviews suggests that people do influence each other with their comments, and in the course of a discussion the opinions of an individual might shift. The focus group analyst can thereby discover more about how that shift occurred and the nature of the influencing factors."

In geography, the use of focus groups to characterize attitudes toward the environment started in the mid-1980s. For example, Burgess, Limb, and Harrison (1988a; 1988b) used focus group techniques to better understand people's fears in urban parks and the extent to which concerns about the environment affect people's purchasing choices (Bedford and Burgess 2001). Their work was premised on the belief that "empirically, group analytic practice explicitly recognizes the significance of *context* in any interpretation of discourse; it argues that the *content* of conversations within a group is inseparable from the *social structures* and the *processes of communication* within which it is spoken" (italics in original) (Burgess, Limb, and Harrison 1988b, 457–58).

More and more, geographers have advocated the use of focus groups in order to explore "the discourses which shape practices of everyday life, the ways in which meanings are reworked and subverted, and the creation of new knowledges out of seemingly familiar understandings" (Cameron 2000, 87). The focus group methodology continues to gain greater popularity in the discipline.

Study Methodology

Following an initial assessment of current literature on cultural attitudes toward nature, along with interviews with local coastal zone wildlife managers about how they thought cultural attitudes might be related to threats to the coastal environment,[2] we conducted five focus groups of up to eleven participants each. Each group was ethnically homogeneous and all participants lived in central Los Angeles. Our focus groups were composed of low-income women because, although gender and class differences in attitudes toward animals have long been noted, the attitudes of low-income people are still rarely considered and women's attitudes have not been extensively investigated (for important exceptions, see Kellert and Berry [1980] and Herzog, Betchart, and Pittman [1991]). Also, since our moderators were female, we could avoid the complicating issue of gender difference between moderator and participants. By conducting different focus groups with Chicanas and Latinas, we were able to gather separate, albeit related, perspectives on marine animals and also show how these perspectives are based on degree of assimilation as well as cultural traditions and family life.

The focus groups met on community agency premises and a stipend of twenty-five dollars was paid to each woman to cover costs of transport and childcare. Participants first responded in writing to a basic demographic questionnaire in their native language. The moderators in the Latina and Chinese groups were native speakers whom we hired and trained. In the discussions, participants were asked semi-structured questions about their interactions with, knowledge of, and attitudes toward animals, especially marine animals. Focus group sessions lasted up to two hours and were taped, transcribed, and analyzed using NU*DIST (Non-numerical Unstructured Data Indexing Searching and Theorizing), a qualitative data software package.

Participants

Forty-eight women were recruited through community groups and agencies that provide housing and social services to local low-income residents. From responses to a basic written questionnaire, we learned each woman's age, education, birthplace, length of residence in Los Angeles, membership in any animal-related organizations, and whether she had ever worked with animals or had had pets (Table 1). Although we were not concerned to ensure representation *per se*, a comparison to 1990 U.S. census data showed the women shared many demographic characteristics (especially education and nativity) with other central Los Angeles-area residents. Our participants ranged in age from 18 to 78, with a median age of 36. Almost a third of the women in each group had no high school degree, with the exception being the Filipina group, in which all had completed at least some college. Over half of all participants were born in other countries and three-fourths had lived in Los Angeles for more than eight years.[3] Within each group, participants differed significantly in terms of age and education (except for the Filipino group); in some groups they differed as to whether or not they were native to the U.S. or to Los Angeles. In terms of their relationship to animals, a third of the participants—especially the African Americans, Latinas, and Chicanas—had worked with animals on a farm at some point in the past. Over 90 percent of participants had had at least one pet and in fact reported a large number and variety of pets, from crickets to pigs. Only one woman (in the more educated Filipina group) was a member of an environmental/animal organization. In each group we found

a mix of experience that provided for contrast and fruitful exchanges.

Table 1.—Information on Focus Group Participants

	Afr. Am. (n=1)		Chicana (n=8)		Latina (n=10)		Chinese (n=10)		Filipina (n=9)		Total (n=48)	
Age												
Range	22–75		18–35		23–62		36–78		22–59		18–78	
Median	28		19		37		53		37		36	
Education	#	%	#	%	#	%	#	%	#	%	#	%
No degree	3	27	0	0	7	70	5	50	0	0	15	31
High school deg.	4	36	1	12	2	20	1	10	0	0	8	17
Some college	2	18	5	62	1	10	2	20	3	33	13	27
College degree	2	18	2	25	0	0	2	20	6	67	12	12
Birthplace												
Los Angeles	4	36	5	62	0	0	0	0	2	22	11	23
Rest of Calif.	1	9	0	0	1	10	0	0	0	0	2	4
Other states	5	45	1	12	0	0	0	0	1	11	7	15
Other countries	1	9	2	25	9	90	10	100	6	67	28	58
LA residency												
< 2 yrs	0	0	0	0	0	0	0	0	1	11	1	2
2 to 8 yrs	2	18	1	12	1	10	5	50	2	22	11	23
> 8 yrs	9	82	7	87	9	90	5	50	6	67	36	75
Member of org.												
Yes	0	0	0	0	0	0	0	0	1	11	1	2
No	11	100	8	100	10	100	10	100	8	89	47	98
Work w/animals												
Farm	5	45	4	50	6	60	1	10	0	0	16	33
Vet, pet store, lab	0	0	1	12	1	10	0	0	1	11	3	6
Pets												
Yes	10	90	8	100	10	100	8	80	8	89	44	92
No	1	10	0	0	0	0	2	20	1	11	4	8

Analysis

Typology of Attitudes

Our interpretation of the focus group discussions was based on both mainstream and critical focus group approaches (Lunt and Livingstone 1996). Mainstream procedure was applied in obtaining direct information about participants' practices related to animals, identifying their knowledge claims, and classifying their attitudes. But in clarifying sociocultural factors that emerged through group reflexivity and dynamics between participants, we followed procedures typically emphasized in critical focus group research. In the African American, Chicana, and Filipina

groups, leaders emerged (a frequent feature of single-gender groups) and we observed how this leadership dynamic arose, whether and how leaders challenged others in the group or consolidated agreement, and how contradictory views were handled.[4] In particular, we took note of how competing knowledge claims were strategically used by participants to convince others of the appropriateness of particular attitudes.

In order to establish the main attitudinal trends of the group discussions, we categorized statements according to Kellert's (1979) and Kellert and Berry's (1980) typologies of attitudes, with some modifications.[5] Kellert's typologies have been used to identify attitudes and pose questions to people of other cultures (see, for example, Bjerke, Ødegårdstuen, and Kaltenborn 1998). More recently, researchers have used Kellert's work to create new typologies that can help identify conflicting values between the public and wildlife managers (Miller and McGee 2001). In this vein, we adapted Kellert's typology based on the attitudes expressed in the group discussions and the justifications behind these attitudes.

Attitudes toward animals were expressed throughout the discussions and were linked to normative questions of how humans should or should not use animals. They also surfaced in the justifications participants used to explain certain animal practices, such as eating sea turtle eggs or dogs. Given the recurrence of certain attitudes that emerged from the discussions, we found it useful to group them into two overarching attitudinal perspectives—"anthropocentric" and "biocentric" (Table 2). This binary division allowed us to better portray the dialectical nature of the discussions.

Table 2.—Typology of Attitudes toward Marine Animals

Anthropocentric Perspective	Biocentric Perspective
Utilitarian-dominionistic	Environmental-naturalistic
Utilitarian-stewardship	Environmental-stewardship
Negativistic	Animal rights
Animal welfare	Coexistence
Aesthetic	
Other (e.g., spiritual)	

Source: Adapted from Kellert 1993.

The "anthropocentric perspective" comprises six types of attitudes exhibited by focus group participants. Utilitarian attitudes ("humans must use animals to survive") were divided into two types: one suggests humans use animals because they are inferior (utilitarianism-dominionistic), and the other that people should act as stewards of nature in order to protect resources for future generations (utilitarianism-stewardship). Negativistic attitudes incorporated expressions of dislike, disgust, and fear of animals. Animal welfare attitudes were characterized by statements reflecting human effects of interacting with animals, such as "We need to be kind to animals because of our emotional attachment to them," and concerns about the cruel treatment of animals. The aesthetic attitude also portrayed strong human-centeredness, giving weight to the visual pleasures provided by animals. We recorded statements relating to the spiritual value of animals to humans as "other" anthropocentric attitudes.

The "biocentric perspective" reflects nature-centered attitudes and exhibits less variation. The environmental-naturalistic perspective stresses animals as part of nature ("animals should not be harmed for their natural behavior"), while the environmental-stewardship perspective emphasizes a more managerial approach ("animals need a helping hand in order to live naturally"). The biocentric perspective also includes an animal rights attitude ("animals have as much of a right to satisfying lives as humans do") and a coexistence attitude, the view that people should learn to coexist with animals on the basis of fairness to animals and equal claims to territory ("the world is big enough for everybody to share"). This categorization helped us to identify attitudes and to code statements. We then counted the statements (overt attitudinal statements only; not, for example, nods of approval) and unpacked the justifications participants used to explain or argue their positions.

Classifying Focus Group Attitudes

In quantitative terms, most statements of attitudes (188 out of 242, or 78 percent) fit into the anthropocentric category (Table 3). The animal welfare attitude was especially well represented across all groups, with 84 such statements total. A Chicana, for instance, described her support of her mother's decision to have the family cats surreptitiously neutered despite the father's disapproval; she felt it was not only better for the animal but would

result in fewer nighttime disturbances for the family. In the Latina group, one woman explained her change of attitude since coming to the U.S. as follows: "There are street dogs in Central America who beg for food, and they bug you, and it's normal for people to kick them. I definitely don't agree with that anymore...I never realized how fun it is to have a pet and how easy it is to love [pets] once you know them."

Table 3.—Classification of Attitudinal Statements

# of Statements (N=242)	Attitude	Perspective
84	Animal welfare	Anthropocentric
45	Utilitarian-dominionistic	Anthropocentric
32	Negativistic	Anthropocentric
32	Animal rights	Biocentric
12	Other (e.g., spiritual)	Anthropocentric
11	Environmental-naturalistic	Biocentric
10	Utilitarian-stewardship	Anthropocentric
8	Environmental-stewardship	Biocentric
5	Aesthetic	Anthropocentric
3	Coexistence	Biocentric

The Chinese women reported being at odds with American sportfishing practices where fish are caught with "big cruel hooks" and not necessarily for food. One statement gathered widespread support: "Yes, Americans like animals, but on TV you see programs on sportfishing, catching fish with big hooks and releasing fish [just for] fun. But why if you love animals, why act so cruelly and inflict pain? The fishermen use big hooks that inflict pain." Although the Latina and Chinese groups were composed of some of the most recent immigrants, the prevalence of animal welfare statements in all the groups supports research that shows animal welfare attitudes are more common among women than men (Kellert and Berry 1980; Driscoll 1987; 1992; Herzog, Betchart, and Pittman 1991; Pifer, Shimizu, and Pifer 1994), and among those who keep pets (Driscoll 1987).

The next most common attitude—utilitarian-dominionistic—is also anthropocentric and was expressed in 45 statements (especially common in the Latina and Filipina groups), about half as many as animal welfare statements. This was followed by the negativistic attitude (especially present in the African American and Filipina groups), expressed as many times (32) as animal

rights attitudes (biocentric perspective). In the Latina group, one participant related that a friend had introduced her to animal rights and that it had played an important role in sensitizing her to animal suffering, especially because she came from a culture where such a view was nonexistent. Comments made in the Filipina group reflected moves in the opposite direction. An American-born participant explained how she had gone from an animal rights standpoint to a more utilitarian-dominionistic attitude, based on visits she had made to the Philippines and the cultural and economic conditions she encountered there. Several Filipinas argued that seemingly cruel cultural practices could be normalized in the Philippines by the fact that (to their knowledge) no animal rights organizations existed there. This point was underscored by one participant, who remarked that with a dictator (President Marcos) in power they had had more to worry about "than dogs."

Statements reflecting the environmental attitudes—both naturalistic and stewardship—were few and far between, and were unevenly developed. This probably reflected the fact that our questions probed into the women's everyday, family, and cultural practices rather than their knowledge of animals and natural processes or their views on environmental policy. Likewise, there were few comments reflecting utilitarian-stewardship and spiritual attitudes (anthropocentric perspective). Aesthetic and coexistence attitudes were present in various contexts but even more limited.

At the risk of downplaying some of these results (and their possible relation to demographic data, for instance), our objective was not to record a precise distribution of attitudes; focus groups are not meant to be used in this fashion. Our objective was to explore and gain an understanding of the relationship between attitudes toward marine animals and cultural diversity, and the role of sociocultural difference in the attitude formation process. By identifying recurring attitudinal statements and the anthropocentric and biocentric perspectives they represented, we gained insights into the general orientation of the groups. Our next step was to characterize the arguments participants used to defend their views; this was achieved by asking the women about their prior and current experiences with animals, the social contexts in which these took place, and changes in activities and perceptions.

Explanations for Attitudes, Practices, and Changes over Time

The focus group discussions provided a number of compelling explanations for how attitudes had formed or changed, elicited by questions about past and present interactions with marine animals. Like most Americans, many of the women recalled going to the beach as children and described their experiences with oceans and the many animals they had seen. In fact, family outings had strongly influenced the appreciation for all things marine for the Latinas and Chicanas (for similar findings see Duda, Bissell, and Young 1998, 657). Ocean-related activities were also tied to a strong social and traditional background in food provision through fishing and tidepool collecting, and were deemed important because they brought food to the table. Speculations about good fish to eat and ways to prepare seafood were important discussion foci in some groups, especially among African American and Latina women. They mentioned many varieties of fish in the course of their discussion, which largely centered on eating "marginal" or so called "trash" meats such as squirrels or possums as a strategy against poverty[6] (see also Wolch, Brownlow, and Lassiter 2000). This strategy was reported in all but the Chicana group, most of whom were young (median age 19) and had not faced the challenge of providing for families with extremely limited resources. Eating fish has remained an important practice for most of these women—one that connects childhood and/or traditional experiences with contemporary life in Los Angeles.

Contemporary participation in marine-animal-related activities centered on going to local beaches and visiting aquaria. Reasons given for going to the beach included fishing, enjoying cooler coastal temperatures, and giving children an inexpensive and fun place to play. However, the beach did not necessarily elicit a positive response and several women expressed mixed feelings about beach outings, including the fear that kelp (a seaweed common in Southern California) might cause one to drown. Aquarium visits dispelled the fears of some of the women by providing them with a memorable occasion to explore and learn about sea creatures. As one Latina explained: "I had never seen an octopus...I really thought they were very mad animals who ate people, and that the tentacles were enormous. It made me

laugh when I saw [at the aquarium] how big they really are. They are not really that big." Aquaria and zoo visits played a significant part in child rearing in the U.S., for the Latina group especially. Indeed, they considered visits to these places a vital part of their duty to educate children about animals.

Many sea-related practices had changed with time and relocation for both immigrants and non-immigrants. One practice that had declined among all focus groups was fishing. In the past, fishing had been carried out in the context of collecting animals for food and survival. With the decline of this need, some expressed regrets about losing an important opportunity for socializing, especially between children and parents. On the other hand, a Filipina was one of several who explained that because life is lonelier in the U.S., people have to rely more on animals for companionship. This had been the lived experience of many women in the Latina, Chicana, Chinese, and Filipina groups, most of whom reported having numerous pets (see Table 1).

Some of the changes in the frequency and types of marine activities seemed to be related to knowledge participants had about marine animals. For immigrants especially, knowledge was mostly characterized by "back home" experiences, including the longing for particular foods and activities. Rarely did their knowledge extend to the unique characteristics of the Southern California marine environment, because interactions with the current local environment were less common and less intense (no women reported depending on local fishing for their income or diet, for instance). An exception to this was two Filipinas (the most educated group), who made accurate and perceptive assessments of lowered fish counts based on their past activities: "I used to go snorkeling in Laguna Beach," said one, "and we would see all kinds of schools of fish, but I'm sad because some of the areas are really barren now." Said the other, "We used to go clamming...but there is a size limit, and you're not supposed to bring in the little ones."

Collectively, the women described many changes in their practices toward marine and other animals over time. There had been for most a distancing from animals both in the wild and as direct sources of food (although the sounds of chicken necks twisting and cries of squealing pigs had been seared into memory). Some consequences of these changes included regrets at the loss

of the social bonds that had been forged and maintained through participation in fishing and other practices related to marine animals. The local context of marine-related experiences now included other factors, namely cultural assimilation efforts (especially pronounced in the discussion of responsible child rearing) and contact with science-based institutions such as aquaria. Here we heard how fear had been mitigated by the controlled display of animals in aquaria, yet we wondered about the loss of knowledge based on direct experience.

Discussions about the women's experiential contexts were invaluable in that they clarified the nature of particular human-animal relationships, from the necessity to hunt and fish to the adoption of new relationships with animals in order to adjust to contemporary life in Los Angeles (and ensure the development of culturally adjusted children). Relations with animals in general had become closer, principally through the presence of companion animals in the home which had led to greater empathy toward other species.

Americanization, Cultural Difference, and Marginalization

By noting which arguments were used in the discussions to strategically uphold and defend particular views, we were able to examine their significance in shaping attitudes. These arguments emerged mostly in the context of various anthropocentric views and, to a lesser extent, in the discussion of biocentric views (such as animal rights attitudes). Importantly, attitudes were often defended on the basis of sociocultural position, for example as a response to marginalization and its imprint on the culture of an oppressed people.

Our questions probed into some of the more perplexing problems of human-animal relations: Should some animals deserve more respect? When should humans intervene in nature? And when should cultural practices that are deemed cruel to animals be overlooked? When asked what should be done about sea lion pups that had been starving on local beaches due to El Niño, the participant responses in several groups helped clarify the dynamic process of attitude formation. For instance, many initially felt that since El Niño is an act of God (African American group) or is a natural occurrence (Filipina group), nothing should be done. But this attitude changed over the course of the discussion. In

the African American group, one woman offered that because we know how to save animals it is a human responsibility to do so. Another claimed that the sea lion pups were "crying out" for help and should be assisted. Thus, the early fatalistic view was amended by a participant on the moral basis that, since animals suffer like humans, and since humans could provide care, we were obliged to assist. This argument justified an animal welfare and even an animal rights attitude for several African American participants. In the Filipina group, several women stated that since El Niño may have had anthropogenic causes, humans were responsible for remedies (cleanups or government initiatives were suggested).

The Chicanas were less fatalistic about El Niño, insisting that we should help marine animals not only because we can but because we are the *only ones* who can. The Latinas expressed a similar animal welfare attitude, focusing specifically on human failure to anticipate such a condition as El Niño. The women in the Chinese group agreed that if the sea lion pups could be helped by humans then help should be forthcoming. One woman justified this, however, by adding that if marine animals were left to die, then the waters would become polluted and unhealthy for humans—clearly a utilitarian-dominionistic statement.[7]

When probed about whether the particular species of animal should make a difference in the decision to perform a rescue, nearly everyone said it should not matter. African American women agreed that animals are not only "just like humans," but likened differences between animal species to differences between humans, and on this basis advocated for the rights of all sorts of animals to be treated equally:

> *Norma*: An animal is an animal and if they need our help, well...we should help them.
> *Georgia*: Right. Just like humans, they're all different; we're all different in some ways.
> *Norma*: In some ways; but, you know, we stay people.
> *Georgia*: In some ways; but I would rush to help you. I would...you know.
> *Norma*: Black, white, purple.
> *Georgia*: Yeah. So why wouldn't I rush to help like a goose, [or] a lion?
> *Carla*: Animals are just like humans.
> (Note: Participants' names have been changed.)

In the Filipina group, a discussant raised the issue of indigenous rights to hunt a whale. This topic was debated among several participants who supported Native American rights in general and saw the hunt as an act of cultural empowerment. Others added that Native Americans kill animals "more spiritually," and one woman likened this to the way Filipinos kill dogs for food. Another participant maintained that the death of animals for cultural reasons was more noble and meaningful than "being killed because they don't have a home...or [are running loose] on the freeway." Women in both the African American and Filipina groups justified particular animal-related practices on the basis of acceptance of cultural difference and in defense of the marginalized cultural practices of their own group. For African American women, poaching was considered an appropriate response to a dire need, especially because the need was created by white racism. This is a clear example of how the relationship between cultural background and attitudes toward animals can be complicated by processes of marginalization and resistance. Marginalization and struggles over identity may in fact be instrumental in preserving or invigorating some attitudes through resistance against the dominant culture.

In the Chinese group, one participant remarked that in the U.S. there seemed to be a stronger feeling of coexistence between humans and animals. She elaborated: "In the U.S., people accept the inconvenience of animals, and at Sea World, they don't mind if the whales splash them....The idea here seems to be coexistence. People bring [animals] inconvenience too, so there is mutual inconvenience." This participant interpreted American practices as being based on a desire for greater coexistence between humans and animals, where tolerance is mutual. Although she was baffled by this attitude, she was open to interpreting it as being based on a truly democratic ideal. This sentiment emerged, albeit unevenly, in all groups. Certainly this attitude is influenced by the Americanization process, in which tolerance is exalted as a critical character of Americans.

It is little wonder that the exchanges of these inner city women should rest so much on arguments related to their own position outside mainstream society. After all, they experience sociocultural and economic marginalization on an everyday basis—through poverty and their successful or unsuccessful attempts

to assimilate. Their arguments were carefully framed and the women often demonstrated an understanding that attitudes toward animals are socially constructed. Clearly they had learned this by comparing practices and values in different cultural contexts, and by being "put on the spot" and even criticized (justly or unjustly) for particular practices, such as dog eating, ascribed to their culture group as a whole. They knew their attitudes toward animals could play a role in their claims for being accepted into U.S. society or, alternatively, could shape their resistance to a mainstream America that so often rejects them.

How might these important motivations be included in a model of attitudinal formation? First, we must extend the idea that culture is a dynamic process to better understand the role it plays in shaping attitudes. Second, attitudinal models must take into account not just demographic factors but also the sociocultural and political contexts in which people of particular groups find themselves, in order to anticipate attitudes more accurately and develop more meaningful ways of communicating critical information about animals and nature. Third, considering the fact that all the wildlife managers we spoke to in the course of our study were white, science-oriented professionals, we suspect that many of their efforts to teach science-based ideas about animals might be misconstrued, not so much because they lack knowledge about particular cultures but because they are unaware of the role played by marginalization in making some attitudes more meaningful to certain groups (Lassiter 2000). If the social construction of attitudes is not clearly acknowledged, wildlife managers—and the science they represent—run the risk of losing credibility with populations whose thinking and behavior they wish to influence.

Summary and Conclusions

This exploration into the motives behind attitudes toward marine animals was based on focus groups, a qualitative methodology gaining prominence in geography. We hoped the participants could give us insights into the attitudinal changes they had experienced and that this would allow us to better understand sociocultural factors that enter into the shaping of attitudes toward animals. We identified a number of attitudes and their frequency and resonance in the discussions and noted the

contexts in which these attitudes arose and the arguments that were used to justify them. In this way, we benefited from what Goss (1996, 118) writes is a special appeal of focus groups, namely, that they "provide...the researcher with insight into the manner in which knowledge is produced, or reified into social truth, and in which social decisions are made in the local context."

Whether immigrants or not, women in all five focus groups related changes over time in their experiences and interpretations of the marine environment and marine animals. On the one hand, many described a distancing due to life course and/or geographical changes. Indeed (and not unlike other Americans), many of their marine-related activities had taken place when they were children and living elsewhere. On the other hand, several described having formed new and meaningful connections with animals (as pets for instance) now that they lived in the U.S. Influenced by norms operating within mainstream American society, even immigrants had some contact with mainstream American ideas about the "proper" treatment of animals, companion animals especially. This had apparent impacts on their awareness and attitudes. The most commonly expressed attitude among the women was one of "animal welfare," stressing the effects (positive and negative) on humans of interactions with animals. We expected this, since participants were women and since, in Kellert and Berry's (1980) survey of attitudes toward wildlife, women (as well as younger and more educated persons) demonstrated stronger animal welfare attitudes. However, the strength of this attitude was surprising given the low economic status of participants, which is often linked to more utilitarian views of animals. And in fact, statements reflecting the utilitarian-dominionistic attitude were the second most frequent in the discussions.

Most of these women were marginalized from mainstream society by race/ethnicity as well as by different geographical, historical, linguistic, sociocultural, and political conditions, and the adoption of new ideas about nature and animals often conflicted with traditional practices and beliefs. But it seems their utilitarian attitudes (expected to be strong since most had been raised in environments where animals played a direct role as food) may have been mitigated over time by the women's

struggles to "fit in" to American culture, especially through child-rearing practices. New practices and behaviors had played into their sympathies for animals, even animals that were not their pets.

Because these women experienced the contrasts between traditional and modern practices and attitudes with heightened acuity, they were more aware of the social construction of nature and animals. It was no surprise, then, that they defended some of their cultural practices (and those of other marginalized groups) on the basis of cultural survival or autonomy. In many instances they did this despite the close bonds they had formed with pets and the respect they had for nature and animals in general. Nevertheless, in every discussion the possibility for change—in practices, perceptions, and attitudes—was present, as expressed in the women's viewpoints on animal welfare, animal rights, and to a lesser extent, coexistence.

As exemplified in this study, attitudes toward animals are intimately related to one's experiences over the life course and as a member of an ethnic or sociocultural group. Moreover, a change in one's geographical context can trigger a reassessment of long-held values and attitudes, and adoption of new ones. On the other hand, marginalization and disenfranchisement can play a large part in strengthening an individual's attachment to particular traditional practices, even when these practices contradict new experiences or are socially unacceptable. By better understanding the sociocultural context of practices seen negatively in the U.S., we can develop more sensitive approaches to such behaviors. The role of sociocultural context—including processes of acculturation and assimilation—should be given greater attention by geographers and other social scientists seeking to understand attitude formation. Culture should not be understood as a fixed set of practices and attitudes, but as dynamic and fluid. Wildlife managers who grasp this conceptual understanding can seize the opportunity to more meaningfully engage a culturally diverse public in their science-based efforts. Further research on how attitudes are shaped through processes such as acculturation, disenfranchisement, and marginalization will by reflection also lead to better understanding of the role that mainstream society and attitudes play in the process.

Acknowledgments

We thank the U.S. Sea Grant Program for funding this research, and acknowledge the support and guidance of Linda Duguay, Phyllis Grifman, and Lyndell Whitley of the University of Southern California Sea Grant Program. We are also grateful to Alec Brownlow, Marcie Griffith, and Yadira Arévalo, as well as our anonymous reviewers and Judy Walton, for their valuable input.

Notes

1. The terms "Latina" and "Chicana" are used here to distinguish between first-generation immigrants from Mexico (Latina) and their children (Chicana). One participant in the Latina group was from Guatemala.
2. The interviews were repeated after conducting the focus groups to identify more clearly what wildlife managers might be "missing" about cultural attitudes (see Lassiter 2000).
3. Although we noted each participant's nativity and years in the U.S., we did not directly link these variables to attitudes because such relationships were unevenly drawn in prior research (Caro and Ewert 1995) and because we assumed that many of the women had gone back and forth to their country of origin. This was later confirmed in the discussions.
4. The persons who took this leading position were distinctive in terms of their age or national origin (for instance, an African American woman from Belize) or higher educational level. While leaders emerged in the Latina and Chinese groups for similar reasons, their role was limited (they dominated by speaking more, for instance) and they did not consolidate agreement on particular points.
5. Kellert's initial surveys of attitudes toward wildlife (1979) identified nine attitudes—the naturalistic, ecologistic, humanistic, moralistic, scientistic, aesthetic, utilitarian-dominionistic, negativistic, and neutralistic. Of these, the humanistic, moralistic, utilitarian, and neutralistic attitudes were found to be most common in a diverse population of Americans (Kellert and Berry, 1980). These findings demonstrated people's conflicting perceptions of animals as well as gender differences in attitudes, with women more likely to

exhibit humanistic, moralistic, and aesthetic attitudes toward animals. Since then, societal values toward animals have changed (with the ascendance of the animal rights movement, for instance), and Kellert (1993, 59–60) has modified his typology accordingly, by combining the ecologistic and scientistic attitudes, by recognizing a symbolic attitude, and by differentiating the utilitarian from the dominionistic attitude. He also added a "biophilia" attitude, which is based on the belief that "[t]he conservation of nature is rationalized, not just in terms of its material and commodity benefits but, far more significantly, for the increased likelihood of fulfilling a variety of emotional, cognitive, and spiritual needs in the human animal."

6. The historical antecedents of this practice—namely, slavery and deprivation—were duly noted by the African American women.
7. A third of all participants (larger among the Filipinas, Chinese, and Chicanas) had raised fish in a home aquarium, and the Chinese women in particular discussed fish-keeping issues extensively, mainly in terms of the space fish need to thrive. However, their knowledge was limited to home fish-keeping practices and did not extend to larger-scale marine environments. For instance, when asked what to do about marine animals that were weakened or dying on account of El Niño, one Chinese participant declared: "Humans should take responsibility. One reason is that some of [the injured animals] can be helped. And the other reason [is] if we leave them [to die], they could cause health problems." Clearly the experience of fish-keeping—and of having dead fish "fouling" the aquarium—had informed this woman's view.

References

Basch, C. E. 1987. Focus group interview: An underutilized research technique for improving theory and practice in health education. *Health Education Quarterly* 14 (4): 411–48.

Bedford, T., and J. Burgess. 2001. The focus group experience. In *Qualitative methodologies for geographers: Issues and debates*, ed. M. Limb and C. Dwyer, 121–35. London: Arnold.

Bjerke, T., T. Ødegårdstuen, and B. Kaltenborn. 1998. Attitudes toward animals among Norwegian adolescents. *Anthrozoös* 11 (2): 79–86.

Bright, A. D., J. Lipscomb, and L. Sikorowski. 1997. A cognitive analysis of intergroup attitudes of state wildlife agency personnel and wildlife rehabilitators. *Human Dimensions of Wildlife* 2 (3): 47–67.

Burgess, J., M. Limb, and C. Harrison. 1988a. Exploring environmental values through the medium of small groups: 1. Theory and practice. *Environment and Planning A* 20: 309–26.

———. 1988b. Exploring environmental values through the medium of small groups: 2. Illustrations of a group at work. *Environment and Planning A* 20: 457–76.

Cameron J. 2000. Focussing on the focus group. In *Qualitative research methods in human geography*, ed. I. Hay, 83–102. Melbourne: Oxford University Press.

Caro, V., and A. Ewert. 1995. The influence of acculturation on environmental concerns: An exploratory study. *Journal of Environmental Education* 26: 13–21.

Driscoll, J. W. 1987. Attitudes toward animal use. *Anthrozoös* 5 (1): 32–39.

———. 1992. Attitudes toward animals: Species ratings. *Society and Animals* 3 (2): 139–50.

Duda, M., S. J. Bissell, and K. C. Young, eds. and comps. 1998. *Wildlife and the American mind: Public opinion on and attitudes toward fish and wildlife management*. Harrisonburg, Virginia: Responsive Management.

Dunlap, R. E., and K. D. Van Liere. 1978. The "new environmental paradigm." *Journal of Environmental Education* 9 (4): 10–19.

Ewart, A. W., D. J. Chavez, and A. W. Magill, eds. 1993. *Culture, conflict, and communication in the wildland-urban interface.* Colorado: Westview Press.

Goss, J. 1996. Focus groups as alternative research practice: Experience with transmigrants in Indonesia. *Area* 28 (2): 115–123.

Herzog, H. A., and L. B. Dorr. 2000. Electronically available surveys of attitudes toward animals, *Society & Animals* 8 (2): 183–90.

Herzog, H. A., N. S. Betchart, and R. B. Pittman. 1991. Gender, sex role orientation, and attitudes toward animals. *Anthrozoös* 4 (3): 184–91.

Hunt, K., and R. Ditton. 2001. Perceived benefits of recreational fishing to Hispanic-American and Anglo anglers. *Human Dimensions of Wildlife* 6 (2): 153–72.

Infield, M. 2001. Cultural values: a forgotten strategy for building community support for protected areas in Africa. *Conservation Biology* 15 (3): 800–802.

Kellert, S. R. 1979. *Public attitudes toward critical wildlife and natural habitat issues. Phase I.* U.S. Department of the Interior and U.S. Fish and Wildlife Service. Washington, D.C.: Government Printing Office.

———. 1987. Attitudes, knowledge and behaviors as affected by gender. *Wildlife Society Bulletin* 15 (3): 363–71.

———. 1993. The biological basis for human values of nature. In *The biophilia hypothesis*, ed. S. R. Kellert and E. O. Wilson. Covelo: Island Press.

———. 1999. *American perceptions of marine mammals and their management.* Washington, D.C.: The Humane Society of the United States.

Kellert, S. R., and J. K. Berry. 1980. *Activities of the American public relating to animals. Phase II.* U.S. Department of the Interior and U.S. Fish and Wildlife Service. Washington, D.C.: Government Printing Office.

Kellert, S. R., J. P. Gibbs, and T. J. Wohlegenant. 1995. Canadian perceptions of commercial fisheries management and marine mammal conservation in the Northwest Atlantic coast. *Anthrozoös* 8 (1): 20–30.

Krueger, R. 1994. Focus groups: a practical guide for applied research. Thousand Oaks, Calif.: Sage Publications.

Lassiter, U. 2000. In this nature: Culture, place, and attitudes toward marine animals. Ph.D. diss., Department of Geography, University of Southern California.

Lunt, P., and S. Livingstone. 1996. Rethinking the focus group in media and communications research. *Journal of Communication.* 46 (2): 79–98.

Miller, K., and T. McGee. 2001. Toward incorporating human dimensions information into wildlife management decision-making. *Human Dimensions of Wildlife* 6 (3): 205–21.

Minnis, D. L., R. H. Holsman, L. Grice, and R. B. Payton. 1997. Focus groups as a human dimensions research tool: Three

illustrations of their use. *Human Dimensions of Wildlife* 2 (4): 40–49.

Murdock, S. H., D. K. Loomis, R. B. Ditton, and M. N. Hoque. 1996. The implications of demographic change for recreational fisheries management in the United States. *Human Dimensions of Wildlife* 1 (4): 14–37.

Philo, C., and C. Wilbert, eds. 2000. *Animal spaces, beastly places: New geographies of human-animal relations.* London: Routledge.

Pifer, L., Shimizu, K., and R. Pifer. 1994. Public attitudes toward animal research: Some international comparisons. *Society and Animals* 2 (2): 95–113.

Wolch, J., A. Brownlow, and U. Lassiter. 2000. Constructing the animal worlds of inner-city Los Angeles. In *Animal spaces, beastly places: New geographies of human-animal relations,* ed. C. Philo and C. Wilbert, 139–61. New York: Routledge.

Wolch, J., and J. Emel, eds. 1998. *Animal geographies: Place, politics, and identity in the nature-culture borderlands.* New York: Verso.

Varieties of Ethnic Identity and Landscape among Italian Immigrants in Northern California

Jennifer J. Helzer
California State University, Stanislaus

Abstract: From the 1850s to the 1930s, immigrants of northern Italian heritage settled throughout Northern California. These individuals and families coalesced in urban neighborhoods and rural outposts and became the predominant foreign-born group in a number of cities and towns in the region. As miners, stonemasons, storekeepers, boardinghouse operators, and laborers they played an important role in creating the region's complex cultural landscape. This paper compares and contrasts the expression of Italian ethnic identity in two Northern California towns. The case studies demonstrate how ethnic landscapes can vary depending on immigrant origins, time of arrival, local economic opportunities, and relations with the host community. The economic and social conditions that shaped—and continue to reshape—the distinctive ethnic landscapes of these two towns have broader implications for society at large.

Introduction

California has long been recognized as a destination for newcomers from all over the earth, a global meeting ground. In fact, many look to California to get a glimpse of what living in a "global village" will be like. But the phenomenon of immigrants from far-flung homelands remaking the character of communities and creating new regional identities is nothing new. One has only to look back to the peopling of the state since the gold rush era. The northern portion of the state was and continues to be a major immigrant-receiving region and therefore provides an excellent laboratory for the study of immigration, settlement, and ethnicity.

While much scholarly attention has focused on the cultural changes brought about by California's booming Latino and Asian populations, lesser-known immigrant groups have also contributed a great deal to California's complex ethnic landscape. This paper focuses on the spatial expressions of heritage resulting from

Italian immigration and settlement between 1850 and 1930 in two Northern California communities. The main objective of this study is to facilitate an understanding of how Italian immigrants, responding to unique opportunities and constraints, shaped life and landscape in Northern California. Before presenting the vignettes that form the core of this study, however, some background on geographic approaches to studying ethnic landscapes is necessary.

Landscape Study and Ethnic Identity

Landscape study has emerged as central to the analysis of social history and exploration of ethnic identity in America. Of particular interest to cultural geographers is the way in which visible changes to the landscape both reflect and act back upon ethnic identities. Until fairly recently, ethnic "signatures" in the landscape were regarded as innocent imprints of traditional life frozen in time. Such things as vernacular architecture, traditional agricultural practices, and ethnic storefronts were seen as quaint reminders of ways of life long since or soon to be assimilated.

In recent years, geographers have come to see the built environment as a contested landscape, the product of relations among competing groups rather than the product of a unified culture (Groth 1997, 6–8). In this view, multiple, often competing expressions and meanings may be embedded in a single landscape, reflecting the relative power of groups to mold behavior by creating spaces that signify and reproduce social norms. Thus landscapes are "both systems of meaning and systems of social reproduction" (Mitchell 2000, 100). The built environment, argues Dolores Hayden (1997), is just as important as political struggle in understanding how economic production is tied to social reproduction.

Immigrant settlement geographies and landscapes are complex and have implications beyond particular ethnic groups to society at large. They are products of a group's particular economic niche, time of arrival, relations with the host society, and interrelations among members of the immigrant group, among other factors (Wright and Ellis 2000). Any ethnic landscape is thus the product of a variety of social and economic processes over time—including labor. "Through labor," argues Don Mitchell (2000, 102–3), "we both create and come to know the worlds we

make." Yet, as he shows, the "work of landscape" (i.e., the labor that goes into shaping the landscape) is often hidden or neutralized.

It is important to remember that how landscapes are used to establish identity, articulate social relations, and derive cultural meaning is always a multi-scale process, impacted by events and circumstances at many levels. California's evolving nineteenth- and early twentieth-century economy provided particular niches for immigrant labor and entrepreneurial activities. The vignettes in this study explore the economic and social conditions that helped shape (and continue to reshape) distinctly different ethnic landscapes associated with Italian settlement.

Italian Immigration and Settlement History in Northern California

Most studies of Italian Americans have tended to focus on the urban experience of southern Italians on the East Coast. By contrast, Italian settlement in rural and small-town America has received little treatment, and even fewer studies document Italian immigrant geographies in the West (Vecoli 1987; Velikonja 1987; Pozzetta 1989, 73) or in California (Cinel 1982; Sensi-Isolani and Martinelli 1993; Lothrop 2000). Recent studies of Italian migration and settlement, however, suggest that closer attention be paid to the contributions of nineteenth- and early twentieth-century immigrant groups in the West and especially in California. While much has been made of the state's early, mission-era colonizers and gold rush pioneers, far less is known about the impact of immigrant groups after the initial gold craze.

The many regions of Italy did not contribute equally to the immigrant flows to Northern California. An investigation of immigrant source areas reveals how, to varying degrees, political, economic, and cultural circumstances played a role in determining which regions of Italy contributed to Northern California immigrant flows (Helzer 1998). In marked contrast to most American cities, where southern Italians formed the bulk of subsequent immigrants, Italians in Northern California came primarily from northern Italy, and even within northern Italy, particular subregions contributed disproportionately (Table 1). Major zones of immigration include the regions of Liguria, Toscana, and Lombardia; the alpine areas of Piemonte; the Veneto; and

Switzerland's Italian-speaking canton, Ticino. Additionally, a cluster of villages in the Sila Mountains of Calabria represents a rare southern immigrant source area. Despite stereotypes, Italian immigrants destined for Northern California were not an undifferentiated mass of impoverished villagers and peasants; they had strong regional loyalties to their homelands and possessed a variety of skills and experiences that would later help shape Northern California landscape and identity.

Table 1.—Regional Origins of Northern California Italians

Region	Number of Individuals (N=1437)	Percentage
Toscana	327	22.8
Piemonte	222	15.4
Lombardia	221	15.4
Liguria	193	13.4
Veneto	145	10.1
Calabria	125	8.7
Sicilia	72	5.0
Canton Ticino	40	2.8
Emilia-Romagna	25	1.7
South America	15	1.0
Other	52	3.6
Northern Italy and Ticino	1203	83.7
Mezzogiorno and Sicily	219	15.2

Sources: Compiled from naturalization records and petitions for naturalization of Italian immigrants in Amador, Mendocino, Siskiyou, and Sonoma counties, and tombstone epitaphs from cemeteries in the Northern California towns of Jackson, Sutter Creek, Fort Bragg, Bodega Bay, Occidental, Sebastopol, Petaluma, McCloud, Mt. Shasta City, Weed, and Colma.

Italians began arriving in California in the 1850s. The earliest official state census (1852) indicates that only 228 Italians resided in the state at this time, although other studies estimate the total was as high as 700 (Palmer 1965, 107). The number of foreign-born Italians grew modestly during the next two decades, but it was not until the 1890s that they became numerically significant. The first three decades of the twentieth century saw the greatest expansion of the Italian community in California. Numerically, Italians began to surpass other foreign-born groups (such as Germans, Irish, and Chinese), particularly along the

coastal regions north and south of San Francisco, the highland valleys in the north of the state, the foothill regions of the Sierra Nevada, and areas in and around the San Joaquin Valley. The northern region of the Central Valley, favored by Germans and later by Japanese immigrants, was for the most part passed over by Italian settlement (Figure 1). By 1924, San Francisco had the nation's sixth largest Italian "colony," and according to the 1930

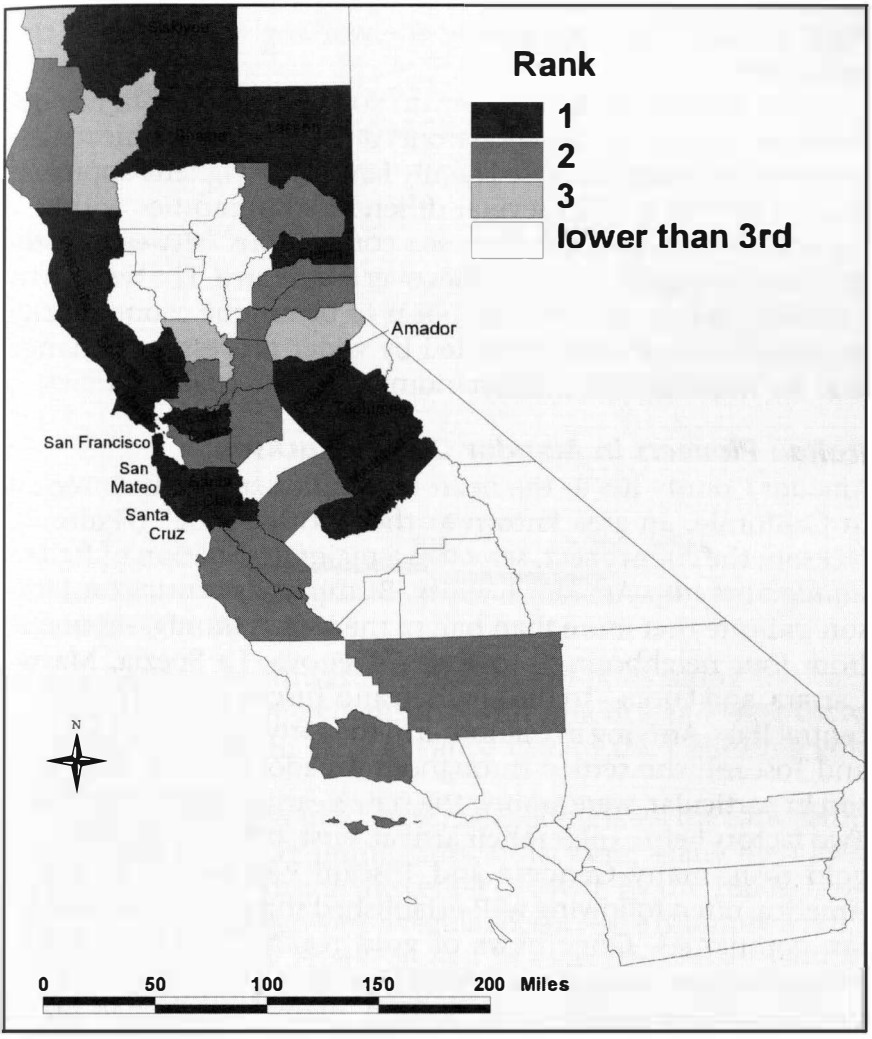

Figure 1.—Rank of number of Italians compared to other foreign-born populations in California counties, 1920. Source: U.S. Census of Population, Bureau of the Census, 1920.

coastal regions north and south of San Francisco, the highland valleys in the north of the state, the foothill regions of the Sierra Nevada, and areas in and around the San Joaquin Valley. The northern region of the Central Valley, favored by Germans and later by Japanese immigrants, was for the most part passed over by Italian settlement (Figure 1). By 1924, San Francisco had the nation's sixth largest Italian "colony," and according to the 1930

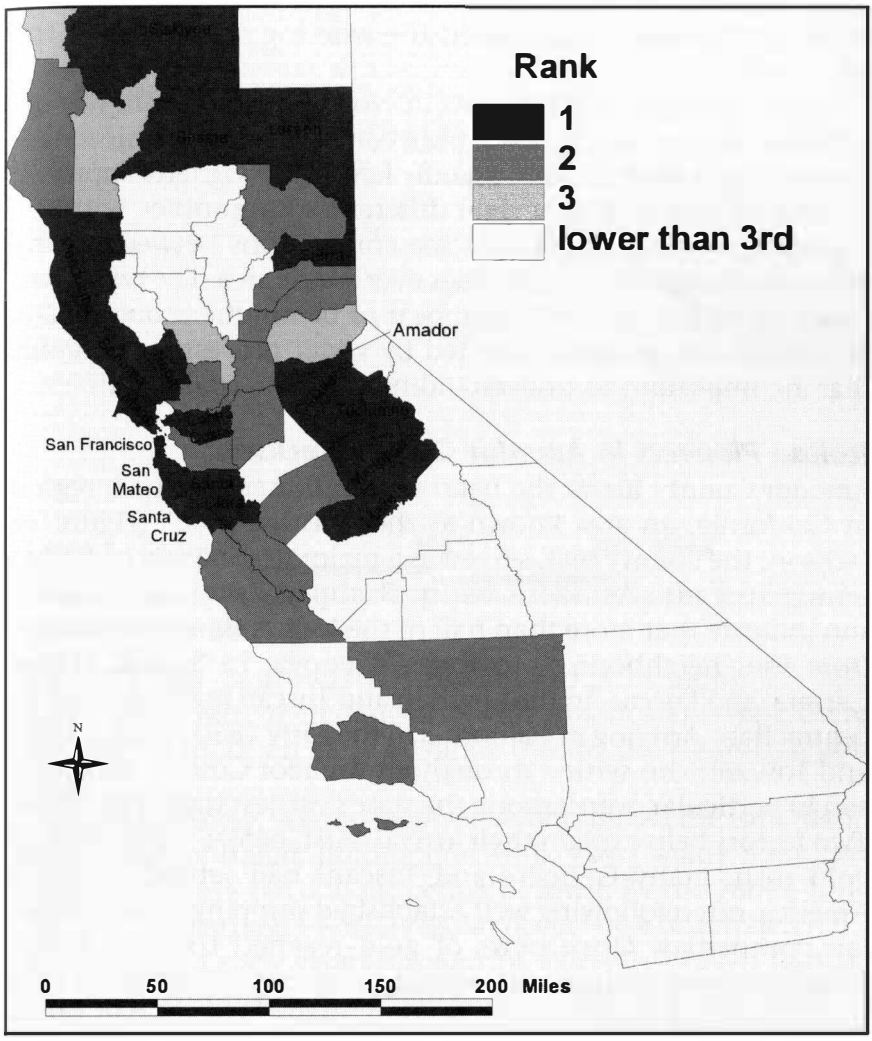

Figure 1.—Rank of number of Italians compared to other foreign-born populations in California counties, 1920. Source: U.S. Census of Population, Bureau of the Census, 1920.

census, Italy was the leading country of origin among the populations of 26 of the state's 58 counties.

Case Studies

The social histories that follow illustrate two very different types of ethnic working landscapes, each the result of a distinct set of opportunities and constraints. Differential power relations, levels of alienation, and degrees of acceptance in each community made for different outcomes in the working landscapes of the two towns.

Italian immigrant settlement in Northern California has occurred at many scales, ranging from compact urban ethnic neighborhoods to widely dispersed family farms. The vignette approach enables one to look at several different communities within a regional framework and thus see connections between vastly different immigrant communities over a wide area. The two towns I studied—while they might appear to be unique economically or socially—were both impacted by wider processes of change that are important to understanding their internal dynamics.

Italian Pioneers in Amador County: Jackson

Amador County lies at the heart of the former gold rush region in California, an area known as the "mother lode" (Figure 2). Jackson, the county seat, served as a major destination of Italian immigrants into Amador County. Birthplace statistics for Jackson indicate that more than half of the Italian immigrants came from four neighboring provinces—Genova, La Spezia, Massa-Carrara, and Lucca—in the Ligurian and Tuscan regions of north-central Italy. Arriving in California in the early 1850s, the Genoese and Toscani who settled throughout Amador County, and Jackson in particular, were among the state's earliest Italian pioneers. Two factors help explain their arrival. First, before the California gold rush, many Genoese and Toscani had settled in South America, often following well-established shipping routes of Italian companies. Once news of gold reached them in South America, many dashed northward by ship to try their luck in the foothills of the mother lode. Second, many Toscani had previous experience with international migration. The highly mobile Toscani were familiar with Northern California through the shipping trade, particularly through the transport of marble from

Figure 2.—The study area.

Massa-Carrara (northwestern Toscana) to ports along the West Coast. Many were merchants in South America and were therefore able to make an early advance toward the California gold fields.

Not surprisingly, young single males dominated the early settlement phase of Italian immigrants. In Jackson, many men lived in mining camps outside the center of town. By the 1860s, however, Italian marriages were a regular occurrence (Campbell n.d.), indicating the early establishment of extended Italian families and the beginning of an Italian neighborhood—"Little Italy"—south of the center of Jackson. As more immigrants married or sent for families, changes in the economic structure of the Italian community began to take place. For example, Italians in Jackson, with the aid of extended families, were able to turn toward

lucrative farming and mercantile ventures, which allowed some to weather the decline in mining profits and take up permanent residence. With these changes, an Italian cultural landscape began to take shape.

Italian immigrants arrived with a variety of skills, such as tailoring, stonecutting, milling, and blacksmithing, which allowed them to advance quickly into the service sector of the rapidly growing Jackson economy. After the initial gold craze, the newly emerging economy of Jackson provided opportunities for women to contribute to the family wage pool through family-operated businesses. Women migrants, with backgrounds and skills in shopkeeping, cottage manufacturing, and artisan and agricultural traditions, helped to transform the local economy and increase their family's income (di Leonardo 1984, 52).

While a handful of Italian pioneers were among the first on the gold rush scene, Chinese, English, and Germans were the most numerically significant foreign-born groups throughout the late nineteenth century. Yet even though the majority of Italian immigrants arrived later than other foreign-born groups, the frontier conditions of mother lode towns helped Italians create a distinct landscape. Spatial clustering in Jackson's Little Italy, especially among Italian businesses that occupied the Water Street District, helped create an ethnic enclave within a typical mining town. The successes of early Italian entrepreneurs—as hotel and saloon operators, merchants, and grocers—bred security and confidence and led others to emulate their example. As the focal point of the community, the Water Street District offered Italians the opportunity to shop and converse with people who spoke the same dialect and who often shared common (village or provincial) roots in Italy.

Although Jackson attracted heterogeneous migrant streams from various northern Italian source regions, the tendency of the new immigrants to cluster and their early economic successes created a spatial solidarity that was later reinforced by intermarriage and by continued immigrant flows. Within the frontier landscape of Jackson, Italians formed distinct social spaces that encouraged community building and long-term settlement. In many instances, through selecting or changing occupations, Italians became members of the business elite, which helped them sustain permanent residence even as other groups left the region.

Early on, Italians from Jackson held local, county, and state offices. A combination of factors helped foster their political aspirations. First, a number of them owned prosperous businesses catering to the ethnic community, and their high social standing promoted access to and interest in local politics. Second, as a consequence of their early arrival, many Italians had become U.S. citizens and were voting in elections. Finally, mutual aid organizations like the Garibaldi Society served to unite the most prominent members of the Italian community. Leadership roles in such organizations often became springboards to political office.

A visit to the town of Jackson today reveals a mining heritage, but with an Italian ethnic overlay. The prominence of businesses with Italian surnames and restaurants promoting Italian home cooking; the location and prominence of Italian markers in the local cemetery; and the public display of ethnic heritage in the form of an annual Italian Picnic demonstrates that as a group, Italians have successfully left their mark on the landscape (Figures 3 and 4).

Figure 3.—Since 1912, the annual Italian Picnic has been held at the Italian Society Park, located between the town of Jackson and nearby Sutter Creek. The first Italian Picnic was held in 1882.

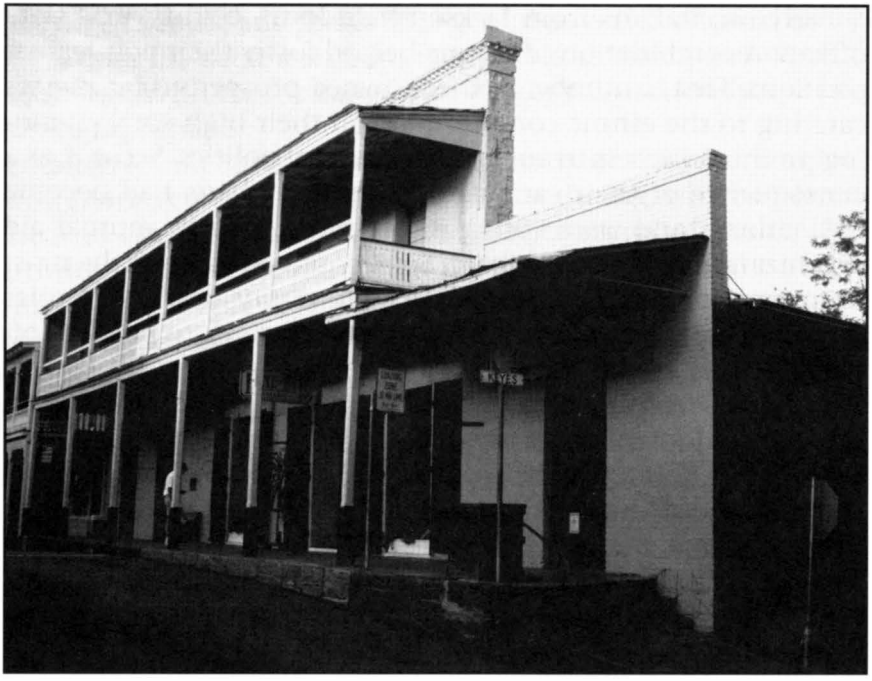

Figure 4.—Jackson's Water Street District. This area was once the center of Italian businesses, including hotel and saloon operators, merchants and grocers. Many of the stone buildings located in the former enclave evidence the talents of Italian stonemasons.

Arguably, the Italian imprint continues to be the most visible expression of Jackson's ethnic heritage, far more durable than that of other ethnic groups. One explanation is that Italians did not encounter discrimination on the level of other immigrants, most notably the Chinese, who were denied citizenship and prevented from owning land. Discriminatory legislation and racial violence against Chinese combined to cleanse the landscape of their cultural contributions. By contrast, Italians rose to elite positions in Amador County and Jackson in particular. They gained power—as local business people, landowners, and city officials—to define the landscape in Jackson, and found a community receptive to preserving and showcasing the accomplishments of their ancestors. The ethnic landscape today thus serves to celebrate Italian heritage while simultaneously minimizing—even neutralizing—the work of Chinese laborers and other ethnic groups.

Italian Working Landscapes in a Company Town: McCloud

By the early 1900s, continued migration to California and the growth of new cities led to new resource demands. The opening up of far northern regions of the state (such as Humboldt and Siskiyou counties) to logging spurred another opportunity for immigration from Italy. Social patterns were markedly different than in Amador County, however, as these newer arrivals included large numbers of southern Italians.

Responding to the labor needs of the McCloud Lumber Company in the company town of McCloud (Figure 2), Italians began arriving in Siskiyou County around the turn of the twentieth century. Given the isolated position of McCloud, its new labor needs, and the strength of connections between McCloud and two villages in Italy, it seems likely that some labor conscription for the lumber company occurred. Naturalization records and interviews with members of the community indicate a loose form of labor recruitment was indeed in place. The Italian colonies that grew up in this lumbering community drew immigrants from two new source villages: Cavaso, in the northeastern region of Veneto, and Castelsilano, in the southern Italian region of Calabria. These new migrations—of Veneti and Calabrese—reflect changes in the pattern of large-scale emigration from Italy, which shifted from north-central Italy to southern source areas. The numbers of emigrants leaving the Veneto region reached their highest totals during the late 1890s and early 1900s, and emigration from Calabria increased fourfold during this time (Favero and Tassello 1978, 356, 362).

Because the Italian imprint in Siskiyou County was forged within the confines of a company town, however, there are few visible expressions of Italian ethnic heritage. There is little to suggest that McCloud had (and still has) a substantial Italian population. The local museum promotes the benevolence of the McCloud Lumber Company in creating jobs and supporting community development. Images on display of machinery, mills, and timber products celebrate the town's achievements in the lumber industry but tell little of how the landscape was produced. The museum presents McCloud as a quaint and industrious company town but overshadows the actual conditions of work and any hint of the contributions of Italian laborers. Although the

message is one of a productive landscape, little is revealed about the experiences of those whose labor helped create it. However, a trip to the local cemetery and scrutiny of the county censuses reveals that Italians dominated McCloud's labor force for many decades.

This indifference to Italian contributions to the working landscape is even more astounding given that McCloud was once the site of one of the largest labor disputes in the Pacific Coast region. The history of social relations in McCloud is not a happy one. Italians were targeted as the instigators of the strike. The governor sent in state troops to quell the protestors and the town was placed under martial law for a period of time. Newspaper accounts focused on "the Italian strikers" and called for a large-scale removal of the Italian community. The company president, John Queal, proclaimed in newspapers that he intended to employ "Americans" whenever possible and ultimately turn McCloud into an "American" rather than Italian town. Perhaps not surprisingly in view of the need for labor, few Italians were actually forced to leave McCloud, and within a few months company owners were once again encouraging new Italian immigrants—particularly those with families (thought less likely to cause trouble)—to relocate to McCloud (Roman 1993; Carmichael 1994). Census records confirm an increase in the arrival of new Italians shortly after the strike.

Today, with the exception of a few Italian street names, the landscape is devoid of symbols that evidence the community's Italian heritage (Figure 5). The street names in fact demarcate Italian labor camps and serve as reminders of efforts by the company to control movement and potential conflict by enforcing ethnic and racial separation (Figure 6). Residential clustering might seem to have promoted ethnic identity and solidarity among Italians in McCloud, as it did in Jackson. However, the degree of company control over the labor camps reveals a very different set of power relations and social interactions at work. As with all company towns, the development of McCloud was based on planning decisions of executives in the McCloud Lumber Company, to the exclusion of input from Italian and other laborers. Their residential and work spaces, commercial spaces, and social activity spaces—from company-built clubhouses and company-sponsored dances to sports teams and a library—were

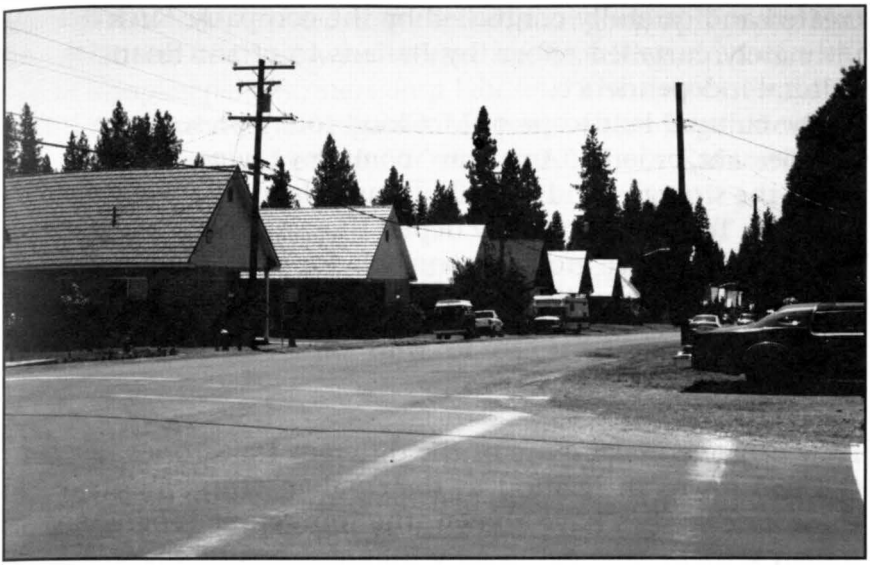

Figure 5.—Uniform housing built by the McCloud Lumber Company for its employees.

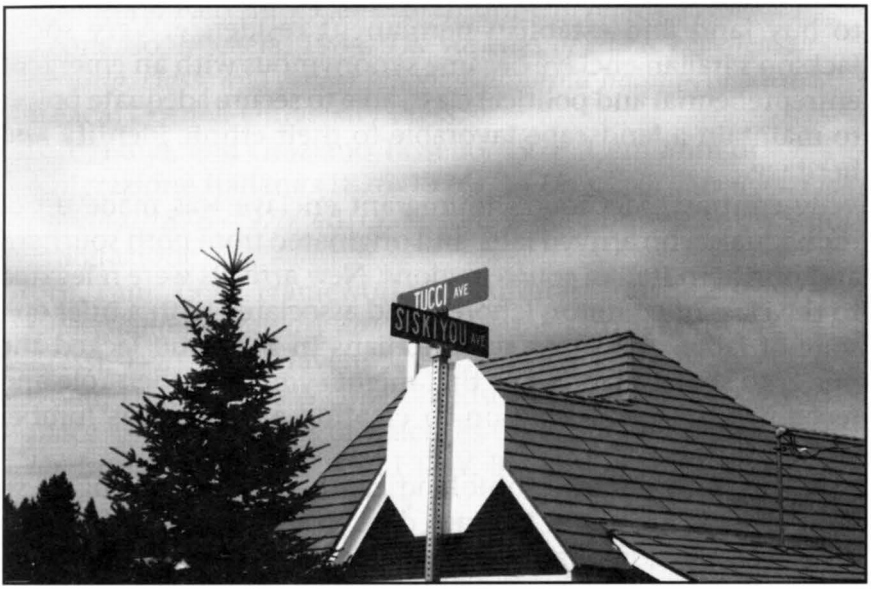

Figure 6.—Street names like "Tucci" demarcate former labor camps for Italian workers.

created and carefully controlled by the company. Such actions ultimately curtailed efforts by Italians to attain financial and cultural independence.

The cultural landscape of McCloud today presents an image of a pleasant, orderly, "American" company town—an image that belies the struggles and contributions of labor that went into its creation. To more accurately depict the working landscape and the primary ethnic group responsible for its production would require the community to confront a history of labor struggle and corporate control behind the creation of a company town.

Conclusion

How can one make sense of the different trajectories taken by the two towns in relation to their Italian ethnic heritage? As these case studies have shown, the immigrant geographies of Italian settlers were defined by different sets of circumstances and conditions, including source regions, time of arrival, social and economic backgrounds, and opportunities in the host community. In the case of Jackson, immigrants arrived relatively early from neighboring northern Italian source areas. They were able to buy land and establish permanent residence. Very soon, Jackson's Italian enclave became synonymous with an emergent entrepreneurial and political class, able to secure adequate power to maintain a landscape favorable to their ethnic identity and heritage.

By contrast, McCloud's immigrant enclave was made up of individuals who arrived later and originated from both southern and northern Italian source regions. New arrivals were relegated to the class of common laborers and associated with a brief episode of labor unrest. As such, Italians in McCloud lacked the power to shape a landscape that might symbolize their role and recognize their contribution in creating a prosperous lumber community.

As this study reveals, ethnic landscapes—revealed through residential areas, factories, heritage days, place names, or business districts—are more than mere signatures of past ways of life frozen in time. As social constructions they represent competing power relations and can be read for the way they work to solidify a particular view of ethnic identity, an identity that is continually renegotiated and redefined through the landscape. Much

still remains to be learned about immigrant geographies and the contributions of those who worked on buildings, in factories, and as shopkeepers, farmers, and laborers. The two case studies presented here may be regarded as part of the larger story of multiculturalism and ethnic identity in Northern California.

Acknowledgments

I wish to thank the editor, Judy Walton, and my two anonymous reviewers for their helpful suggestions on earlier drafts of this manuscript, and Mike Turn for his cartographic expertise.

References

Campbell, Carolyn F. n.d. The Amador County genealogical review and indexes. Unpublished materials, Amador County Library, Jackson, California.

Carmichael, Elizabeth Ann. 1994. The immigrant experience in Siskiyou County, California: 1900–1945. Master's thesis, University of Oregon.

Cinel, Dino. 1982. *From Italy to San Francisco: The immigrant experience*. Palo Alto, Calif.: Stanford University Press.

di Leonardo, Micaela. 1984. *The varieties of ethnic experience: Kinship, class, and gender among California Italian-Americans*. Ithaca: Cornell University Press.

Favero, Luigi, and Graziano Tassello. 1978. Cent'anni di emigrazione Italiana (1876–1976). In *Un secolo di emigrazione Italiana, 1876–1976*, ed. G. Rosoli, 9–60. Rome: Centro Studi Emigrazione.

Groth, Paul. 1997. Frameworks for cultural landscape study. In *Understanding ordinary landscapes*, ed. P. Groth and T. W. Bressi, 1–21. New Haven: Yale University Press.

Hayden, Dolores. 1997. Urban landscape history: The sense of place and the politics of space. In *Understanding ordinary landscapes*, ed. P. Groth and T. W. Bressi, 111–133. New Haven: Yale University Press.

Helzer, Jennifer. 1998. The Italian ethnic substrate in Northern California: Cultural transfer and regional identity. Ph.D. diss., Department of Geography, University of Texas, Austin.

Lothrop, Gloria Ricci. 2000. *Fulfilling the promise of California: An anthology of essays on the American experience in California.*

Spokane: California Italian American Task Force and the Arthur H. Clark Company.
Mitchell, Don. 2000. *Cultural geography: A critical introduction.* Oxford, UK: Blackwell.
Palmer, Hans C. 1965. Italian immigration and the development of California agriculture. Ph.D. diss., University of California, Berkeley.
Pozzetta, George E. 1989. Immigrants and ethnics: The state of Italian-American historiography. *Journal of American Ethnic History* 9 (1): 67–95.
Roman, Bonnie R. 1993. The life and death of a company town: A social history of McCloud, California. Master's thesis, California State University, Sacramento.
Sensi-Isolani, Paola A., and Phylis Cancilla Martinelli, eds. 1993. *Struggle and success: An anthology of the Italian immigrant experience in California.* New York: Center for Migration Studies.
Vecoli, Rudolph J., ed. 1987. *Italian immigrants in rural and small town America.* Staten Island, NY: American Italian Historical Association.
Velikonja, Joseph. 1987. Places, communities and regions in American Italian studies—territorial coverage. In *The melting pot and beyond: Italian Americans in the year 2000*, ed. J. Krase and W. Egelman, 37–60. Staten Island, NY: American Italian Historical Association.
Wright, Richard, and Mark Ellis. 2000. Race, region and the territorial politics of immigration in the U.S. *International Journal of Population Geography* 6 (3): 197–211.

The Deceptive Landscape: A Study in Ethnicity in Hornitos, California, 1860–1900

Toni Alexander
Louisiana State University

Abstract: Studying relict landscapes has long provided geographers with clues to reconstructing past cultures; however, a focus on the landscape alone may ultimately prove deceptive. Equally vital is an examination of the social and historical conditions under which a landscape has evolved. This paper investigates ethnic landscapes and relations in Hornitos, California, a former gold-mining community located at the southern end of the "mother lode" region. While the contemporary landscape perpetuates the town's popular historical image as a "Mexican pueblo," a study of census and property tax assessment documents allows for a much more encompassing reconstruction of the past socio-spatial environment. This case study provides geographers further insight into the complex ethnic and race relationships that have long characterized the American West.

Introduction

THE CENTRAL PLAZA of Hornitos, California, is motionless today, bordered on three sides by buildings hinting of the gold rush past, of long-gone saloons and fandango halls once filled to capacity with Mexican dance hall girls and forty-niners (Figure 1). On higher ground—overlooking the golden Sierra Nevada foothills—stands St. Catherine's Catholic Church amid the ailanthus-entangled graves of the church cemetery (Figure 2). The small, stone-buttressed church stands guard over the central plaza and sleepy streets of the community. The only interruption to the quiet afternoon is the creaking of a lone windmill, slowly turning in the breeze.

Observations of the material landscape, as in the above, may reveal much about a place but may also prove deceptive (DeLyser 1999). Relict landscapes often mask social relationships, especially those characterized by inequality (Holdsworth 1997; Schein

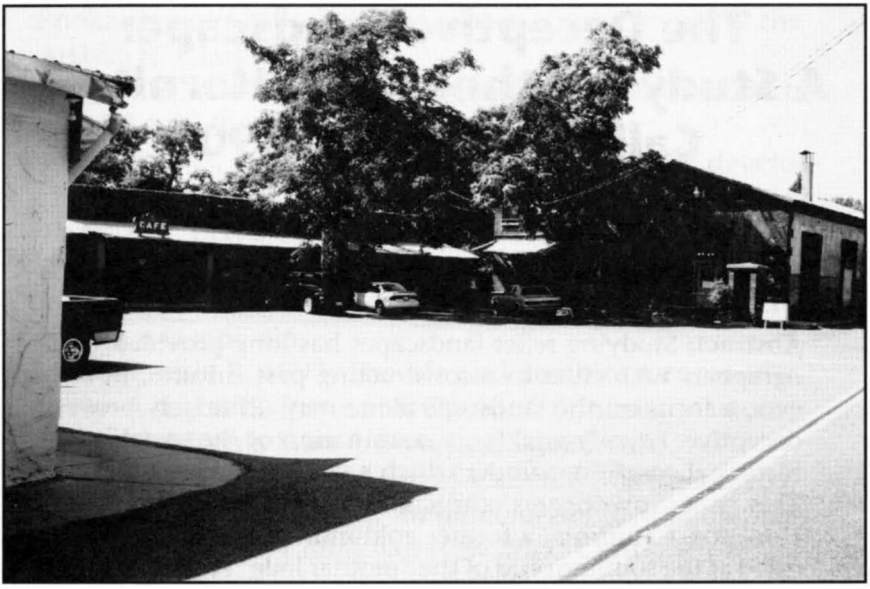

Figure 1.—The central plaza of Hornitos today.

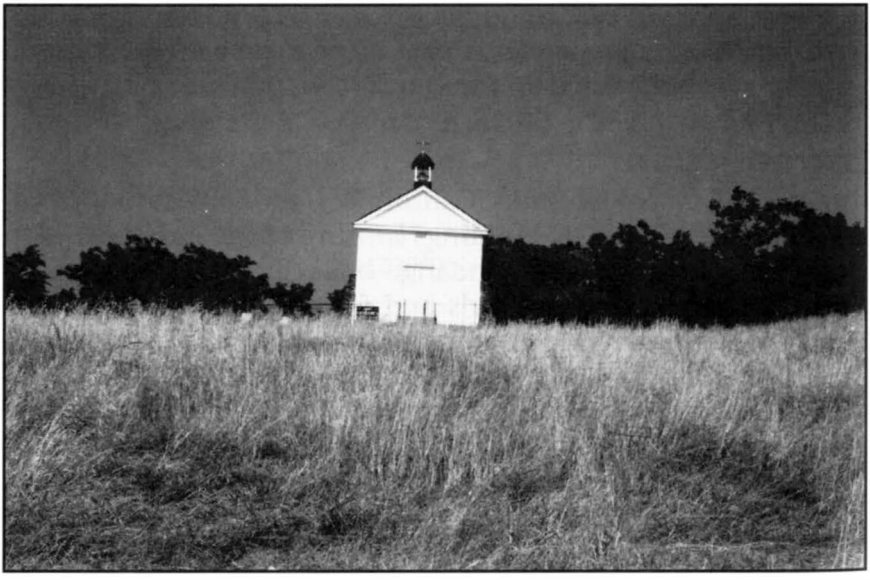

Figure 2.—St. Catherine's Catholic Church.

1997); therefore scholars must examine not only what is present and visible in the landscape but also what is absent, and must work to uncover the social circumstances—i.e., the cultural politics and hierarchies of power—behind the visible landscape.

In this paper I investigate ethnic landscapes and relations in nineteenth-century Hornitos, located at the southern end of California's "mother lode" gold-mining region (Figure 3). I show how interpretation of the relict landscape, augmented by a study of census and property assessment documents, allows for a more accurate reconstruction of past social group composition and relations than landscape study alone. Despite its long-held image as a "sleepy Mexican town" (Crosley 1959), for much of its history Hornitos was actually quite ethnically diverse. It was dominated numerically by both Mexicans and Chinese, but a look at property ownership reveals a different social hierarchy than the numbers suggest. In particular, the absence of any prop-

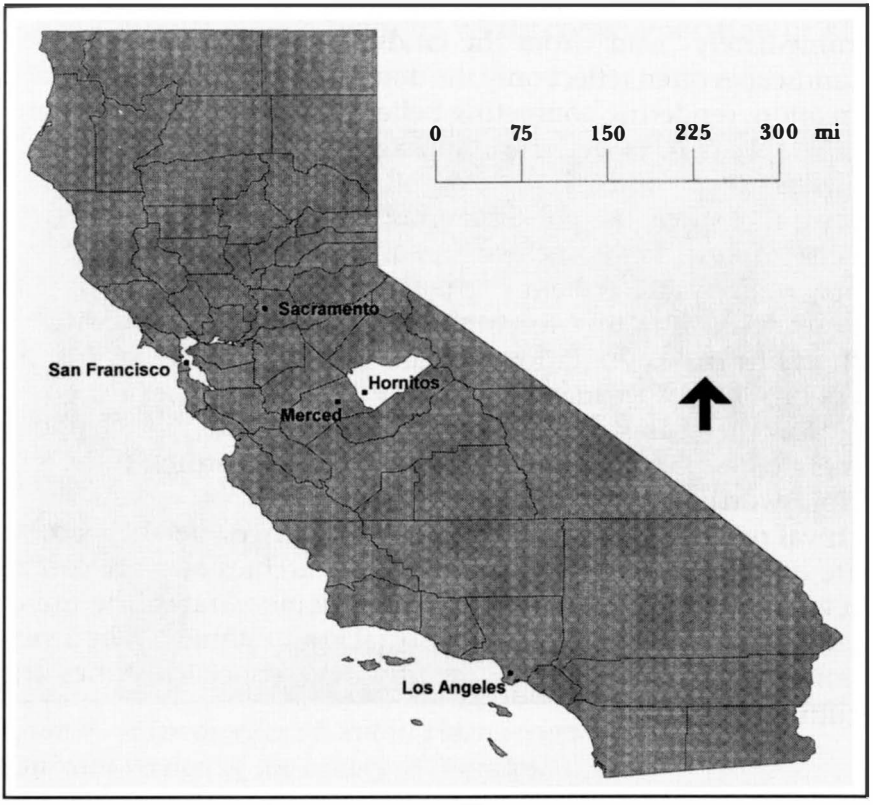

Figure 3.—Location of Hornitos, California.

erty ownership by Chinese residents reveals a power disparity that provides greater insight into the social history of nineteenth-century Hornitos than the landscape and literature suggest. By examining patterns of property and land ownership in Hornitos, this study sought to uncover the social relations of power that might be masked by the past (and present) landscape.

The Deceptive Landscape

In the past century, geographers have formalized the description and analysis of ethnic communities through cultural landscape studies. Carl Sauer's (1925) morphological approach to landscape reading—assembling the visible "association of place facts" within an area to explain its evolution—constituted much of geography from the 1920s on, but was challenged by new approaches in the 1980s and 1990s. Duncan (1980; 1990), Cosgrove (1984; 1989), and Jackson (1989), among others, showed that the social relations that shape a cultural landscape may not be immediately "read" from the landscape or its representations. Landscapes often reflect only the dominant ideology behind their creation, rendering competing belief systems invisible. Cultural geographers have become interested in how physical space is used to shape and reinforce dominant belief systems. Lacking control of space, less powerful groups often fail to leave a permanent impression upon the material world; therefore their work may not be at all evident in the landscape (Mitchell 2000). The result is a culturally "deceptive" landscape; or as Don Mitchell shows in his examination of California migrant labor history (1996), landscapes may "lie."

How then can students of landscape uncover a place's hidden hierarchies of power and social relations? According to Deryck Holdsworth (1997), cultural geographers must delve into the archival record to get a truer picture. Property ownership records are one means by which the social hierarchies of place can be revealed.[1] As the Hornitos case study demonstrates, the use of land ownership as a measure of social group status can be a very powerful and effective tool in interpreting social histories and cultural landscapes.

Hornitos, California: Whose Heritage?

As mentioned in the introduction, Hornitos has long been depicted as reminiscent of a sleepy Mexican pueblo. Writing about nineteenth-century Hornitos, which grew out of the relocation of (Sonoran) Mexican miners exiled from a nearby community, local historian Francisco Salazar (1964, 10) asserted that "only in towns such as Hornitos could a Mexican live a normal life." Looking at mid-twentieth literature on Hornitos (e.g., California State Department of Natural Resources 1948; Gold Rush Country 1957; Crosley 1959) one is overwhelmed by representations of Mexican heritage. From such depictions as well as a visual survey of the town, a casual observer might conclude that Hornitos in the late nineteenth century was homogeneously Mexican. Even today, in attempts to capitalize on a growing tourist market, the town's Mexican heritage is romantically described in literature and signs (Figure 4). Visitor attention is directed to the aging adobe ruins, central plaza, former fandango halls, and quaint Catholic church (with its yearly commemoration of All Soul's Day).

Figure 4.—Sign on edge of central plaza commemorating the dominant version of the history of Hornitos.

But how accurate is that image? A review of the few primary resources containing impressions of nineteenth-century visitors suggest Hornitos to be far more ethnically diverse. Upon his arrival in 1851, Belgian Argonaut Jean-Nicholas Perlot (1985, 95) described the frontier mining community's cosmopolitan babble of tongues: "In business, they spoke English and Spanish; in the street, still covered with brush, we heard all possible tongues spoken." Even more revealing of its ethnic diversity is the following from an anonymous visitor in the 1860s:

> Even the very signs seem to [confirm the ethnic diversity]. The stage house is the "Progresso Restaurant"; the bakery is a "panaderia"; the hotels invite in both Spanish and English; the stores in Italian as well as American and Spanish; while Sam Ting or Too Chang outrival the "lavado y planado." In the plaza Brother John, however, has it pretty much all to himself, and Manifest Destiny will, undoubtedly, prevail in the end. (Brooks 1861, 335)

An examination of federal manuscript censuses from 1860 to 1900 further discounts the tale of a primarily Mexican community. Based upon recorded nativity responses, the population of Hornitos consistently represented a wide range of ethnic origins.[2] The 1860 census shows that Hornitos was comprised of 2,027 individuals drawn from 30 U.S. states or territories and 29 foreign nations or foreign-controlled territories. While the 1870, 1880, and 1900 censuses[3] show a steadily declining population, the tendency toward ethnic plurality remains consistent. Even at its lowest population in 1900, the town's 444 inhabitants represented 20 U.S. and 17 foreign birthplaces (Bureau of the Census 1860–1900).

Among foreign-born residents, those from China and Mexico predominated from 1860 to 1880. According to census figures, Chinese residents accounted for more than 28 percent of the Hornitos population in 1860, surpassing any other single nativity group, including those under the encompassing categories of "United States" (excluding California) and "European." Mexicans made up almost 18 percent of the population in 1860, decreasing to just under 9 percent in 1880. Despite local histories that include only brief anecdotes about the Chinese, they were a persistent presence until 1900, when there was a sharp decrease

in their numbers coinciding with a dramatic decrease in all foreign-born residents, including Mexicans. Declines in the foreign-born population, however, were offset by a significant rise in the number of residents whose birthplace was reported as "California" (over 65 percent in 1900), signaling the growing presence of second-generation ethnic residents in Hornitos (Bureau of the Census 1860–1900).

As for Europeans, no single group dominated proportionately between 1860 and 1900, although the French, English, Irish, Germans, and Italians were more strongly represented than other groups. The relative percentage of each of these groups in the Hornitos population varies by census year, ranging from a high of more than 9 percent (the English in 1880), to a low of less than 1 percent (the Irish in 1900). Likewise, no single U.S. state dominated the mix of population.[4] Only when consolidated into the larger geographical categories of "European" and "U.S.-born" do numbers become significant. U.S.-born residents of Hornitos accounted for more than 20 percent of the population in 1860 and approximately 15 percent from 1870 to 1900. European-born residents had an equally strong showing, ranging from just under 17 percent of the total population in 1860 to more than 9 percent in 1900, with a peak representation of over 21 percent in 1880 (Bureau of the Census 1860–1900).

This examination of the demographics of nineteenth-century Hornitos lends credence to claims by historians that ethnic diversity has always been a defining feature of the American West (Limerick 1987; Deutsch 1992). So why hasn't this diverse ethnic background been reflected in the cultural landscape of Hornitos? Much of the answer has to do with the fact that only certain groups had the power to shape the landscape. Property ownership was a critical factor in determining this relative power (White 1991), a connection that has been amply illustrated in a number of scholarly studies (Pitt 1966; Otis 1973; Weber 1973; Prucha 1984; Gjerde 1985; Meinig 1993). In fact, the most striking observation about property ownership in Hornitos between 1860 and 1900 is its obvious uneven distribution among ethnic groups. In particular, as federal censuses and county tax assessor records illustrate,[5] there was an extreme disparity between the proportion of Chinese in the community and their level of property ownership (Tables 1 and 2). In every census from 1860 to

Table 1.—Estimated Value of Real Estate and Personal Property Owned, by Nativity, in 1860 and 1870

Value	China	Mexico	Europe	U.S.	N. Amer.[1]	S. Amer.	Calif.	Other	Unkn.
				Census Year 1860					
$0	549	353	272	339	10	12	220	16	43
$1–999	13	5	27	24	1	1	0	2	4
$1000–1999	0	1	10	13	1	0	0	0	1
$2000–2999	0	0	3	7	1	1	0	0	0
$3000–3999	0	0	2	9	0	0	0	0	1
$4000+	0	0	3	8	0	0	0	0	0
Personal property only	11	4	23	34	0	0	0	0	3
Total	573	363	340	434	13	14	220	18	52
% of total population	28.27	17.91	16.77	21.41	0.64	0.69	10.85	0.89	2.57
% of total real estate-owning population	9.42	4.35	32.61	44.20	2.17	1.45	0.00	1.45	4.35
				Census Year 1870					
$0	356	107	192	151	9	0	379	25	3
$1–999	3	5	16	19	0	0	1	1	1
$1000–1999	11	17	38	48	0	0	0	2	1
$2000–2999	0	1	1	9	0	0	0	0	1
$3000–3999	0	0	5	6	0	0	0	0	0
$4000+	0	0	3	2	0	0	0	0	1
Personal property only	0	0	4	1	0	0	0	0	0
Total	370	130	259	236	9	0	380	28	7
% of total population	26.07	9.16	18.25	16.63	0.63	0.00	26.85	1.90	0.49
% of total real estate-owning population	7.29	11.98	32.81	43.75	0.00	0.00	0.52	1.56	2.08

Source: Summary statistics derived from 1860 and 1870 Decennial Federal Manuscript Censuses.
Note:
[1]North American nativity refers to Canada and Central America only, since U.S. and Mexican nativity are recorded separately.

1880, the gap between the percentage of the population that was Chinese and the percentage of property that was Chinese-owned was at least 17 percent. Despite their numbers, therefore, the Chinese occupied a place at the bottom of the Hornitos social hierarchy.

Table 2.—Town Lot Owners as Percentage of Total Population and Percentage of Total Owners by Nativity in 1880, 1890, and 1900

	1880		1890[1]	1900	
	% of Total Population	% of Total Owners	% of Total Owners	% of Total Population	% of Total Owners
China	17.00	0.00	1.89	2.93	0.00
Mexico	8.56	21.43	10.38	3.83	3.42
Europe	21.56	40.82	50.00	9.46	52.14
U.S.	15.56	23.47	24.53	15.54	17.95
N. Amer.[2]	1.56	1.02	1.89	1.80	0.00
S. Amer.	0.22	0.00	1.89	0.68	4.27
California	35.22	0.00	0.00	65.32	2.56
Other/Unkn./ Organization	0.33	13.26	0.94	0.45	19.65

Source: Summary statistics derived from the Mariposa County Tax Assessor's Records, 1880–1900 and the Decennial Federal Manuscript Census, 1860–1880, 1900.
Notes:
[1]No record of the 1890 federal manuscript census exists; therefore nativity was cross-referenced from previous and subsequent census years.
[2]North American nativity refers to Canada and Central America only, since U.S. and Mexican nativity are recorded separately.

Property Ownership and Occupational Status

Chinese

Hornitos was not unusual, given the larger context of a long history of institutionalized discrimination against Chinese immigrants in the U.S. It began even before the arrival of large numbers of Chinese in the mid-nineteenth century. By the late nineteenth century, legislation aimed at disadvantaging Chinese immigrants became common as greater numbers of Chinese arrived on U.S. shores. In 1850, the California legislature passed the Foreign Miners Tax Act, which imposed a $20 tax on any noncitizen gold miner. Although initially intended to restrict the prospecting of gold by Mexican residents of California, its amended version in 1852 was more directly targeted at Chinese miners (McClain and Wu 1991; Takaki 1993).

The tide of Sinophobic legislation continued to grow throughout the nineteenth century, culminating in measures of overt

exclusion. The ultimate blow to Chinese immigrants came in the form of the Chinese Exclusion Act of 1882, which completely restricted the immigration of Chinese laborers for a period of ten years (Chan 1991). An additional strike against the Chinese was the Alien Land Act of 1887. Like earlier acts (in 1841 and 1862), this legislation aimed to prevent Chinese from acquiring real estate. Ownership of real estate was restricted to U.S. citizens, by birth or naturalization, and residents who had declared an intent to become citizens (*Alien Land Act of 1887*, 467–68). The Act had a particular impact upon Chinese immigrants since they had no possibility of either declaring their intent to become citizens or of naturalizing.[6] Without the possibility of acquiring property—in a country where land ownership had come to represent economic and political empowerment—Chinese in the U.S. had little hope of finding a place for themselves.[7]

These legal restrictions found their geographical expression in places such as Hornitos. In the period 1860–80, Chinese residents of Hornitos generally sustained themselves through ties to the mining industry. In relatively few cases on the 1860 census did Chinese males report holding occupations other than "miner," which at that time meant low-paid quartz miners affiliated with one of the large-scale quartz mining companies in the surrounding area. Previously many Chinese had been placer miners, working on their own as independent prospectors on small claims or on cast-away tailings. But placer resources had been largely exhausted by 1860 and more expensive forms of mining were required for gold extraction from quartz mines. In their transition from placer to quartz miners, the Chinese had less control over the land they worked and instead merely provided a service to larger mining companies. Other typical Chinese occupations common in the 1860s and 1870s, such as "laborers," "servants," and "prostitutes," were of this same type of unskilled service (Bureau of the Census 1860–80).

Occupying the lower socioeconomic class levels would have further marginalized the Chinese population in Hornitos. David Sibley (1995) explains this as a reflection of the manner in which certain groups of people were historically regarded as a potentially "polluting" component of society. To the rest of the Hornitos population, the Chinese constituted not only a different race but also the working class. Tax assessment records from 1880 indicate that among the businesses conducted by Chinese

proprietors, "houses of ill-fame" appear to be the most common (Mariposa County Tax Assessor's Office 1880).

Also notable in 1880 was the continual assessment of Chinese business proprietors for improvements to their property without similar assessments for real estate ownership. This indicates that the Chinese were renting land and buildings, despite the fact that there was not yet a federal ban on the sale of property to Chinese (the Alien Land Act was passed in 1887). Given that the purchase of such properties would certainly make a good investment, it might be assumed that either there was a reluctance on the part of the community to sell property to the Chinese or that the Chinese were so marginalized that they had no desire to invest money in the community.

Mexican

An examination of the census real estate records and professions occupied by residents of Mexican nativity reveals that in the same period (1860–80), Mexican residents of Hornitos owned increasingly larger proportions of property relative to their population size. In 1860, Mexican-born residents comprised almost 18 percent of the total population but accounted for only about 4 percent of those owning real estate. By 1870, the disparity seems to have reversed: Mexicans made up slightly more than 9 percent of the community but represented almost 12 percent of real estate owners. However, the relative value of their declared property was quite low. All but one owner in each census enumeration declared no more than $1,000 of real estate (Bureau of the Census 1860–80). After 1880, the percentage of Mexicans owning land within the city limits began to decline. By 1900 it was just over 3 percent, roughly the same as the proportion of Mexicans in the Hornitos population—just under 4 percent (Bureau of the Census 1880, 1900; Mariposa County Tax Assessor's Office 1880–1900).

With respect to occupations, Mexican inhabitants had more diverse professional positions than Chinese. Although mining was the most common occupation, it was also not unusual for Mexicans to hold skilled positions as tailors, silversmiths, and blacksmiths. For Mexican-born residents in farming and ranching occupations, most had acquired some land (even small holdings) by purchase or lease.

European and U.S.-born

The European and U.S.-born populations of Hornitos were characterized by the greatest occupational diversity in the latter half of the nineteenth century. Like the Chinese and Mexicans, they too were represented by substantial numbers of miners, yet they also ascended to job titles that allowed for much greater wealth accumulation and social authority than other groups. Particularly significant were those employed as skilled laborers, including brick masons, blacksmiths, cabinet makers, and shoemakers. These positions provided a trained service sector within the local economy that was supplemented by an abundance of hotel keepers and merchants. (The community of merchants became especially dominated by Italian immigrants, including, according to local histories, Domenico Ghirardelli, who later went on to fame as a San Francisco chocolatier.)

In addition to dominating the service economy of Hornitos, Europeans and U.S.-born residents also held occupations of higher social status and political control through such positions as justice of the peace, civil engineer, express agent, school teacher, and community doctor. Given the local orientation of most of these jobs, it is not surprising that residents of European and U.S. nativity owned the greatest proportion of town lot property. Land ownership was also significant among those with rural occupations, such as ranching, farming, and stock raising, that required control of large portions of land. These occupations were common among European- and U.S.-born residents.

In 1860 approximately 33 percent of real estate owners in Hornitos were of European or U.S. nativity, despite the fact that as a group they comprised only 17 percent of the population. In 1870 these figures were 44 percent and 21 percent, respectively. At the extreme high end of value was the superintendent of mines from Maine who declared $130,000 in real estate assets in 1870 (Bureau of the Census 1860, 1870). During the period 1880–1900, according to county assessor records, residents of European and U.S. nativity owned the greatest proportion of town lot property (Bureau of the Census 1880, 1900; Mariposa County Tax Assessor's Office 1880–1900).

The Post-mining Era

With the decline of the mining industry, communities in California's mother lode region began to seek other means to sustain themselves. Many turned to agriculture, stock raising, lumbering, and commerce (Paul 1947, 243). Tax assessment records for the area surrounding Hornitos show a rise in ranching and farming activities from approximately 1880 onward. Large numbers of livestock and farm implements were assessed as the community declined in population and evolved from a labor-intensive industry of gold mining to a regime of extensive land use by a few landowning individuals.

Denied the opportunity to own land either through social or legal restrictions, the Chinese had no option but to leave Hornitos to seek better livelihoods elsewhere. In fact, the changing economic environment in California in the late nineteenth century allowed the persecuted Chinese of the mother lode to find new employment elsewhere. In her historical study of the role of the Chinese in the development of California agriculture, Sucheng Chan (1986) describes the new economic opportunities for Chinese at this time in the developing agricultural counties of the Central Valley and the exploding urban center of San Francisco. These places found themselves home to many of the Chinese mining refugees who left the mother lode in droves. In the Central Valley, Chinese were able to find employment as farm laborers, farmers, truck gardeners, fishermen, and common laborers. In San Francisco the Chinese served as factory workers, merchants, laundrymen, cooks, servants, and prostitutes.

Although labor needs might appear to be similar in both greater Hornitos and the Central Valley, the type of land use must be considered. In the vicinity of Hornitos, one of the primary forms of production after the decline of mining was large-scale stock raising, which could be maintained with a limited number of non-Chinese ranch hands. Those Chinese who had held some sort of service position also undoubtedly found themselves unemployed as a consequence of the gold rush bust. In contrast, much of the newly developing agriculture in other parts of California was based on manual labor; and so too were urban occu-

pational opportunities. Certainly the low wages accepted by the Chinese provided an incentive to their hire by employers who wished to compete in regional and national markets.

The story of Hornitos is one of racial discrimination compounded by economic competition. Although almost all residents of Hornitos faced an uncertain economic future with the demise of the mining economy, those occupying the bottom rungs of the social hierarchy were subject to the harshest consequences. Prohibited from adapting to the changing economic trends of the community due to national and regional overtones of discrimination, the Chinese of Hornitos had no choice but to move elsewhere to survive.

In contrast, those of Mexican heritage tended to remain longer in the region, venturing into the rising ranching economy as hired labor and small landholders. During this transition they maintained some of their Mexican-Catholic traditions (e.g., All Souls Day commemorations) through organizations such as the Hornitos Mexican "Junta" Club (Salazar 1964). In the end, however, the European and U.S.-born population of Hornitos and their native Californian children went on to dominate the local ranching and merchant economy through their control of community space. The traveler to Hornitos in 1861 had predicted nearly correctly: at the close of the nineteenth century in the central plaza of power in Hornitos, Brother John (but also to a lesser extent Juan) pretty much stood alone.

Conclusion

Geographers cannot hope to reconstruct a complete social history by examining only the contemporary landscape. As a source of data, the material landscape may deceive scholars and lead to misinterpretations. The case of Hornitos serves as a prime example of the concealment of ethnic composition and social relations by a naturalized cultural landscape. Typically portrayed as an oasis of Mexican ethnicity in the gold fields of the Sierra Nevada foothills, Hornitos was in fact much more a place of ethnic diversity and contestation. Tremendous disparities in social authority are evident in patterns of property ownership. Despite the numerical dominance of the Chinese, they left no permanent impression upon the landscape. Mexicans, on the other hand, have found their culture deeply embedded in local histo-

ries of the town and their heritage has become naturalized in the landscape, reinforcing the "pueblo" imagery found in the literature. However, as interpreted from property ownership records, it was not Mexicans who possessed the greatest level of social authority, but residents of European and U.S. birth as a group. This group eventually came to dominate the social and economic atmosphere of the community if not the cultural landscape.

As this paper has shown, without the aid of the archival record a cultural reading of Hornitos may have depicted it as the Mexican pueblo that popular accounts have long portrayed it to be. It might have seemed as if the Chinese had never lived in Hornitos. Residents of Hornitos have chosen not to commemorate the presence of the Chinese in the community, opting instead to play up the community's Mexican heritage. Only through a reconstruction of past geographic histories from numerous sources—such as archival materials, legal documents, and historical context—can scholars gain more complete insight into past and present social relations and the development of social systems of organization.

Acknowledgments

This research was funded in part by a grant from the Robert C. West Research Fund at Louisiana State University. I would like to thank two anonymous reviewers whose helpful comments assisted in shaping the final paper. Likewise, I thank Judy Walton for her never-ending patience throughout the submission process. Finally, I thank Eric Wersel for his enduring support in obtaining photos of Hornitos.

Notes

1. The author recognizes that just as landscapes may be biased, so too may archives such as the federal census and county tax assessor documents. However, with regard to property distribution, there would seem to be little benefit derived by the dominant group in underestimating the amount of property possessed by members of subordinate groups.
2. Nativity is used here as a measure of ethnicity, as foreign residents of the community would have most likely retained (or assumed) ethnic identities.

3. The 1890 federal manuscript census has been omitted as no record of it remains today.
4. Among the states most often reported as birthplaces by Hornitos residents were New York, Missouri, Arkansas, Pennsylvania, Tennessee, and Virginia. Each state, however, accounts for only a small proportion of the population of Hornitos. The highest proportion reached was in 1860, when New York-born residents made up nearly 3 percent of the population (Bureau of the Census 1860–1900).
5. Due to changes in the information obtained in census enumerations for 1880 and 1900, I turned to an alternative source of historical land tenure information: the Mariposa County tax assessment records. By cross-referencing the property ownership information contained in these documents with that of nativity disclosures in the federal censuses, I was able to reconstruct ethnic land ownership patterns within Hornitos. Because the assessed value of all town lots is roughly the same across the entire incorporated city, the tax assessment records for these years focus on ownership of lots rather than assessed value.
6. In Mariposa County, the Clerk's Office holds a summary list of immigrants to the county who filed a "Decleration [sic] of Intention to Become a Citizen" from which Chinese names are noticeably absent.
7. The question arises as to whether the Chinese indeed desired land ownership rights. Given the limited amount of literature expressing the thoughts of nineteenth-century ethnic Chinese on this issue, my study can only examine property ownership patterns and social authority based upon accepted valuation schemes of the dominant society, namely, residents of European descent.

References

Alien Land Act of 1887. U.S. Statutes at Large. 24: 467–68.

Brooks, Henry S. 1861. Hornitos, Quartzburgh, and the Washington vein, Mariposa County. *California Mountaineer* I, 335. Quoted in Rodman Paul, *California gold: The beginning of mining in the Far West*, 112. Cambridge, Massachusetts: Harvard University Press, 1947.

California State Department of Natural Resources, Division of Mines. 1948. *Survey of building structures of the Sierran gold belt—1848–1870*, by Robert Heizer and Franklin Fenenga. Bulletin 141 (September). San Francisco: California Division of Mines.

Chan, Sucheng. 1986. *This bittersweet soil: The Chinese in California agriculture, 1860–1910*. Berkeley: University of California Press.

———. 1991. The exclusion of Chinese women, 1870–1943. In *Entry denied: Exclusion and the Chinese community in America, 1882–1943*, ed. Sucheng Chan, 94–146. Philadelphia: Temple University Press.

Cosgrove, Denis. 1984. *Social formation and symbolic landscape*. London: Croom Helm.

———. 1989. Geography is everywhere: Culture and symbolism in human landscapes. In *Horizons in human geography*, ed. Derek Gregory and Rex Walford, 118–35. Totowa, NJ: Barnes and Noble Books.

Crosley, Mary E. 1959. *Hornitos*. Universal City, California: Crosley Books.

DeLyser, Dydia. 1999. Authenticity on the ground: Engaging the past in a California ghost town. *Annals of the Association of American Geographers* 89 (4): 602–32.

Deutsch, Sara. 1992. Landscape of enclaves: Race relations in the West. In *Under an open sky: Rethinking America's Western past*, ed. William Cronon, George Miles, and Jay Gitlin, 110–31. New York: W. W. Norton & Company.

Duncan, James. 1980. The superorganic in American cultural geography. *Annals of the Association of American Geographers* 70 (2): 181–98.

———. 1990. *The city as text: The politics of landscape interpretation in the Kandyan Kingdom*. Cambridge: Cambridge University Press.

Gold rush country. 1957. Menlo Park, Calif.: Lane Publishing.

Gjerde, Jon. 1985. *From peasants to farmers: The migration from Balestrand, Norway, to the upper Middle West*. Cambridge: Cambridge University Press.

Holdsworth, Deryck. 1997. Landscapes and archives as texts. In *Understanding ordinary landscapes*, ed. Paul Groth and Todd W. Bressi, 44–55. New Haven: Yale University Press.

Jackson, Peter. 1989. *Maps of meaning: An introduction to cultural geography*. London: Unwin-Hyman.

Limerick, Patricia Nelson. 1987. *The legacy of conquest: The unbroken past of the American West*. New York: W. W. Norton & Company.

Mariposa County Tax Assessor's Office. 1860–1900. *Mariposa County property tax assessments, 1860–1900*. Mariposa Museum and History Center, Mariposa, California.

McClain, Charles J., and Laurene Wu. 1991. The Chinese contribution to the development of American law. In *Entry denied: Exclusion and the Chinese community in America, 1882–1943*, ed. Sucheng Chan, 3–24. Philadelphia: Temple University Press.

Meinig, Donald. 1993. *Continental America 1800–1867*. Vol. 2 of *The shaping of America: A geographical perspective on 500 years of history*. New Haven: Yale University Press.

Mitchell, Don. 1996. *The lie of the land: Migrant workers and the California landscape*. Minneapolis: University of Minnesota Press.

———. 2000. *Cultural geography: A critical introduction*. Oxford: Blackwell Publishers.

Otis, D. S. 1973. *The Dawes Act and the allotment of Indian lands*. Norman: University of Oklahoma Press.

Paul, Rodman. 1947. *California gold: The beginning of mining in the Far West*. Cambridge: Harvard University Press.

Perlot, Jean-Nicholas. 1985. *Gold seeker*. Trans. Helen Harding, ed. Howard Lamar. New Haven: Yale University Press.

Pitt, Leonard. 1966. *Decline of the Californios: A social history of the Spanish-speaking Californians, 1846–1890*. Berkeley and Los Angeles: University of California Press.

Prucha, Francis Paul. 1984. *The great father: The United States government and the American Indians*. Abridged ed. Lincoln: University of Nebraska.

Salazar, Francisco. 1964. *The gold of Hornitos*. Fresno, California: Saga-West Publishing.

Sauer, Carl O. 1925. The morphology of landscape. *University of California publications in geography* 2 (2): 19–53.

Schein, Richard H. 1997. The place of landscape: A conceptual framework for interpreting the American scene. *Annals of the Association of American Geographers* 87 (4): 660–80.

Sibley, David. 1995. *Geographies of exclusion: Society and difference in the West*. London: Routledge.

Takaki, Ronald. 1993. *A different mirror: A history of multicultural America*. Boston: Little, Brown & Co.

U.S. Bureau of the Census. 1860–1900. *Decennial federal manuscript census: Mariposa County, California, 1860–1900*. California State University, Stanislaus Library. Washington, D.C.: U.S. Census Bureau. Text-film.

Weber, David, ed. 1973. *Foreigners in their native land: Historical roots of the Mexican Americans*. Albuquerque: University of New Mexico Press.

White, Richard. 1991. *'It's your misfortune and none of my own': A new history of the American West*. Norman: University of Oklahoma Press.

A Coming Water Crisis in Southern California?

Philip R. Pryde
San Diego State University

Abstract: Southern Californians are about to face some tough water choices. With the implementation of the Quantification Settlement Agreement (also called the "4.4 Plan"), California will within the next fifteen years be limited to its firmly allocated 4.4 million acre-feet per year of imported water from the Colorado River. This represents a reduction of 0.8 million acre-feet annually as other states claim their previously "unused" allocations. Making up for this loss will not be easy, even with continued conservation measures. Water transfers—redistributing water from Southern California's desert agricultural districts to urban coastal districts—have received the most attention, and both the Los Angeles-based Metropolitan Water District and the San Diego County Water Authority have entered into transfer agreements with the Imperial Irrigation District. But there are major hurdles to be overcome, including environmental impacts to the Salton Sea and opposition to "fallowing" by farmers who fear adverse effects on their regional economy if they are paid to leave fields idle so that water can be transferred to needy urban districts.

Introduction

Southern California's geography is both a blessing and a curse. Its pleasant climate and rich soils have attracted millions of residents over the years, yet most of the region is semiarid or arid, with limited endogenous water sources. Early in the twentieth century, it became clear that local water supplies would be insufficient to meet the needs of the burgeoning population. Outside sources would be needed, and the Colorado River was an obvious and early candidate.

The importation of Colorado River water to Southern Californian was authorized in the 1920s by the Colorado River Compact and apportioned among the seven states through which the river or its tributaries flow (National Academy of Sciences

1968). These agreements allocate 4.4 million acre-feet (maf) of Colorado River water annually to California (referred to as its "firm allocation"). However, because Southern California needed more water and other states were not using their full allocations, California was allowed to import some of this unused water, and in recent years has been taking up to 5.2 maf.

By the year 2000, however, other states were using most or all of their allocations and insisted that California's use of the "extra" water must end. Through a legal document called the Quantification Settlement Agreement, California will, after fifteen years, be allowed to import no more than its firm 4.4 maf allocation. This would mean a loss of up to 0.8 maf of water annually, which at present is viewed as indispensable to the Southern California economy.

Some of this loss can be recovered by water conservation measures. But most of the "easy" conservation measures were instituted in response to the 1987–91 drought. Partly as a result—and perhaps surprisingly—Southern California has some of the lowest per capita water use figures in the state. To make up both the 0.8 maf loss and meet expected growth needs via conservation alone would require draconian measures that would probably be politically infeasible.

Where will a replacement supply of up to 0.8 maf of fresh water be found? The most likely answer involves a combination of new sources (such as from desalinization) and redistribution of existing allocations, combined with a continued emphasis on conservation. Redistribution is receiving the most attention at present. Both the San Diego County Water Authority and the Los Angeles-based Metropolitan Water District have signed agreements with the Imperial Irrigation District to transfer conserved water from inland Imperial County to coastal Southern California. These agreements will be examined in more detail later in this article.

A more emotional question has been posed recently: if Colorado River water is to be redistributed within Southern California to serve the coastal economies, will agricultural counties such as Imperial suffer economically? There are also key environmental considerations concerning the Salton Sea in Imperial and Riverside counties. Perhaps the most interesting question is whether

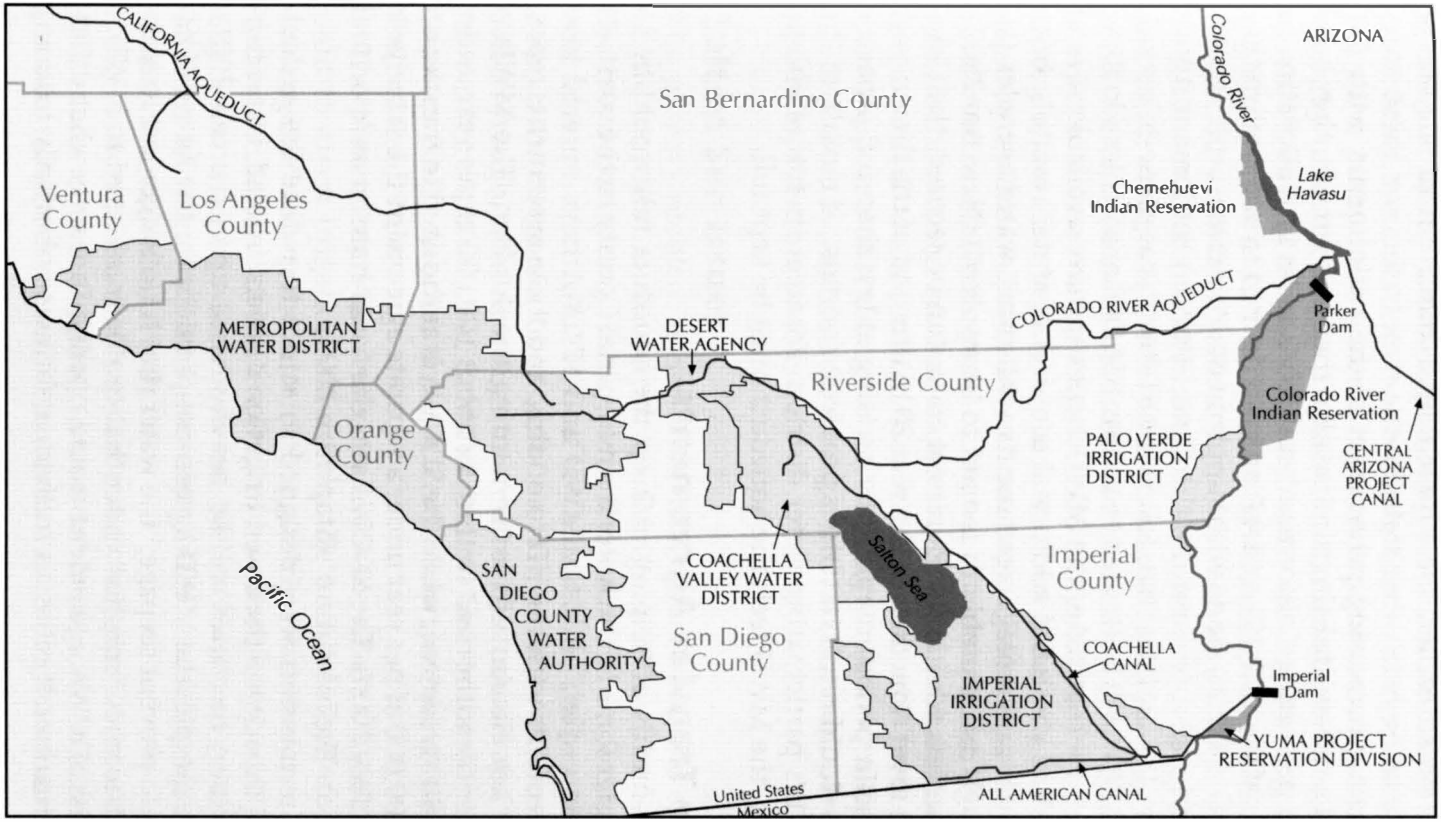

Figure 1.—Primary water agencies and transfer facilities in Southern California. Cartography by Kristen O'Grady.

As noted earlier, the supplemental allocation of 662,000 af really belongs to other states in the river basin, and these states are using increasing percentages of their allotments, with Arizona and Nevada using almost all of theirs. As a result, they have been pressuring California to scale back to its firm allocation of 4.4 maf annually. The "4.4 Plan" was devised to accomplish this.

The 4.4 Plan, along with supplemental "interim surplus guidelines," together comprise the Quantification Settlement Agreement. It mandates that, following a fifteen-year phase-in period, the MWD will be limited to its firm 550,000 af of Colorado River water. By that time, the MWD hopes to have available several hundred thousand additional acre-feet of water resulting from transfer and storage agreements with other water agencies (although many problems remain to be resolved) (Newcom 2002). But unless additional sources of water can be secured, the Colorado River Aqueduct in the year 2016 (the end of the fifteen-year phase-in period) may still be running at less than full capacity. This would result in serious problems for most, if not all, of the MWD's participating water districts. To meet its future obligations, the MWD feels the aqueduct must be kept full.

The Transfer Agreements

One means of helping to keep the aqueduct full would be to transfer some of the water from Imperial County to the coast. As noted earlier, both the MWD and SDCWA have entered into agreements with the IID to do this, and these agreements represent key elements in implementing the 4.4 Plan. The MWD is currently authorized to transfer about 100,000 af per year under a 1998 agreement, while the SDCWA is authorized to transfer up to 200,000 af per year under a separate agreement the same year (SDCWA 2000). The SDCWA sees the water transfer as "essential for San Diego's future" (Stapleton 2002).

The transfers were designed so as not to reduce the agricultural capacity of the desert irrigation districts; instead, water conservation measures will be heavily relied upon (Purcell 2001). For example, the MWD agreement provides for the lining of canals to prevent seepage;[1] the water that is no longer lost to seepage becomes "surplus" water that can be transferred to MWD.

The SDCWA agreement would operate in a somewhat different manner. It relies on individual farmers voluntarily reducing

their water use by improving on-farm practices, such as leveling their fields more accurately, installing drip irrigation, or utilizing water pump-back systems. Such techniques would conserve water by reducing amounts applied to the fields, or the volume of runoff leaving them. Additional water can be saved by making improvements to the IID canal system, which is aging and often utilizes outdated water control technologies (Purcell 2001). The IID could recover the cost of improvements through the amount it charges SDCWA for the conserved water.

All water conserved by these means would be available for transfer to urban and agricultural users in the MWD service area. Once the 4.4 Plan begins to phase in, there would be available capacity in the Colorado River Aqueduct (CRA) to transfer the conserved water. After years of heated discussions, in 1998 an agreement was signed that allows the SDCWA to transport its conserved IID water through the CRA at a reasonable price. This would appear at first glance to be a winning scenario for all stakeholders. But, as might easily be expected in the realm of water resources, there are problems.

Salton Sea Issues

The primary problem is environmental, concerning the effects of the transfers on the Salton Sea (McClurg 2001). The Salton Sea has a fascinating history, with the entire Salton Trough at one time connecting to the Gulf of California. In the postglacial period, the Colorado River has often flowed westward into the Salton Trough, creating a huge intermittent historical water body now referred to as Lake Cahuilla (Salton Sea Authority 2001; Showley 2002). At other times, it would flow southward into the Gulf of California.

The present sea was created in 1905–06, when a dike being built to divert irrigation water from the Colorado River broke, once again flooding the Salton Trough (DeBuys and Myers 1999). Today, the Salton Sea has evolved to become perhaps the most important interior water body on the Pacific Flyway, hosting millions of migratory and wintering birds annually (Shuford, Warnock, and Molina 1999).

Agriculture in the arid Imperial and Coachella valleys requires that excess water be applied to farmers' fields so as to flush out harmful salts from the soil. This excess water is deposited through

groundwater transport into the Salton Sea. In addition, unused water flowing through the many distribution canals ends up in the Sea. These two water sources are essential to maintaining the surface level of the Sea; indeed, the Sea continues to exist only because of this continuing input from the farms, which offsets about six feet of annual evaporation.

Because the Salton Sea is an interior water body, its salinity has been rising steadily (since the early twentieth century) and today exceeds that of ocean water—about 45,000 parts per million of salts, as compared to ocean water's 36,000. Every year, about 4.5 million tons of salts contained in the runoff water enter the Sea. At some point soon, the salinity will be sufficiently high to threaten the viability of fish life, which would eliminate not only an avian food supply but also an important subsistence fishery for local residents. The water transfers will speed up this process.

The U.S. Bureau of Reclamation has been the lead agency in searching for solutions to the salinity problems, issuing numerous reports during the 1990s (Cohen, Morrison, and Glenn 1999). In 1998, the Bureau proposed a menu of possible technical solutions but left many questions unanswered (Bureau of Reclamation 1998; LaRue 1998). The Bureau's recommended mitigation has always involved variants of desalinization systems, usually employing large diked-off ponds to permit evaporation of some of the Sea's water. But all variants of desalinization ponds produce huge quantities of salt that will need to be either stabilized or transported somewhere for disposal. Environmental effects were examined in depth in an environmental impact report in 2000, but again most reviewers felt that serious questions remained (Tetra Tech 2000).

The ongoing problem of increasing salinity exists independently of the proposed transfers. Similarly, another independent and ongoing problem is periodic massive die-offs of both fish and aquatic birds (Niiler 1998; Marcum 1999). High salinity is not the primary cause of these die-offs, although it may be a stress factor. The fish (mainly tilapia) tend to die off in summer when high temperatures lower oxygen content in the Sea. The bird die-offs result from diseases such as avian cholera and avian botulism, the causes of which are still poorly understood. Eutrophication from agricultural fertilizers and other nutrients

may be a factor but probably is not the root cause. Pesticides and other chemicals (such as selenium) that enter the Sea via agricultural runoff are not concentrated highly enough in either fish or birds to explain the problem.

The Salton Sea's mercurial nature has always created hardships for those who live near it. This includes speculators who bought into the Salton City land boom of the 1960s (DeBuys and Myers 1999), various contemporary business interests, Native Americans who live on nearby reservations, and several ethnic populations who rely on the Sea for subsistence fishing (Showley 2002). These considerations are some of the reasons why the Bureau of Reclamation proposed stabilizing both the salinity and surface level long before the transfers were signed.

The proposed water transfers produce their own set of problems. There is general agreement that there will be a reduction in the quantity of flows to the Sea as a result of implementing water conservation measures associated with the proposed transfers. The precise amount of these flow reductions has not been calculated but it could be considerable. As less water makes its way to the Salton Sea, the surface level will drop by several feet, magnifying the ongoing problems of stabilizing the Sea's salinity and reducing fish and bird die-offs.

Other significant consequences of this drop in surface level will be a loss of easy access to the water by persons and businesses now situated near the shore, a complete loss of the shallow water habitat heavily used by migratory shorebirds and other animal life, and the potential for serious dust/salt storms. This last consequence is so important as to require further discussion.

As the seashore recedes, a serious consequence will be the large expanse of newly exposed barren lake bottom containing various salts, pesticides, and other undesirable chemicals. Unless some way can be found to stabilize these bottomlands, it is likely that frequent high winds in the valley could create destructive dust/salt storms. These would be similar to, and possibly even larger than, those that have plagued the area around the dried-up bed of Owens Lake further north. Today, the possibility of dust storms resulting from lowering the Sea's surface level is the single most serious environmental concern. If storms occur, they could entail significant economic losses to both agriculture and

tourism in the Valley and perhaps engender health problems as well. Therefore, mitigation of adverse effects to the Salton Sea cannot be ignored, despite recent efforts by some agencies to downplay their significance (MWD 2002).

These and other adverse impacts are discussed in a recent Draft Project Environmental Impact Report (DPEIR) on the proposed water transfers (MWD 2002). However, most environmental organizations and many scientists feel the DPEIR greatly underestimates the significance of these impacts ("Declaration..." 2002). At the start of 2002, the Bureau of Reclamation had not, by its own admission, produced a mitigation alternative that offered more benefits than problems (as noted by Bureau spokespersons at a conference on the Salton Sea in January). What is needed to mitigate the transfer impacts is some additional source of fresh (or even brackish) water inputs to the Sea to help prevent shoreline exposure and reduce salinity, but no one has yet offered a viable suggestion as to a likely source. It will certainly not come from the oversubscribed Colorado River.

There is also the cost factor. Future reductions in inflow to the Sea were anticipated by Congress in 1998 when it passed Public Law 105-372, the Salton Sea Reclamation Act, which mandates restoration of the Sea to healthier conditions regardless of the magnitude of future inflow losses. The Act, however, authorized only a fraction of the money needed to accomplish this goal.

The cost of mitigation for the water transfers has become a major concern. If the required mitigation is viewed as including the full cost of stabilizing both the salinity and shoreline of the Salton Sea, the price tag would probably exceed a billion dollars. IID and SDCWA are willing to pay their "fair share" (that is, what they feel they can afford) for mitigation costs, but this amount would probably be less than ten percent of the total bill. The State of California is currently in tough financial times and is unlikely to volunteer to subsidize the mitigation costs. Likewise, the U.S. Congress is a very uncertain fiscal partner due to looming budget deficits and the fact that the typical representative is probably little concerned about this issue.

It can readily be seen that if rehabilitating the Salton Sea includes having to find adequate funding to fully mitigate both existing problems and the effects of the water transfers, then both the Sea and the transfer programs could be in trouble. If

the transfers are jeopardized, MWD and SDCWA believe the success of the entire 4.4 Plan, and Southern California's economic future, are threatened. "One piece falls and the whole thing fails," explained Salton Sea specialist Robert Campbell of the SDCWA (Perry 2002).

Needless to say, the coastal water districts are determined to prevent such a scenario. One current strategy is to try to get the water transfers exempted from state and federal laws relating to endangered species, such as California's Fully Protected Species Act. This approach is strenuously opposed by environmental groups. The desert water districts, for their part, are not so committed to the transfers, for reasons that will be examined in the next section. Indeed, in the spring of 2002 both the IID and Coachella Valley Association of Governments passed resolutions opposing the transfers (Yniguez 2002).

Bringing up the Dreaded "F" Word

During the water transfer negotiations, the one option that the valley farming interests and their elected officials consistently opposed was "fallowing." Fallowing refers to the deliberate non-cultivation of arable land; that is, using less water by simply leaving fields idle.

Farmers feared fallowing would mean less agricultural activity of all types, which could result in significant negative effects on the economies of the Imperial and Coachella valleys. Less farming would mean less fertilizer sales, less crop spraying, fewer seeds bought, fewer field hands employed, and so on. Thus farmers and politicians in the Valley insisted that there could be no agreement regarding water transfers that involved fallowing (Velush 2002). "Fallowing is a dirty word in the Imperial Valley," remarked Dave Nuffer, a local historian (Perry 2001). The fallowing concept was so avoided, so unspoken, during transfer discussions that it became known as the "f" word.

The fear of potential adverse effects of fallowing, however, is not universally shared in the desert agricultural region. In the summer of 2001, an agreement was signed by a nearby water district that involved fallowing. The directors of the Palo Verde Irrigation District (along the Colorado River near the city of Blythe) entered into a thirty-five-year agreement under which the MWD would pay them to leave some of their irrigated land

in fallow. A cap was included, which stipulated that at most twenty-nine percent of the District's agricultural land could be idled. The unused water could then be purchased by MWD for subsequent transfer via the Colorado River Aqueduct to coastal water districts, and could amount to as much as 110,000 af a year (Perry 2001).

Why do Palo Verde farmers not fear the potential adverse effects of fallowing? The payments that the district would receive for selling the unused water ($550 per acre per year) would come to many millions of dollars annually, quite possibly exceeding the net income the farmers would have realized by growing crops. Further, many believe that farmers will spend most of these in-lieu payments locally, in the Blythe area, resulting in no net economic loss to the area's economy. "If we get money, it gets spent here," said Blythe farmer Dan Robinson (Perry 2001). There might be less fertilizer sold, but more people would eat in restaurants and shop in stores. The local chamber of commerce, though, remains concerned about the effects of fallowing on agriculture-support businesses.

A pilot fallowing project was carried out earlier (1992–93) in the Palo Verde Irrigation District to test the economic effects of such a program. More than twenty thousand acres were involved in the program, with payments of $1,240 per acre received by participating farmers. Investigators concluded that fallowing had no significant effect on the overall regional economy nor on income to non-farm-related businesses. On the other hand, most farm-related businesses providing farm services felt a significant decrease in revenues, although those businesses providing farm supplies felt only a minor decrease. And it is important to note that pest infestations to the lettuce crop were creating a significant decline in agricultural support activities at the same time. Overall, sixty-one percent of program payments in excess of fixed costs were spent within the local economy ("Regional economic impacts..." 1994).

The Palo Verde Irrigation District agreement will not directly affect the IID, but several chambers of commerce in the Imperial Valley remain skeptical and officially opposed to fallowing. However, to many people, fallowing represents the most direct, least complex method of making more of California's 4.4 maf allotment of river water available to urban users. It involves the fewest environmental impacts and may even become a source of

additional fresh water for the Salton Sea. Selling water also represents a guaranteed income every year to participating farmers, which agriculture unfortunately does not.

A small crack appeared in the wall of Imperial Valley opposition to fallowing in the summer of 2002. An IID official sent a letter to California Governor Davis agreeing to a limited, five-year temporary fallowing program, but only under several fairly stringent conditions, one of which was compensation for any adverse economic effects to the Valley's economy (Allen 2002). Less than a month later, two environmental groups and a local Indian band filed suit to block any water transfers until a plan to protect the Sea, including mitigation, had been adopted.

Summary and Conclusion

Under the existing water transfer agreements, the main adverse effects will be environmental impacts to the Salton Sea. While there will probably be negative impacts on farm-related businesses if fallowing becomes commonplace in the Valley, the impacts on the Sea might be lessened since a portion of the unused water could (in theory at least) be directed into the Sea. If the Palo Verde experiment is successful and results in limited fallowing in the Imperial and Coachella Valleys—and compensation is provided—the long-term economic impacts in the region might be relatively small.

The MWD remains adamant that by the time the 4.4 Plan comes fully into play at the end of 2002, the water transfer agreements, along with other means of keeping the Colorado River Aqueduct full, must be in place and operating. Imperial Valley interests insist that for the transfers to happen there must be no resultant deterioration of the Valley's economy. Environmental groups insist the transfers must not result in accelerated deterioration of the Salton Sea. Conserving water by fallowing might be a start toward a viable solution if the above conditions can be met.

But these are all huge hurdles to be overcome, involving significant technical problems, environmental considerations, and economic and financial challenges. If adequate sources of funding to mitigate environmental impacts to the Sea cannot be secured, the water transfer agreements themselves could be in jeopardy. Barring an unlikely waiver or delay of the mandates of the

4.4 Plan, the flow in the aqueduct could be significantly reduced, with enormous implications for water usage and economic activity throughout Southern California.

There are other water supply options: large-scale wastewater reclamation and desalinization of ocean water, for example. But energy and cost implications make these alternatives at present too unattractive, and the timing provisions of the 4.4 Plan do not permit delays. As water agencies and elected officials already know, the next few years will be decisive ones for Southern Californians.

Note

1. An interesting problem arises from the canal lining process. One of the main canals to be lined, the All-American Canal, runs for a portion of its length very close to the U.S.-Mexico border. Some of the water that percolates out of it flows underground into Mexico and is currently being pumped for use in the Mexicali Valley. Lining the canal would eliminate this source of water on the Mexican side of the border. Mexicans view this groundwater as "their" water, but the U.S. State Department disagrees. Litigation is possible.

Postscript

As this journal was going to press, an accord was reached (October 16) that will allow implementation of the transfer agreement between the IID and SDCWA. In exchange for monetary assistance of $20 million to ameliorate the cost of displaced workers and other adverse economic consequences, the IID agreed to a limited fallowing program for fifteen years, with enough unused water to guarantee that present levels of flows from the Valley into the Salton Sea will continue. After fifteen years, a new accord will need to be constructed. The SDCWA will purchase 200,000 af of water annually at an initial price of $258 per acre-foot. (Source: Michael Gardner. "County strikes deal on water," San Diego Union-Tribune, 17 October 2002, A1.)"

References

Allen, L. 2002. Letter to Governor Gray Davis, 5 August. Imperial Irrigation District, California.

Cohen, M. J., J. I. Morrison, and E. P. Glenn. 1999. *Haven or hazard: The ecology and future of the Salton Sea.* Report published by Pacific Institute, California, February.

DeBuys, W., and J. Myers. 1999. *Salt dreams: Land and water in low-down California.* Albuquerque: University of New Mexico Press.

Declaration of concerned scientists and environmentalists of San Diego County: A call for the protection of the natural resources of the Salton Sea and San Diego County. 2002. Position paper containing over 100 signatures, 4 July.

LaRue, S. 1998. Troubled waters. *San Diego Union-Tribune,* 1 July, E–1.

Marcum, D. 1999. 7.6 million fish die in a day at Salton Sea. *Los Angeles Times.* 12 August, A–3.

McClurg, S. 2001. The California Plan and the Salton Sea. *Western Water,* November/December, 4–13.

Metropolitan Water District (MWD). 2002. Draft Program Environmental Impact Report for the implementation of the Colorado River Quantification Settlement Agreement. January.

National Academy of Sciences. 1968. Water and choice in the Colorado Basin. Washington, DC.

Newcom, S. J. 2002. The Colorado River: Coming to consensus?" *Western Water,* March/April, 4–13, 17.

Niiler, E. 1998. Sea of misfortune. *San Diego Union-Tribune.* 30 June, A–1.

Perry, T. 2001. MWD, farmers near deal for water. *Los Angeles Times* 7 July, B–1.

———. 2002. Salton Sea is the sticking point in water deal. *Los Angeles Times.* 14 April, B–1.

Purcell, L. 2001. Conversation with author, 11 July.

Regional economic impacts of the Palo Verde Test Land Fallowing Program. 1994. Program evaluation prepared by M. Cubed for the Metropolitan Water District of Southern California.

Salton Sea Authority. 2001. Colorado River delta connections—a brief water history. *Sea Notes,* August.

San Diego County Water Authority (SDCWA). 2000. 2000 Urban Water Management Plan. 28 September.

Showley, R. 2002. A resort makes its last call. *San Diego Union-Tribune*, 17 March, I–1.

Shuford, W. D., N. Warnock, and K. C. Molina. 1999. The avifauna of the Salton Sea: A synthesis. Report published by Point Reyes Bird Observatory, Point Reyes, California, 1 March.

Stapleton, M. 2002. Public presentation by the General Manager of the San Diego County Water Authority on the SDCWA transfer and the Salton Sea, 25 July.

Tetra Tech. 2000. Draft Salton Sea Restoration Project Environmental Impact Statement / Environmental Impact Report. January. Boulder City, NV: U.S. Bureau of Reclamation and Salton Sea Authority.

U.S. Bureau of Reclamation. 1998. Salton Sea alternatives: Final preappraisal report. Boulder City, Nevada. 12 November.

Velush, L. 2002. Idling farms dropped from Salton Sea options. *The Desert Sun*, 10 January, A1.

Yniguez, R. 2002. SSA board opposes CWA-IID water transfer. *Imperial Valley Press*, 9 April, 1.

Geographic Education

The "Big Map": A Hands-On, Shoes-Off Tool for Geographic Education

Paul W. Blank
Humboldt State University

Abstract: The floor of a classroom or a gymnasium can be turned into an enormous walk-on map using United States government aeronautical charts, which cover the land area of the earth at scales of 1:1,000,000 or 1:500,000. When students are invited to kick off their shoes and crawl around on this map, they get a graphic sense of "facts on the ground" in a way that lectures, readings, and other instructional modes cannot provide. The map is striking in showing the immense size and intricacy of the world and also gives a graphic sense of relative scale. The combination of high tech (the maps are the product of enormously complex technology, including satellite imagery and computer graphics) and high touch (the students can literally walk over the world) make the large-scale map a highly effective teaching tool. Techniques include map setup, map-reading games, roving lectures, role playing, use of props, personal histories, and class displays.

Introduction

IMAGINE A GYMNASIUM or large classroom cleared of chairs and desks. Covering the floor is a huge map—laminated, brightly colored, and accurate at a scale of eight or sixteen miles to the inch—on which students can crawl or walk at will (with their shoes off, of course, to spare wear and tear on the map). The map covers familiar territory, such as students' home states, and also shows Inner Asia, New Guinea, or the Amazon Basin at the same scale and level of detail. Since the map is laminated, students can draw on it with erasable markers and tape things to its surface. Students studying American history may trace the route of the Lewis and Clark expedition or mark the dams and reservoirs of the Tennessee Valley Authority. Students in world geography may trace the route of Marco Polo, follow oil pipelines across Middle Eastern deserts, or locate Mt. Kilimanjaro. The possibilities are endless.

In fact, such a map does exist and is available to any teacher or school district for a very modest outlay of funds, time, and effort. The map is simply a composite of colorful aeronautical charts published by the U.S. Defense Department. Besides flight data, the charts contain a wealth of detailed information on elevation, human settlement, lakes and rivers, and vegetation and landforms. A set of charts can be laid out on any floor, taking care that adjoining maps are positioned correctly, and the result is a "Big Map" (Figure 1). When not on display, the charts can be rolled up individually or in rows and stored for the next use (a numbering system helps preserve their order).

Big Map Exercises

A map of this scale is a boon for teachers, who can use it for their own research and as a powerful teaching tool to give their students a sense of "facts on the ground" that ordinary maps and readings cannot convey. On charts of China, for example, it is possible to follow the Great Wall as it stretches for hundreds of

Figure 1.—Humboldt State University students crawl over a 1:1,000,000 map of the Eurasian landmass. Students on left pore over the Mediterranean region.

miles across mountains and deserts. Following are a number of strategies and techniques a teacher can employ that make use of the Big Map.

Map Reading and Interpretation Games

The Big Map can be used to help students learn a variety of map-reading, orientation, and interpretation skills. Start by familiarizing them with the common graticule—the pattern of meridians and parallels on the earth. After they have learned the system of degrees, minutes, and seconds of latitude and longitude, you can send them on a "treasure hunt." Using an atlas whose index contains the geographical coordinates for places (*Goode's World Atlas* is a good source), write a place name and its geographical coordinates on a slip of paper and send students individually or in groups in search of the place on the Big Map.

Once students have become proficient using the coordinate system to find locations, they can be taught to recognize various features on the map and increase their analytical skills. Students will become familiar with the look of represented physical features such as volcanoes, river deltas, fjords and estuaries, glaciers, longitudinal sand dunes, alluvial fans, and rift valleys.

The aeronautical charts also present a wealth of cultural, economic, and political data. Let students look at the glossaries on the margins of each chart to see the variety of place names in different languages. In China, they can search for the Great Wall Figure 2), the Grand Canal, and the rectangle of the ancient city walls of Xi'an. In South America, they can look for Trinidad and Tobago or offshore oil platforms in Lake Maracaibo. In Russia, students may be directed to find the vast peat cuttings to the east of Moscow. More adventurous students might want to follow the trans-Siberian railroad or cross from Pakistan into western China along the Karakoram Highway. All of these features and many more are visible on the Big Map.

Sometimes the brutal realities of international politics can intrude into flight information presented on the charts. In troubled parts of the world, the charts contain frequent warnings to pilots that "Aircraft infringing upon non-free flying territory may be fired on without warning." Students can look for these and other indications of conflict, such as notices of "boundary in dispute" or "Air Defense Intercept Zones (ADIZ)." Older editions of maps of Europe show the flight corridors into West Berlin and

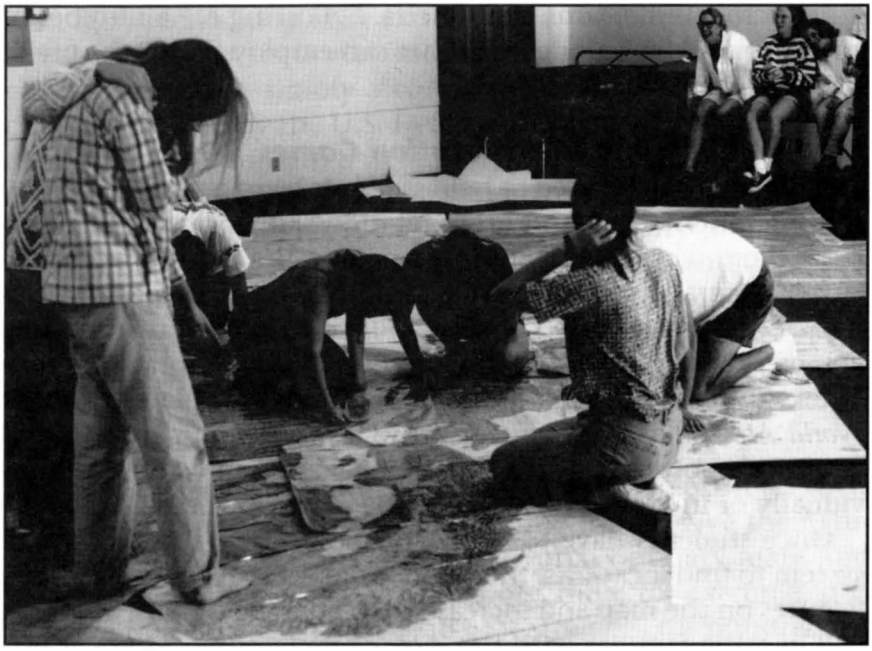

Figure 2.—Students trace the Great Wall of China on Operational Navigation Charts. Tactical Pilotage Charts, at a scale of 1:500,000, create a map four times as large as this one.

other evidence of East-West confrontation during the Cold War. Such troubling reminders of international conflict can serve as wonderful launching pads for discussions of international politics and bring home the human cost of such conflict in ways that leave a bigger impression than lectures or readings.

Roving Lectures

The Big Map makes a wonderful complement for roving lectures. The technique is fairly simple: use the Big Map as the focus of your lecture, and have your students follow you around on it as you give a guided tour of the topic under consideration.

I have been experimenting with this technique for the past five years, and have found that a new insight or relationship never fails to present itself each time the Big Map is used in a roving lecture. During a lecture on water issues in the Middle East, for example, students were able to walk over the Nile and Tigris-Euphrates watersheds and see the upstream dams that made downstream states nervous. In Iran and Central Asia, the settle-

ment pattern along alluvial fans seemed to jump out, especially when students could see the myriad *qanats* (underground aqueducts, demarcated on the map) that tap the groundwater under the alluvial fans, making irrigated agriculture possible in the dry interior basins of the Asian continent. On another occasion, while lecturing on the shifting balance of power in early modern Asia, I showed my class how Moscow's placement fifty miles inside the great Eurasian forest belt provided it some protection from nomadic raiders in the age of archery and also placed it in an ideal position to conquer the steppes once the Muscovites had mastered the use of gunpowder.

Each teacher will bring to the Big Map his or her own knowledge, talents, and special skills. Lecturing on the Big Map offers the opportunity for a memorable teaching and learning experience to those willing to take the chance. I have found that my own students remember and comment favorably on my Big Map lectures in course evaluations and that they tend to retain material presented in the context of roving lectures on the Big Map longer than information presented in the normal lecture format.

Role Playing

Of course, it is not necessary for the teacher to monopolize the Big Map as a stage. Students can also play roles. They may be "placed" in various parts of the world and invited to explain their situation to the rest of the class. In this way, students can become more aware of the truism that "geography is destiny." They can see how the world looks from Moscow or Buenos Aires or Pretoria or Baghdad.

The opportunity to role-play is not limited to the present day. Take advantage of the intrinsic link between time and place by having students explore the contrasting worlds of Romans and Carthaginians, Toltecs and Mayas, or Chinese and Mongols. When I teach the historical geography of the Mediterranean, for example, I have students place themselves in the shoes of King Philip II of Spain, the Ottoman sultan, the Russian czar, and other major players in the sixteenth-century "Great Game." Positioning students at the correct geographical vantage point on the Big Map adds immeasurably to their understanding of the stratagems and motivations of the participants.

Students can also prepare more elaborate portrayals for end-of-semester spectacles. During the climactic presentations in a special interdisciplinary class on the Silk Road, one of my students assumed the identity of Franciscan Friar Giovanni del Pian Carpini, complete with monk's cowl and tonsured scalp. This student took the class along with him on his journey from Rome to China to visit the Great Khan, describing places he had seen and people he had met along the way. It was a masterful performance. In the next presentation, a young woman assumed the identity of none other than the Black Death itself—the uninvited hitchhiker along the Eurasian trade routes opened up by the Mongols and followed by the likes of Friar Carpini. There really is no limit to the dramatic possibilities presented when inspired students are introduced to the Big Map—especially if they are hams.

Using Props

If the Big Map lends itself to drama, it also invites the use of props. One of the best ways to engage students is to prepare "data cards" for each country in the world. The series of data cards would include country name, capital city, and location (so the card can be placed on the Big Map), as well as socioeconomic data on population and GNP. This type of information can be gleaned fairly easily from a couple of sources.

Once the data cards are placed on the Big Map, it becomes easy to assign groups of students to use other props to display the data contained on the cards in a more dramatic way. I have experimented with using color-coded poker chips (each chip representing ten million persons) to show the size and relative growth of the world's population. If time permits, I combine population props with other props to represent income. The differences in income levels between countries are so enormous that it takes imaginative approaches, such as using grains of rice, lentils, popcorn, or other cheap, bulk items, in order to show the enormous disparity between "haves" and "have-nots" effectively.

Props I have found successful in showing the impact of colonialism include miniature cocktail flags. With some creative additions of handmade flags colored onto self-adhesive labels and wrapped around toothpicks, I have been able to represent most

of the great colonial powers of the nineteenth century. I have my students plant flags of the colonial powers onto lumps of modeling clay and then take a tour of the colonial world. The immense reach of both the British and French empires, as well as the influence of Spain and Portugal, show up clearly in this exercise. In the case of the Middle East, Africa, and Asia, the heavy imprint of colonialism sheds light on many contemporary problems and explains some of the lingering resentments in these regions.

Personal Histories

The Big Map can also be used to tell personal stories of travel, migration, and adventure. It makes a wonderful supplement to class readings of biographies, travel journals, or histories of exploration. History is full of intrepid explorers, from Marco Polo to Lewis and Clark to Amelia Earhart. Following the journeys of these adventurers on the Big Map contributes to the immediacy of the experience, and helps bring their accounts to life for your students. And don't forget the stories of your own students. Especially in the multicultural classrooms of California, students' family histories provide rich fodder for learning and connecting their own life stories to larger historical and geographical patterns.

Class Displays

A final suggestion is to let your students create a display of their own on the Big Map. Last year I had my students create an exhibit using the map. Each group chose a particular topic, did research on the topic, and created an exhibit. Topics included crucial battles in Islamic history, the cities of the Roman Empire, upstream-downstream water conflicts, and the proliferation of weapons of mass destruction.

Student groups were allowed, with some guidance, to devise their own forms of presentation. The arms race was represented by model soldiers and tanks. Caravan routes were laid out on the map with colored yarn. To provide further information, background notes were written on cards that were then laminated and taped to the map surface. The exhibit was set up in a large room in the student union and opened to the public for two days. The prospect of presenting to the larger public has a won-

derful way of concentrating the mind. Challenged with a public display of their work, the students put out their best effort and came up with some remarkable results.

Acquiring and Tailoring the Map to Your Needs

Operational Navigation Charts (ONCs), Tactical Pilotage Charts (TNCs), and other Department of Defense maps can be obtained from the Federal Aviation Administration; they will send a free catalogue if you call or write. (FAA, 6303 Ivy Lane, Suite 400, Greenbelt, MD 20770. Tel: 800-638-8972.)

In some larger cities, specialized map stores will also carry aeronautical charts in the ONC, TPC, and other series. Check local yellow pages under "maps." At the time of this writing, charts in the ONC series cost $5.50 apiece, while charts in the TPC series cost $6.00 apiece. The entire set of ONCs consists of about 240 maps. A variety of vendors also offer maps for sale on the Web. Just type "aeronautical charts" into your favorite search engine.

If you are the enterprising type, you may want to scavenge for obsolete editions of aeronautical charts. The military regularly discards obsolete charts, so if you have friends in the military, let them know you would be glad to save these charts from the shredder. Municipal and university libraries are often repositories for aeronautical charts, and they also discard obsolete editions. So be sure to maintain good relations with your local librarians, and let them know you are interested in any throwaways. You can put them to good use!

Acquisition of the Big Map can be a daunting undertaking. However, it is not necessary to obtain an entire set of aeronautical charts in order to begin using the Big Map in an instructional context. *Do not be intimidated!* It is easy to start small, getting a partial set to cover areas of interest such as the United States, Europe, East Asia, or other regions. The entire continental United States is covered by a mere eleven ONCs—an outlay of less than

$60. Instructors focusing on a smaller area of the planet or not having access to sufficient floor space can choose to set out smaller segments of the map set. In the course of teaching world regional geography, this author has set out maps of continents or world regions to introduce students to the area under study before beginning lectures.

It is a wise idea to have each chart laminated in order to protect it from damage under heavy use. Laminating the charts also tends to accentuate and brighten their colors. The size of individual charts, however, precludes lamination in a normal (twenty-two-inch) laminating machine, and larger jobs are often prohibitively expensive. At Humboldt State University, we were able to solve this problem by folding the charts lengthwise (to fit the laminating machine) and laminating the printed side only, not the back. Although this does not provide complete protection, it does help the charts hold up under repeated classroom use. Using a university-owned laminating machine and student volunteers who folded and trimmed the charts, we were able to keep the per-chart lamination cost down to $1.50.

The charts themselves are quite adaptable. You can use them for your own purposes and you do not have to commit to an immense project. A few maps will do the job. Maps in the ONC and TPC series are especially good for use as companions to history and regional geography courses. The maps also lend themselves to the study of resource and conservation issues. Watersheds can be identified and marked and problems of water use and abuse, upstream-downstream conflicts, and resource sharing can be studied from the Colorado River to the Nile or the Mekong.

It is my hope that some of the exercises mentioned here will inspire you to experiment with the Big Map. Try creating your own lesson plans, bringing your own interests and expertise to the endeavor. Give yourself free rein. Your enthusiasm will be infectious and will inspire your students as they learn to explore the world in new and different ways.

Geographic Chronicles

The Lone Pine Meeting

The 56th Annual Meeting of the California Geographical Society was held at Lone Pine High School in Lone Pine, May 3–5, 2002.

THE LONE PINE MEETING was a great success. With 256 people attending from five different states (California, Nevada, Pennsylvania, Virginia, and Wisconsin), this proved to be one of our largest meetings ever, rivaling the urban meetings of Pasadena in 1972 and Pomona in 1994. Our membership is also climbing to higher heights with a pre-meeting count of 349 paid members. The field trips were a huge draw with more than 200 people participating. The program included sixty-two papers, posters, and maps from nineteen different institutions. The winners of the Cram Elementary Geography Poster Contest from Highland, California, were on display.

Lone Pine provided some unique opportunities for field trips and other events; it was certainly the first time we've ever attended a professional conference where shower tickets were sold! Following the banquet, we were entertained by a gunfight reenactment in a local tavern that spilled out onto the main street.

The California Geographic Alliance sponsored the Friday evening barbecue and also paid the entry fee for all student presentations at the meetings. Each student on the program was presented with Benchmark's California Atlas, and the scholarship award winners received a wall-sized map panel of Lone Pine from Benchmark. The Geosystems Award winner received the wall-sized Raven map of California. The support of the Alliance and Benchmark Atlases/Raven Maps enables us to involve more students, many of whom will be the teachers of tomorrow.

The CGS's first Presidential Plenary was a fascinating presentation by Robert Christopherson. Bob showed us dramatic slides illustrating wet-dry cycles in Death and Panamint valleys. He began with scenes from after a heavy snowfall and from one day after a 1.01-inch rainfall, then showed comparison photos taken a month later of the same places. A river was flowing through the dunes and a lake in the playa was three miles wide, ten miles long, and two inches deep. Bob has the dubious distinction of

being one of the few people we know who actually got his car stuck in the mud in the Stovepipe Wells dune field!

The banquet capped off the meeting, with the Outstanding Educator Award going to Matt Ebiner, and Stephen Cunha receiving the Outstanding Service Award. Certificates of Appreciation were awarded to John Aubert, Kris Jones, Mike Murphy, and Mike Wangler for their work on organizing the field trips; Dave Holland, Chris Plakos, and Oliver Morrison for providing expertise on the field trips; Jody Winchester for the catering; and Yvette Sennewald, Debra Sharkey, and Jenny Zorn for their work behind the scenes in organizing the meetings.

On Sunday morning, while all the CGS'ers were packing their bags and settling in for the drive home, Board member Matt Ebiner decided to run in the Lone Pine marathon races. Good decision, Matt. He won the 10-mile race in the Alabama Hills.

—Jenny Zorn, President

CGS Award Winners 2002

OUTSTANDING EDUCATOR AWARD
Matt Ebiner, El Camino College

DISTINGUISHED SERVICE AWARD
Stephen Cunha, Humboldt State University

DAVID LANTIS SCHOLARSHIP AWARDS
GRADUATE AWARD ($500)
Alejandro Alonso, University of Southern California
UNDERGRADUATE AWARD ($400)
Julienne Gard, University of Southern California

JOE BEATON PROFESSIONAL POSTER AWARDS
FIRST PLACE ($100)
Virginia Humphreys, Cosumnes River College—*Hawaii's Drive-Up Volcano: Mount Kilahea*
SECOND PLACE ($75)
Kelly Jacobs, Cosumnes River College—*Ladakh: A Pinnacle Palace*
THIRD PLACE (TIE—$50 EACH)
Julia Uhlendorf, Humboldt State University—*Coral Reef Bleaching: A Case Study in the Seychelles*
Sierra College Field Geography Students—*The Road to Lone Pine: Sierra College Students' Transect of the Eastern Sierra*

TOM MCKNIGHT PROFESSIONAL PAPER AWARDS
Undergraduate Papers
FIRST PLACE ($125)
Dorothy Watkins & Rosa Zingg, CSU Chico—*Political Redistricting Criteria in Butte County, California*
SECOND PLACE ($100)
Sandy Perry, San Jose State University—*A Neighborhood Business Area Goes Upscale*
THIRD PLACE ($75)
Peter Cress, Humboldt State University—*Integrating Economics and Values in the Trinity River*

Graduate Papers

First Place ($125)

Meredith Leonard, CSU Northridge—*An Evaluation of Ecological Criteria for the Removal of Matilisa Dam*

Second Place ($100)

Jonathan Snapp-Cook, San Diego State University—*The Geography of Organic Agriculture in San Diego County: The Farmers' Perspective*

Third Place ($75)

Alejandro Alonso, University of Southern California—*Racialized Identities and the Formation of Black Gangs in Los Angeles*

GEOSYSTEMS AWARD ($250)

Nathaniel Vaughn Kelso, Humboldt State University—*Mapping Precipitation in the Mountainous Terrain of Northwestern California*

MAPPING AWARDS

Professional Paper Cartographic Award

First Place ($100)

Melissa Katz, Humboldt State University—*Salmon and Steelhead Stock Status Coast Range Oregon*

Second Place ($75)

Joline Pire, Humboldt State University—*The United States vs. Europe: Percent Organic Land*

Third Place ($50)

Sebastian Araya, Humboldt State University—*Earthquake Activity from 6/23/01–7/19/01*

CERTIFICATES OF APPRECIATION

John Aubert • Dave Holland • Kris Jones
Oliver Morrison • Mike Murphy • Chris Plakos
Yvette Sennewald • Debra Sharkey • Michael Wangler
Jody Winchester • Jenny Zorn

Book Review

The Island of Lost Maps: A True Story of Cartographic Crime

Miles Harvey. New York: Random House, 2000. xxiii and 405 pp. Illus., maps, notes, and index. $24.95 cloth (ISBN 0-375-50151-7), $14.95 paper (ISBN 0767908260).

Reviewed by Scott Anderson, Department of Geography, State University of New York (SUNY) College at Cortland, Cortland, NY.

THOSE OF US who were first drawn to the field of geography by a fascination with maps will understand the reverential tone in Miles Harvey's paean to the art and artifacts of cartography. In *The Island of Lost Maps: A True Story of Cartographic Crime*, Harvey describes four years of investigative journalism following the path of perhaps the most prolific map thief in history, Gilbert Bland. The book seems at times poorly plotted and the research behind it—stretching across history and space—can be rather shallow and undisciplined. Harvey's narrative voice is sometimes unstructured and random and often embarrassingly self-absorbed as he explores the uncharted territory into which obsession can lead. Nevertheless, in its adoration for the look and touch of old maps—for their reflection of the knowledge and fantasy of given eras, for the painstaking techniques required in their creation, for their symbols and decoration, for their relationship to the history of European discovery and conquest and their importance as repositories of proprietary knowledge, for tantalizing uncertainties about their provenance, and especially for their cash value as collectibles and objects of avarice and desire—*The Island of Lost Maps* is a total joy to read and so engrossing that it is a serious threat to one or several good nights' sleep. In fact, it is almost a must-read for all professional geographers seeking to reinvigorate their relationship with the field.

As literary critic and feature writer for *Outside Magazine*, Harvey has lived what would be a dream life for many geographers. Yet as narrator and protagonist of *The Island of Lost Maps*, he seems to prefer to be one of us—at least of the armchair Magellan or Francis Drake variety. He began this particular voyage of discovery after reading a 1995 *Chicago Tribune* clipping about a man—Bland—who had been caught in a footrace with security guards

from Baltimore's Peabody Library after slicing a 232-year-old map from an atlas and folding it under his shirt. Bland, the story reported, was a suspected serial library map thief. This news provoked Harvey, a self-confessed lifelong cartophile who could "read maps before [he] could read books," to wonder what would possess a man like Bland to transgress into cartographic crime. Harvey's pursuit of an answer, unresolved even after years of searching, is not particularly interesting. Although Harvey gives his quest the importance of other obsessive searches such as for El Dorado, the Fountain of Youth, the Northwest Passage, Prester John, Mungo Park, and Dr. Livingstone, what he finds in the end is terra incognita, the blank space on his map of understanding. "My years of attempting to get inside Bland's head had been a failure, I realized. I had not penetrated his thoughts, only imitated his actions—sneaking around the edges of his life just as he had crept around libraries" (p. 321). Bland turns out to be simply a petty criminal and con artist whose most interesting attribute is the crime he picked. He demands anonymity and reveals so little personality that his name—in an ironic coincidence—seems a perfect fit.

However, in revealing why someone might *want* to steal old maps, Harvey's narrative really sets sail. Like an old portolan chart, it courses along a wide range of compass directions and is ornamented with symbols and monstrous decorations that, however fanciful and irrelevant, add lively embellishments to the journey. In his peripatetic way, Harvey encounters much that is unexpected and a few things that are quite remarkable; for unbeknownst to most geographers, the antique map business has boomed in recent decades. Like Roman coins, African art, Picasso ceramics, and the letters of Lincoln, rare and irreproducible old maps have become highly valued collectibles.

How highly valued rare maps can be might be Harvey's most remarkable discovery. At a Sotheby's auction he attended in June of 1998, a 1482 edition of Ptolemy's *Geographia* (including the *mappa mundi* that many of us show to our introductory classes) fetched a bid of $1,150,000. According to Harvey, when mandatory fees were added, the volume cost its new owner $1,267,500 and set a world record price for an atlas printed on paper. (An even rarer copy of the same edition printed on animal parchment sold for $1,925,000 in 1990.) With prices like these and the market still on the rise, one of Harvey's contacts, the flam-

boyant and charismatic international map dealer W. Graham Arader, claimed to sell $10 million in old maps each year and to have amassed a personal fortune of approximately $100 million in the business.

In acquiring such a fortune, Harvey observed, Arader gained a reputation for "breaking" (disassembling) many of the old atlases he acquired. At one time, atlases bought for $10,000 could be sold in pieces for as much as ten times that amount. Fortunately, the practice no longer makes economic sense. Intact atlases are now worth more than their parts. Nevertheless, it is a sad fact that most antique maps in circulation originally came from broken atlases. This makes establishing provenances very difficult indeed, and with scoundrels like Gilbert Bland at large in the world, puts libraries at risk of losing some of their most precious documents and dealers at risk of trading in stolen goods. In fact, Harvey found these risks to be so pervasive that many of the librarians and map dealers he encountered were unwilling to admit—or even discuss—the problem.

The "island of lost maps" for which Harvey named his book is a pile of unclaimed maps sitting in an FBI office in Richmond, Virginia. Of the approximately 250 maps—worth as much as $500,000—recovered by the FBI as part of Bland's plea bargain agreement, 70 remained unclaimed even after three years of diligent repatriation efforts by the agent in charge, including the repeated contacting of dozens of libraries known to have been "hit" by Bland. These maps remained uncharted territory in part because of the hesitancy of some librarians to admit to their loss.

The apparent lack of even cursory security at many of the libraries that house some of the world's most precious cartographic treasures is another of Harvey's remarkable discoveries. A simple security camera would have been a complete deterrent, Bland admitted to authorities, yet he rarely encountered more security than the casual glance of a disinterested curator. In fact, many libraries do not even keep detailed notes on what maps are contained within some of their rarest volumes. This makes it almost impossible for them to recognize when something irreplaceable has gone missing.

Bland is certainly not the first thief to recognize the opportunities for larceny that are to be found in the modern research library. Harvey's rogues gallery includes a Tulane University English professor, Andrew Antippas, caught in 1979 for stealing

maps from Yale University and the Newberry Library in Chicago; renowned antiquities authority Charles Glaser, caught and prosecuted repeatedly for stealing maps from Dartmouth College, the University of Minnesota, the Newberry Library, Philadelphia's Free Library, and Lehigh University; rare books curator Robert Willingham, prosecuted in 1996 for stealing a cache of maps and other antiquities from his own employer, the University of Georgia; bookstore owner Fitzhugh Lee Opie, accused of making several trips each week over a ten-year period to the Library of Congress to steal maps, books, and prints; lawyer William McCallum, caught in 1996 with maps stolen from Dartmouth College; and Daniel Spiegelman, caught with at least $1.3 million in books, documents, and manuscripts, including 250 early maps, taken from Columbia University.

This list may represent just the tip of a very large iceberg. Among the many library officials that visited the FBI's Island of Lost Maps in hopes of recovering lost treasure, Harvey reported that a number left in bitter disappointment, including one group that hoped to find thirty or forty lost maps but found not a single one.

The publicity surrounding the Bland case put libraries on notice to keep their collections under closer scrutiny, and some change for the better has certainly occurred. However, according to Harvey, Graham Arader believes the task to be beyond the resources of the average library and advocates the creation of several centralized and highly regulated repositories. I am sure that I am not the only reader who has been inspired by Harvey to seek out in person some of these ancient representations of humankind's most avid geographical dreams and desires. But I hope that when I do so I find a security camera in the room, or at least someone looking very, very carefully over my shoulder.

Instructions to Contributors

The California Geographical Society welcomes manuscripts and reviews in the following categories:

Geographic Scholarship—refereed articles that reflect the range and depth of geography (all subfields, regions, and approaches).

Geographic Education—articles and reviews on innovative teaching techniques, workshops, classroom activities, and other topics that stimulate geographic education at all levels.

Geographic Chronicles—items of general geographic interest including commentary on issues and debates in geography, notices of grant or travel/study opportunities, and chronicles of the CGS.

Book Reviews—reviews of books and atlases, emphasizing topics of interest to educators.

Submission Guidelines

Manuscripts: Manuscripts should conform to the general guidelines published in the *Annals of the Association of American Geographers*. Include an abstract of 150 words or fewer (keywords are not needed). List references, endnotes, and figure captions on separate pages. Use endnotes sparingly and only to explicate the text.

Graphics: All illustrations—maps, graphs, photographs, and drawings—must be in digital form (each in its own file), readable in black and white, numbered as figures, and cited in the text. For final submission, graphics should be in one of two formats: EPS (Encapsulated Postscript) for most illustrations or TIFF (Tagged-Image File Format) for raster images. Resolution should be 300 dpi or better. Captions for illustrations should be numbered consecutively and typed on a separate sheet.

Tables: Format following examples in the *Annals of the Association of American Geographers*. Number tables consecutively and place into manuscript in appropriate location.

Disclaimer: Papers that have been previously published or are currently being considered for publication elsewhere cannot be considered. In a cover letter with author's name and paper title, include a written statement that: 1) the manuscript is not under review elsewhere and will not be submitted to another publication while under consideration by *The California Geographer*, and 2) the contents have not been published elsewhere.

Peer Review: Manuscripts submitted for the "Geographic Scholarship" section are subject to anonymous review by at least two referees and should not identify the author anywhere except in a cover letter. The review process takes approximately one month.

Submission: Please submit three typed and double-spaced paper copies complete with figures to: Judy Walton, CG Editor, Department of Geography, Humboldt State University, Arcata, CA 95521. E-mail: jw17@humboldt.edu.

The California Geographical Society

Founded in 1946 as the California Society of Teachers of Geography, the CGS is the oldest statewide organization devoted to enhancing the understanding of geography. during the 1950s, the organization became affiliated with the National Council for Geographic Education and changed its name to the California Council for Geographic Education. It acquired its present name, California Geographical Society, during the 1980s as it sought, successfully, to become inclusive of all individuals interested in geography. The CGS promotes interaction among academic and applied geographers, educators at all levels, students and laypersons. The Society holds its Annual Meeting in April or May at various sites around the state. The Meetings include field trips and professional and student paper and poster presentations. They also provide the venue at which the Society offers cash awards for outstanding student presentations as well as graduate and undergraduate scholarships. Teaching excellence is recognized with Distinguished Teaching and Outstanding Educator awards. Members receive the Society's annual referred journal, The California Geographer, and a periodic newsletter, the CGS Bulletin. Annual dues are $10 for students, $25 for regular members, and $20 for retired members. Applications are available on the Society's WEB page.