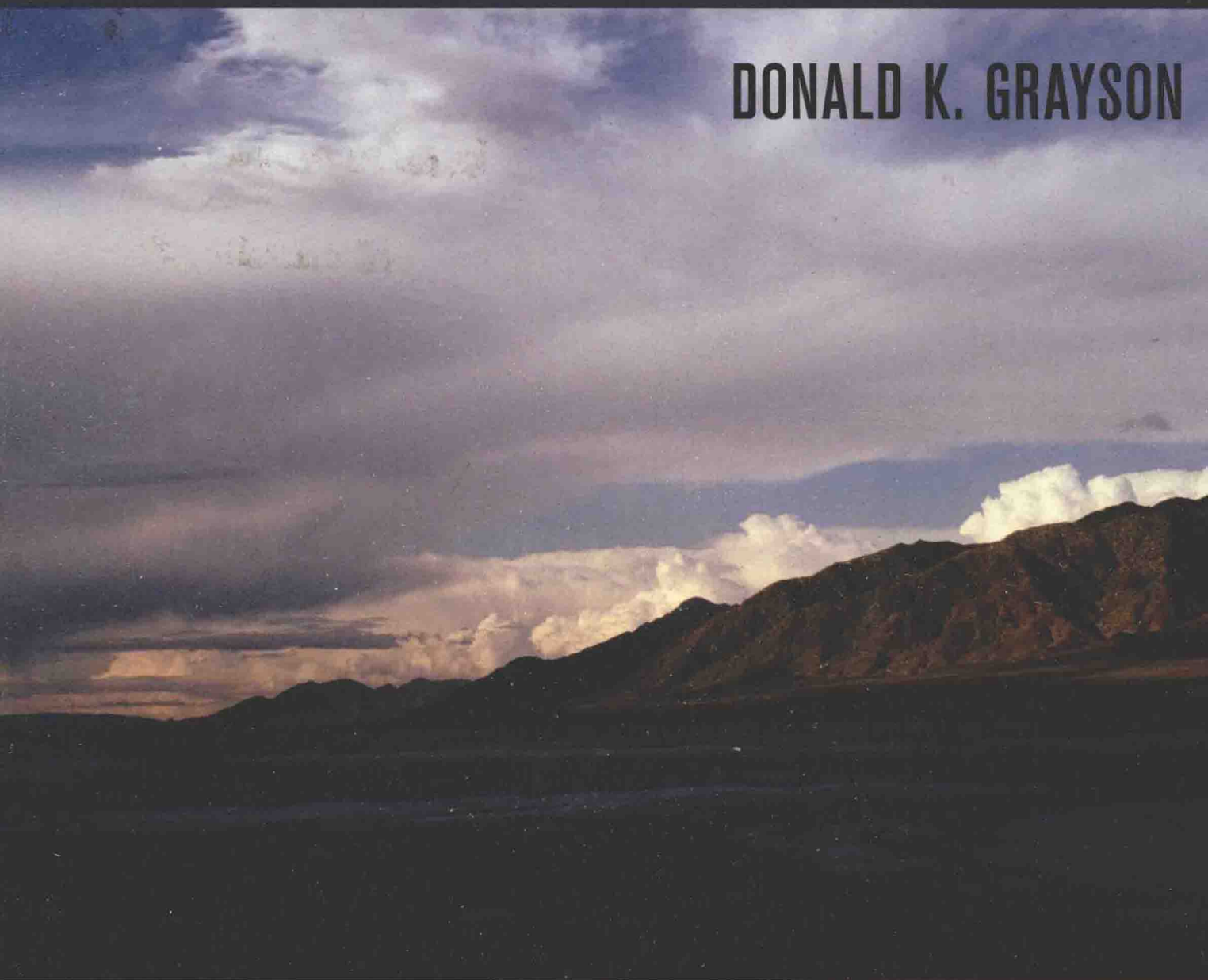

DONALD K. GRAYSON

THE GREAT BASIN

A NATURAL PREHISTORY

REVISED AND EXPANDED EDITION

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For Barbara, who was my life

PREFACE

Most North Americans grow up knowing that parts of our continent were once covered by glaciers, that now-extinct mammoths and sabertooth cats walked the same ground on which we now walk our dogs, that people discovered North America long before Columbus stumbled across it. Most of us acquired this knowledge so casually that, if we happen to be asked exactly when these things occurred, we have no real answer. We would probably know that mammoths looked like elephants, but not that they became extinct about 11,000 years ago in North America. We might know about Ice Age glaciers and still not know that the maximum expanse of the most recent glaciation of North America occurred about 18,000 years ago. We might just shrug if asked when people first got to the Americas.

Answers to these questions are easy to learn. It takes no great insight, and little effort, to register the fact that mammoths became extinct in North America about 11,000 years ago. It is, however, harder to grasp the nature and magnitude of change that has occurred throughout North America during and since the end of the Ice Age.

We tend to assume that landscapes and the life they support are relatively permanent affairs unless human activity modifies them. We are not surprised when the farmland that surrounds the town we grew up in gives way to subdivisions and shopping malls: that kind of change we are used to and have come to expect and perhaps regret. But it is very surprising to learn how ephemeral the assemblages of plants and animals that surround us today really are and, in most cases, how recently those assemblages came into being. The brevity of our lives easily misleads us into thinking that the way things are today is the way they have been for an immense amount of time. It is even easier to be misled into thinking that things are the way they are now because they have to be that way.

Until recently, life scientists attributed far greater stability, longevity, and predictability to biological communities than those communities actually possess. One of the great scientific gains of the past few decades is the recognition of the vital role that history has played in forming the plant and animal communities that now surround us, the recognition of how unpredictable changes in those communities can be, and the recognition of how fleeting their existence often is. Plant and animal communities appear stable and real to us only because we do not live long enough to observe differently. Bristlecone pines, which do live long enough, know better.

Today, most life scientists, especially those whose work has any significant time depth, also know better. Although we may not live as long as bristlecone pines, we do have techniques for extracting information about earth and life history that can tell us not only what specific landscapes were like in the past but also precisely when in the past they were like that. Even though we have made less progress toward understanding why they may have been that way, we have come a long way in this realm as well. We know now enough about at least the late Ice Age and the times that followed to be able to provide fairly detailed environmental histories for nearly all parts of North America.

In this book, I provide such a history for the Great Basin. I define the Great Basin in multiple ways in Chapter 2, but here, suffice it to say that the Great Basin centers on the state of Nevada, but also includes substantial parts of adjacent California, Oregon, and Utah. My goal is simple: to outline the history of Great Basin environments from about the time of the last maximum advance of glaciers in North America to the arrival of Europeans and their written records. In so doing, I hope to convey the dynamic nature of the landscapes and life of this region.

During the late Ice Age, camels lived near what is now Pyramid Lake in northwestern Nevada; massive glaciers existed in the high mountains of eastern Nevada; substantial lakes lay in settings as far-flung as Death Valley and the Great Salt Lake Desert; trees grew in the valleys of the Mojave Desert of southern Nevada. The camels, glaciers, lakes, and low-elevation trees are now gone. Today, pinyon-juniper woodlands drape across millions of mountain-flank acres in the Great Basin, and saltbush vegetation is common in many of the valleys that lie beneath the woodlands. To the south, the oddly attractive creosote bush is a dominant shrub in the valley bottoms. This is a remarkably recent state of affairs, and a prime goal of this book is to document these facts and to discuss why they are so.

It was not hard for me to decide what to cover here: glaciers and lakes, shrubs and trees, mammals and birds, the people. Others might have chosen a different set of topics, in some cases broader, in others narrower. The set I have chosen, however, not only strikes me as important but also reflects my background as a scientist trained in archaeology, vertebrate paleontology, and paleoecology. Someone who knows more about insects, leeches, and snails would have written a different book. In fact, I wish they would, since I would like to read it. The content of this book also reflects the fact that it has been my great fortune to know and to work with most of the people whose work is discussed here.

Deciding on the temporal coverage was more difficult. That this book would deal with the past 10,000 years was clear from the outset, as was the fact that it would also cover the waning years of the Ice Age or Pleistocene. These are, after all, years that were critical to the formation of the plant and animal communities of the Great Basin as we know it today. They also happen to be the years on which much of my own Great Basin work has focused. In the end, I decided to begin my coverage at about 25,000 years ago, though sometimes earlier and sometimes later. I made that decision both because 25,000 years ago allows me to discuss the Great Basin prior to and during the Last Glacial Maximum, and because our knowledge of Great Basin environments tails off sharply before that date.

Today, the term "natural history" is often used in a very general way to refer to the things that life and earth scientists study. That is the way I use it here, modifying it in the title to indicate that this book deals primarily with events that took place prior to the times for which written records are available. Thus, this book is very much a "natural prehistory," dealing with the landscapes of the Great Basin, and the life it supported, during the past 25,000 years or so.

In an important essay, Great Basin anthropologists Don and Kay Fowler discussed the fact that American Indians and other non-Western peoples became incorporated into Western notions of "natural history" not because all human life was so incorporated, but because non-Westerners were perceived as being more primitive, as "closer to nature" (Fowler and Fowler 1991:47), than western peoples. As usual, the Fowlers are completely right.

It is hard to shake the deeply embedded, pejorative implications of including non-Western peoples in a "natural history" of any place, but the shaking is needed. The fault lies not in the inclusion of non-Westerners in the examination of natural history, but in the exclusion of Western peoples. That we are all very much part of the natural world should be obvious, given such things as the impacts of Hurricane Katrina and the likely impacts of global warming. It is even possible that we are now "closer to nature" than are, say, the small-scale foraging and farming societies of Amazonia, given that we are far more vulnerable to massive losses due to environmental assaults. On the other hand, the prehistoric peoples of the Great Basin were "closer to nature" than the contemporary peoples of Reno or Salt Lake City are now, not in the nineteenth-century sense that they were further removed from God or closer to the beasts of the earth, but in the very real sense that they had to cope far more immediately, and on a daily basis, with the environmental challenges that nature dealt them. The very same is true for the early historic human occupants of the Great Basin, whether native or not. But because my emphasis is on the prehistoric Great Basin—the Great Basin prior to the time of written records—it is the prehistoric archaeological record that occupies me here.

I also note that there are a few places in this book where I repeat information given earlier. I have done this because I want people to dip into this book wherever they wish and have tried to make each chapter as independent as I could from earlier chapters. Doing that required some minor repetition, but, in the end, it does mean that the chapter on late Pleistocene vertebrates, for instance, can be read without having incorporated all that has come before. I hate flipping back and forth in lengthy books to remind myself of what came long before, and the sparing repetition is meant to help avoid that.

I would be pleased to discover that Great Basin archaeologists, ecologists, geologists, paleobotanists, and paleozoologists had read and learned something, no matter how minor, from this book. But the truth is that I did not write this book for my professional colleagues. Instead, I wrote it for those who know little if anything about the environmental history of the Great Basin, or even about the modern Great Basin. Although I have worked in this region for over forty years (I started young), I have yet to lose the excitement that comes from identifying the bones of an extinct horse or camel from Ice Age deposits. I continue to be awed by the Bonneville Basin, from its salt flats to the high terraces carved on its mountains, both products of Pleistocene Lake Bonneville. I will never forget the moment I discovered the remains of a 5,300-year-old heather vole in the deposits of central Nevada's Gatecliff Shelter or bushy-tailed woodrats living in the hot and dry Lakeside Mountains of Utah—both because these discoveries were unexpected and because of what they meant for our understanding of the histories of those animals in the Great Basin. I find the human prehistory of the Great Basin exciting, not because of the

often-impressive nature of the artifacts people left behind but because of the varied and severe environmental challenges the people who made these things met successfully. I wrote this book because I wanted to share all of this with those who know little or nothing about it.

As a result, I have assumed that the readers of this book come to it with little knowledge of such things as radiocarbon dating, pollen analysis, packrat middens, equilibrium-line altitudes, and projectile point chronologies. I explain them here. I also assume that readers know little about the modern Great Basin (Chapter 2), about North America during the Ice Age, or about the initial peopling of the New World (Chapters 3 and 4). In the first two parts of this book, I have spent a good deal of time providing that essential background. Those already in the know might skip these parts, though I depend heavily on them in later sections of the book.

Some technical comments are needed. I provide both scientific and common names for plants and animals the first time I mention them in the book, then use one or the other (usually the common name) later on. An appendix provides a concordance of the common and scientific names of plant species. Concordances for the names of vertebrates used more than once are given in tables that accompany the text. As I discuss in Chapter 3, radiocarbon dates are not necessarily the same as calendar dates (see appendix 1); unless otherwise noted, the dates I provide here are the former.

It is standard in academic works to provide citations to the works of others in the text, as each work is called upon. With one exception, I have not done that here, because I do not want to interrupt the text with lengthy lists of the works on which I have depended so heavily. Instead, each chapter ends with a set of "Chapter Notes." Those notes provide the references I have used, often along with comments on those works. I have also used the chapter notes to discuss things that did not seem appropriate for the main text, including places that I think are worth visiting, from archaeological sites to local museums. The notes are an integral part of the book, but using them to provide the references has left the text far less cluttered than it otherwise would have been. The one exception I have made involves direct quotations: there, the source of the quotation is provided in the text itself.

If visitors to Great Basin National Park, Death Valley National Monument, Malheur National Wildlife Refuge, the Bonneville Salt Flats, Pyramid Lake, or the striking wilderness areas the Great Basin has to offer—Alta Toquima, Arc Dome, and Steens Mountain, for instance—have more meaningful trips for having read this book, I will be pleased. I have written it both for them and for those who live in the Great Basin today. If my scientific colleagues find it of value as well, I will be happier still.

This book represents a thoroughly updated version of an earlier work, *The Desert's Past: A Natural Prehistory of the Great Basin*, published in 1993 by the Smithsonian Institution and reissued in paperback in 1998. Most of the book is so different that it has earned a new title.

Donald K. Grayson
Seattle, Washington

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PART ONE

THE GREAT BASINS

CHAPTER ONE

Discovering a Great Basin

It was July 13, 1890, and the first Republican candidate for the presidency of the United States lay dying in a New York City boardinghouse, his son by his side, his celebrated wife, Jessie, in Los Angeles, a continent away. Seventy-seven years old, John C. Frémont had come to New York from Washington, where he had finally obtained a $6,000 yearly pension for his military service. That sum, Frémont hoped, would secure his family from the poverty that had marked their recent life, but he had not counted on dying so soon, and Congress had made no provision for continuing a pension in the absence of a pensioner.

The events that took place in Washington and New York that spring and summer echoed sequences that seemed to mark everything Frémont did: grand successes followed by remarkable failures. Born to loving parents but illegitimate at a time when that mattered; a hero to some in the Bear Flag Revolt of 1846 that led California to independence but court-martialed and convicted for what General Stephen Watts Kearny saw as mutiny; nominated for president but smeared as a "Frenchman's bastard" and defeated by James Buchanan; a millionaire in California but soon bankrupt; a Californian in the end but buried in New York because so many Californians opposed the use of public funds to bring him west for one last time. Ironies everywhere, but they especially surround his final resting place, overlooking a river named for the great explorer Henry Hudson—second place in death for one who desperately wanted first place in life but could never quite hold on to it. He was buried in New York, where not one significant place carries his name, and not in California, where he himself named so many significant things—Walker River, Owens Valley, and even the Golden Gate, above which he might have been buried. He was denied the final trip west by Californians, citizens of the very state his efforts had helped swing from Mexican to American control, citizens whose parents and perhaps even themselves had been spurred to come west by his *Report of the Exploring Expedition to Oregon and North California in the Years 1843–1844*. Buried not in California, where he had once been a hero, but in New York, the state to which he and Jessie had retreated in personal defeat after his twice-failed role as a Union general in the Civil War.

Of Frémont's successes, perhaps the grandest was his second expedition for the U.S. Bureau of Topographical Engineers. His first, in 1842, had gone from St. Louis to just beyond South Pass in the northern Rocky Mountains of Wyoming, an expedition that he made with Kit Carson—John and Jessie Frémont together turned Kit into a legend—as one of his guides. The second expedition was to go much farther.

Although following from, and funded as a result of, the expansionist dreams of Thomas Hart Benton, the powerful senator from Missouri and Frémont's father-in-law, it is not clear what unwritten goals Frémont carried with him on this second excursion deep into the American West. What is clear is that he went farther than his written orders allowed, wintering in Mexican California even though he was a representative of the American military. It is also clear that he had no written authorization to bring along a twelve-pound mountain howitzer, the famous Frémont cannon.

He left St. Louis in May 1843; three months later, he was back at South Pass, the terminus of his first expedition, but now simply the jumping-off point for the work that was to make him famous (figure 1-1). Accompanied once again by Kit Carson, Frémont made his way south to the Bear River, his description of which was to be crucial in guiding the Mormons to Salt Lake Valley in 1847. On September 6, the expedition reached the Great Salt Lake, Frémont's "Inland Sea, stretching in still and solitary grandeur far beyond the limit of our vision" (Frémont 1845:151).

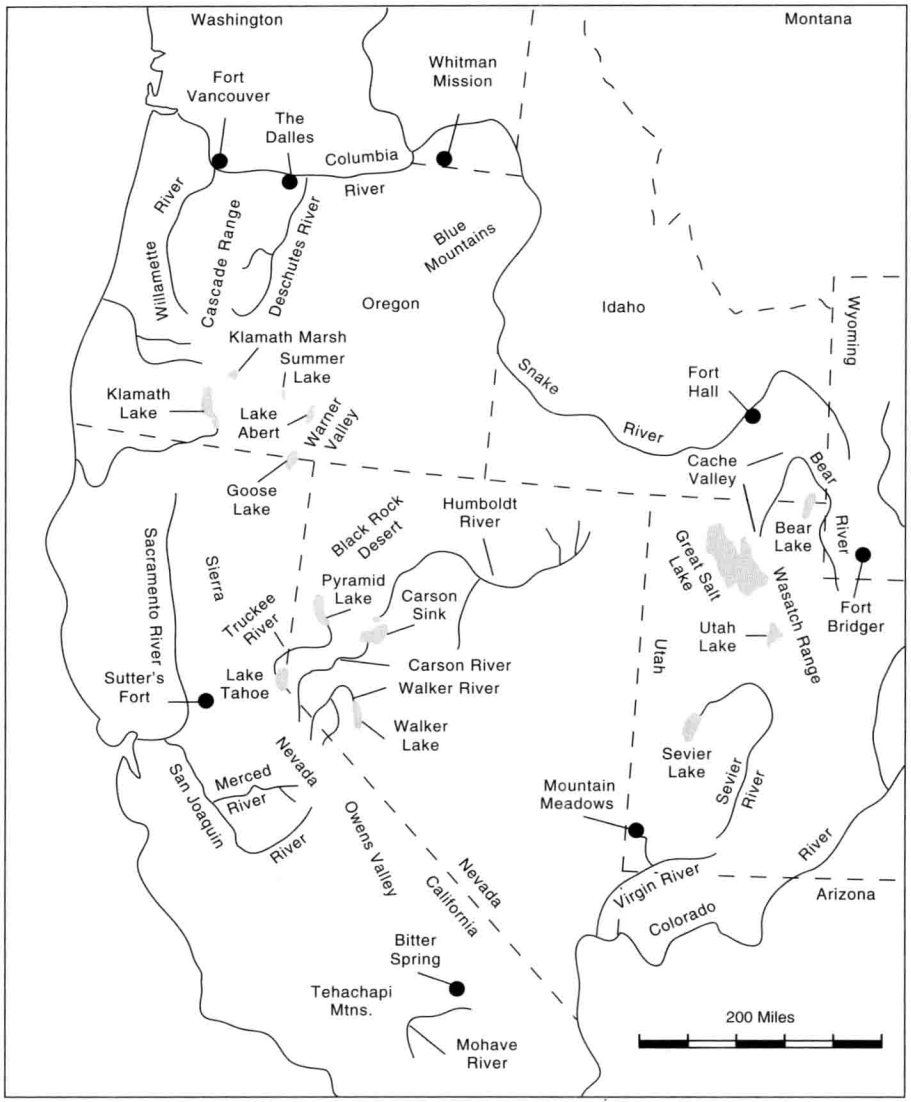

FIGURE 1-1 The American West.

The Great Salt Lake was a major target of the party's work and it spent nearly a week here, exploring the lake's shores by foot and its waters by boat. The expedition renewed its journey on September 12, heading north to Fort Hall on the Snake River, then down along the Snake River to Fort Boise in western Idaho. From here, the explorers cut across the Blue Mountains of northeastern Oregon, reaching Marcus Whitman's mission just east of the Columbia River near modern Walla Walla, in southeastern Washington, on October 24. They then traveled west along the Columbia River, arriving at Fort Vancouver on November 8.

Fort Vancouver moved several times during its history, but when Frémont arrived, it was on the north side of the Columbia River, just north of the mouth of the Willamette River. Today, it is within the city limits of Vancouver, Washington, and a reconstructed version exists as the Fort Vancouver National Historic Site. At 300 feet wide and 700 feet long, it was massive, the Hudson's Bay Company's prime redistributive and administrative center in this part of the world. Ships came up the Columbia River to supply the fort and to be supplied with furs (the British bark *Columbia* was there when Frémont arrived). The Fort also served as a stopping-off point for the growing number of American emigrants who were then entering Oregon's Willamette Valley, some 2,400 of them in 1843 and 1844.

Frémont was well treated at Fort Vancouver, as were all others who came here, but he stopped only long enough to stock up for the return home. His orders for that return were simple. "Return by the Oregon road," Colonel J.J. Abert had ordered, "and on again reaching the mountains, diverge a little and make a circuit of the Wind river chain" (Jackson and Spence 1970:160). But the "Oregon Road" was pretty much how Frémont had come to be where he was, and he was not about to return the way he had gotten there. When

Frémont stocked up, he did so for a far more rigorous journey, and by the time he had returned to The Dalles, on the eastern edge of the Columbia's passage through the Cascade Range, he had three month's worth of supplies for his twenty-five men, along with a herd of cattle and 104 mules and horses. And, rather than heading east from The Dalles, as Abert's orders indicated he should, he headed south.

Leaving The Dalles on November 25 in the midst of flurrying snow, Frémont moved south along the eastern flank of the Cascades, past the Metolius River, past the headwaters of the Deschutes, and south to Klamath Marsh. Arriving at the marsh on December 10, Frémont used his cannon for the first time, discharging it to impress the Indians whose fires were visible across the marsh. These were the Klamath, Frémont knew, but he was incorrect in thinking that this was Klamath Lake and that the river he had found here—the Williamson—was the Klamath River. In fact, Klamath Lake was still thirty miles to the south. But thinking he had found the lake, Frémont spent several days at this spot, resting his horses, exploring, and even buying a little dog that he named Tlamath. Once satisfied with what he had seen, he headed east, leaving on December 13. Three days later, after the explorers forced themselves, their animals, and the howitzer through deep and crusted snow, the woods suddenly ended:

> We found ourselves on the vertical and rocky wall of the mountain. At our feet—more than a thousand feet below—we looked into a green prairie country, in which a beautiful lake, some twenty miles in length, was spread along the foot of the mountains, its shores bordered with green grass.... Not a particle of ice was to be seen on the lake, or snow on its borders, and all was like summer or spring.... Shivering on snow three feet deep, and stiffening in a cold north wind, we exclaimed at once that the names of Summer Lake and Winter Ridge should be applied to these two proximate places of such sudden and violent contrast. (Frémont 1845:207)

These places still bear the names Frémont gave them, a highway marker on Oregon State Route 31 pointing out where Frémont and his men suffered their way down Winter Ridge on the evening of December 16, 1843, leaving the howitzer halfway up, to be retrieved the next day. Now, he said, they were "in a country where the scarcity of water and of grass makes traveling dangerous, and great caution was necessary" (Frémont 1845:208). Frémont had entered the Great Basin.

From here, the group continued south and east, farther into the Oregon desert. Lake Abert came next, so named by Frémont "in honor of the chief of the corps to which I belonged" (Frémont 1845:209), then farther south and east to Warner Valley, where Christmas Day was celebrated with a blast from the howitzer. Crossing the 42nd parallel, which today marks the boundary between Nevada and Oregon but which then marked his passage into Mexican territory, they moved deeper into northwestern Nevada: High Rock Creek, it seems; then Soldier Meadow; then, on New Year's Day, along the Black Rock Desert through what is now Gerlach, Nevada; and then, on January 11, to Pyramid Lake, "a sheet of green water, some twenty miles broad [that] broke upon our eyes like the ocean" (Frémont 1845:216). Here they rested, trading for cutthroat trout with the Northern Paiute who occupied the shores of the lake, allowing their horses to feed, killing the last of their cattle, and getting their howitzer unstuck from the steep shores of the Lake Range that forms the eastern edge of Pyramid Lake.

The lake itself they named from the "very remarkable rock" they saw jutting from it, a rock that to them "presented a pretty exact outline of the great pyramid of Cheops" (Frémont 1845:217). Once recuperated, they followed the Truckee River south, and then left it as it swung west toward the Sierra Nevada. Instead, they headed south to hit the Carson River, named by Frémont for the scout whose legend he had begun.

It was here, in the Carson Valley on January 18, that Frémont said he made his decision to cross the Sierra Nevada into California, though there are indications that the decision had been made well before. Faced with horses in poor condition and with no means of making shoes for them, Frémont "therefore determined to abandon my eastern course" (Frémont 1845:220) and to cross the Sierra Nevada into California.

The expedition's passage over the Sierra Nevada was one of remarkable hardship; it is to Frémont's great credit that the members all survived. Frémont himself became lost, knowing mainly that they had to go west and that they had to go up. They first tried going up the East Walker River, then gave up and followed the West Walker. They ended up in snow deep enough to bury their horses; the only way through was to build a road by stamping down the snow and covering it with pine boughs. On February 10, Frémont established what he called Long Camp, where, three days later, hunger forced them to eat their dog Tlamath. Thusly fueled, Frémont and his dyspeptic but talented cartographer and illustrator Charles Preuss then climbed nearby Red Lake Peak and became the first to record seeing Lake Tahoe. The party then forced its way over the top, through Carson Pass, eating horses and mules as it went, stumbling and crawling through the snow, emerging into the green California spring on February 24. On March 6, they finally reached the American River, only a mile from the Sacramento River and Sutter's Fort. They had left The Dalles with 104 horses and mules; they had begun their ascent of the Sierra Nevada with 67; they arrived at Sutter's Fort with 33 exhausted and nearly useless animals. Another, less animate loss was the howitzer: this they had abandoned on January 29, somewhere along the western flank of the Sweetwater Mountains, its whereabouts still a debated mystery. "If we had only left that ridiculous thing at home," Preuss had grumbled months earlier (1958:83), and now it was gone.

Three weeks at Sutter's Fort saw both men and animals revived. They left on March 24, this time with 130 horses

and mules and some 30 cattle. Rather than moving north and out of Mexico, they went south and deeper into it, following the San Joaquin Valley to southern California's Tehachapi Mountains, crossing over them and into the Mojave Desert a few miles south of Tehachapi Pass. Back in the Great Basin again, they moved mostly east, hitting the Mojave River near what is now Victorville, California, and roughly following the Spanish Trail across southern California and southern Nevada into Utah. At Bitter Spring in southern California's Mojave Desert, Kit Carson and his companion Alexander Godey revenged the deaths of a party of Mexicans, and the stealing of their horses, by tracking down and scalping two of the Indians who had done the killing. "Butchery," Preuss disgustedly called it (1958:128), and it was a sign of the savage ferocity for which Carson was later to become infamous. Then, along the Virgin River near Littlefield, Arizona, one of Frémont's own—Jean Baptiste Tabeau—was killed by Indians on May 9, the first of his men to die (a second, François Badeau, was to die on May 23 from a gun-handling accident).

Leaving the scene of Tabeau's death, the expedition moved northward, reaching Mountain Meadows on May 12. Thirteen years later, this site, on the very fringe of the Great Basin in southwestern Utah, was to become the location of a Mormon-engineered massacre of some 120 emigrants from Arkansas and nearby states. For Frémont, however, it was simply a "noted place of rest and refreshment" (Frémont 1845:271). Equally important, as the expedition left Mountain Meadows, it was joined by Joseph Walker, one of the most famous of western backwoodsmen. It was Walker who guided the group north to the Sevier River and then to Utah Lake, south and east of the Great Salt Lake. Finally, on May 27, Frémont and his men headed east into the Wasatch Range and out of the Great Basin. On August 6, nearly fifteen months after his departure, Frémont was once again in St. Louis.

Frémont had thus struggled his way south from the Columbia River, deep along the eastern edge of the Great Basin, and then over the Sierra Nevada in the dead of winter. He had then moved even farther south in the interior valleys of Mexican California and then east across one of the most challenging deserts in North America, ultimately swinging north to nearly rejoin his original diversion into the Great Basin at Great Salt Lake.

His orders, however, directed him to return by the Oregon Trail, not by the Spanish Trail, some five hundred and more miles to the south, and those orders said nothing about California. He explained his entry into California by the situation in which he found himself in January 1844. Why, however, did he swing so far south from the Columbia River, and from the Oregon Trail, in the first place? Just as Frémont used his *Report* to justify his decision to enter California, he also used it to justify making this move.

There were, he said, three prime geographic reasons for making this "great circuit to the south and southeast." The first was to find Klamath Lake and explore the Klamath country, then poorly known. The second was to find and explore Mary's Lake, the sink into which the Humboldt River flows in western Nevada and that is now called Humboldt Lake. Third, he wished to locate, if it existed, the Buenaventura River, "which has had a place in so many maps, and countenanced the belief of the existence of a great river flowing from the Rocky mountains to the bay of San Francisco" (Frémont 1845:196).

Of these goals, Frémont approximated achieving the first, but failed at the second. He explored the Klamath country, but never found Klamath Lake, having mistaken it for Klamath Marsh, to the north and east. This was hardly his fault, since he also referred to the "imputed double character" of Klamath Lake as "lake, or meadow, according to the season of the year" (Frémont 1845:196), a description that applies not to the deep and permanent Upper Klamath Lake but that fits Klamath Marsh well.

After leaving the Klamath country, however, his movements south from Warner Valley and past Pyramid Lake brought him well west of Humboldt Lake, and his *Report* provides no clarification of the location and nature of the sink of the Humboldt except that it could not be found the way he went.

Ironically, even though Frémont himself was to name the river "Humboldt" during his next, 1845, expedition, he saw neither lake nor river until the summer of 1847. And, when he finally saw Humboldt Lake, he was heading eastward in the forced tow of Stephen Watts Kearny, who was to have him arrested and court-martialed for actions he had taken during the Bear Flag Revolution and the acquisition of California for the United States.

The Klamath country and Humboldt Lake existed, and in that sense were quite different from the Buenaventura, one of the most enduring myths that the geography of North American deserts was to provide, a myth that has its roots in the earliest entry of Europeans into the Intermountain West. In 1775, the Franciscan Father Francisco Garcés, a member of Juan Bautista de Anza's second expedition to forge overland routes linking the settlements of Sonora and New Mexico with those of coastal California, traveled up the Colorado River to somewhere near the current location of Needles, California. Garcés then headed west, reached and followed the Mojave River westward, and then crossed into the San Joaquin Valley. While there, he gained the impression that the Kern River cut through the Sierra Nevada; told of the San Joaquin River, he thought that this cut the Sierra Nevada as well. Indeed, Anza himself reached San Francisco Bay in 1776, and his diarist, Father Pedro Font, mistook the rivers that flowed into this bay for a large body of freshwater that reached east of the Sierra Nevada. So the myth began.

On July 29, 1776, Fathers Francisco Domínguez and Francisco Escalante left Santa Fe to find an acceptable overland route to Monterey, which had been established in 1770. They headed north through western Colorado and hit the Green River. This they named the San Buenaventura, after the biographer of St. Francis. From here, they moved west, crossing the mountains and reaching Utah Lake. While at

Utah Lake, they were told of the Great Salt Lake and may have assumed, from its salinity, that it had an outlet to the sea. Moving south, they crossed the Sevier River, which they thought was part of the San Buenaventura. Abandoning the idea of reaching Monterey on this trip—a wise decision, given the way they had gone—they continued south and returned to Santa Fe in January 1777.

Maps were soon produced that incorporated and compounded these errors. By the early 1800s, influential maps showed the Buenaventura River flowing from the far eastern Great Basin, and usually from Sevier or Great Salt Lake, to the Pacific Coast. John Melish's map in 1809, John Robinson's map in 1819, Alexander Finley's map in 1830, and even the map produced by the Society for the Diffusion of Useful Knowledge in 1842 provided for such a river.

A river that flowed from the Rockies to the Pacific Coast in this region would be of tremendous economic importance, since it would provide a means for the transportation of people and goods to and from California. Moving the former was important if the United States were to stretch from coast to coast. Moving the latter was important if the United States were to become a major player in trade with Asia. As Richard Francaviglia has noted in his important book on the mapping of the Great Basin, these early maps were "blueprints for American expansion" (2005:73), and the Buenaventura itself a river of empire. If the Buenaventura were real, it had to be discovered and charted.

But the Buenaventura was not real, and seasoned explorers of the West soon became aware of that. In 1826, Jedediah Smith traveled from Cache Valley to the Great Salt Lake, then south to the Colorado, turning west across the Mojave Desert to reach the San Bernardino Valley. Denied permission from the Mexican governor to travel north to San Francisco, he did so anyway, since he wanted to return by following "some considerable river heading up in the vicinity of the Great Salt Lake" (G.R. Brooks 1989:77–78).

Smith didn't find that river, and in May 1827, he left his men along the Stanislaus River and, accompanied by two others, became the first non-Indian known to have crossed the Sierra Nevada. Apparently moving through Ebbett's Pass south of Lake Tahoe, his return trip to the Great Salt Lake took him south of Walker Lake and through south-central Nevada. He headed back to his men almost immediately, taking the southern route via the Colorado River and Mojave Desert to San Bernardino Valley.

Late in 1827, he and his companions began the move north up the Sacramento Valley to the Trinity and Klamath rivers, then north up the Pacific Coast to the Umpqua River, where fifteen of his men were killed by Indians. Frémont later referred to this episode to explain why he fired his cannon at Klamath Marsh. By the time Smith reached Fort Vancouver in August 1828, he knew that no river south of the Columbia cut through either the Cascades or the Sierra Nevada.

Smith did not keep that information to himself, writing to William Clark (of Lewis and Clark, and then Superintendent of Indian Affairs) to tell him of his travels, thus informing him that the Buenaventura did not exist. "By Examination and frequent trials," Smith wrote, he "found it impossible to cross a range of mountains which lay to the East" (D.L. Morgan 1964:340).

Although Smith died before he could complete his projected book on his travels, William Clark and Thomas Hart Benton were good friends and fellow expansionists who routinely discussed what was known of the geography of western North America. Surely if by no other route than this, Frémont would have known that the Buenaventura did not exist. Indeed, in 1829 and 1830, Frémont's friend and guide, Kit Carson, had crossed the Mojave Desert from the east and traveled up the interior valleys of California. As Carson noted on seeing the Sacramento Valley with Frémont in 1844, "I knew the place well, had been there seventeen [*sic*] years before" (H.L. Carter 1968:90). There was even an important map, by David Burr, geographer for the U.S. House of Representatives, published in 1838, which incorporated data provided by Jedediah Smith and other explorers that depicted the Sierra Nevada as a massive barrier crossed by no river coming from the east.

Arrayed next to such information, however, were the many contemporary maps that did continue to show such a river. As Frémont noted, the Buenaventura formed "agreeably to the best maps in my possession, a connected water line from the Rocky mountains to the Pacific ocean" (Frémont 1845:205). If Frémont really did not know that the river was fictitious, then finding it could have been a legitimate and major goal of his intermountain explorations, and an excellent reason to move so far south from the Columbia River and the Oregon Trail. If he knew it did not exist, he did not let on, and the river became a prime justification for being where he had not been told to go, and it certainly became a major literary device in reporting the results of his explorations.

By the time Frémont reached southern California, he knew that there was no such river. In his *Report* entry for April 14, 1844, the day his party crossed over the Tehachapis, Frémont let his readers know as well:

> It had been constantly represented ... that the bay of San Francisco opened far into the interior, by some river coming down from the base of the Rocky mountains, and upon which supposed stream the name of Rio Buenaventura had been bestowed. Our observations of the Sierra Nevada ... show that this neither is nor can be the case. No river from the interior does, or can, cross the Sierra Nevada. (Frémont 1845:255)

The Columbia was the only river that led from the deep interior to the Pacific Ocean, and this was far to the north. Frémont had followed the mountains south from the Columbia to southern California, and he knew this to be the case. While other explorers had known for more than a decade that the Buenaventura did not exist, Frémont's *Report* brought the news to a wide audience and put the myth to a decided end.