Chapter 1 To Save a Mountain Lion: Evolving Philosophy of Nature and Cougars

R. Bruce Gill

No one knows the specifics of the first encounter between humans and cougars, but it could easily have gone this way: The air was cold and sharp on a bright autumn morning, perhaps in Alberta, likely some 10,000 to 20,000 years ago. A herd of deer grazed unconcerned and unaware that two starkly different predators stalked them from opposite directions. From the south, a large, sleek, strong, stealthy cat crept slowly and deliberately, employing every bit of available cover. From the north, a group of two-legged predators cautiously positioned themselves among boulders adjacent to the travel path of the deer. Compared to the cat, the two-legged hunters were slow and clumsy; armed with atlatls, stone axes, knives, and extraordinary intelligence and cooperation, however, they were the equal of any prey or predator (Merchant 2002).

The deer wandered to within ten meters of the humans, who patiently waited for the opportune moment to strike. Meanwhile, the cougar had approached to within twenty meters and, with tail twitching, waited like the humans until all the deer were feeding. Then both predators struck simultaneously. The lead human arose quickly and launched a spear at the nearest deer. The cat leaped, covering ten meters in the first bound. Both struck their prey with deadly force, immediately discovering the competition. At that moment, the first human immigrants to America met their most widespread predator (Young and Goldman 1946a). With that first encounter, a philosophical relationship was inaugurated that would vacillate between reverence and warfare.

First Philosophy

The beliefs and attitudes that the first immigrants brought with them to the New World are not known because no historical records exist. But one has only to view the cave-art paintings of their Western European contemporaries in Lascaux, France, for a sense of the force that large animals and awe of the natural environment exerted in their art and religion (Bataille 1955; Hadingham 1979). Petroglyphs in North America provide us with a similar window on early worldviews (Figure 1.1).

Figure 1.1 A dramatic rendering of a cougar is among the petroglyphs in Petrified Forest National Park, Arizona. Discovered in 1934, the petroglyph, dated between 1050 and 1250 AD, is the work of the Anasazi or Ancestral Puebloans. Photo courtesy of T. Scott Williams, Petrified Forest National Park, NPS.

Spiritualism and Connectedness

European immigrants arriving in North America in the sixteenth century encountered stories, legends, myths, and ceremonies of the Native Americans that revealed much about the natural philosophies of the natives' earliest ancestors. Among these early people, all experiences with nature were embedded in a metaphysical dimension. Their theology of nature was both physical and spiritual. They considered themselves as but one part of nature rather than apart from it, as later immigrants would believe (Hughes 1996).

All things, both animate and inanimate, were possessed of a spirit, and all spirits were interconnected. Individual spirits emanated from the Great Spirit, who was the creator of the universe and greater in both power and influence than the sum of the individual spirits (Brown 1997; Kracht 2000). The Lakota Sioux holy man John Lame Deer explained the concept this way:

> Nothing is so small and unimportant but it has a spirit given it by Wakan Tanka. Tunkan is what you might call a stone god, but he is also a part of the Great Spirit. The gods are separate beings, but they are all united in Wakan Tanka. It is hard to understand—something like the Holy Trinity. You can't explain it except by going back to the *circles within circles* idea, the spirit splitting itself up into stones, trees, tiny insects even, making them all *wakan* his ever presence. And in turn all these myriad of things which makes up the universe flowing back to their source, united in one Grandfather Spirit. (Erdoes 1976, 102–3)

Spirits could be beneficial or detrimental, depending upon circumstances. Balance within the spirit world, therefore, was critical because spiritual harmony was necessary for the survival of all life. To maintain this spiritual balance, Native Americans developed elaborate ceremonies of prayer and sacrifice to placate the spirits of those others who were necessarily taken to sustain their own. Pre-Columbian Americans also believed that spiritual power was hierarchical, with the sun possessing more power than the earth and the eagle being stronger than the buffalo (Boas 1930).

Philosophical Pillars

The Native American understanding of nature rested on four broad pillars. First, all was sacred and everything in nature was inherently spiritual. Second, all was interrelated and one could not act upon one element of the environment without affecting all others. Third, all elements of creation shared a spiritual kinship with Mother Earth. Native Americans regarded themselves as part of the land, not apart from it. Fourth, people were obliged spiritually and ethically to respect Mother Earth and her inhabitants. They had to act righteously to preserve and maintain the complex physical and spiritual balance of nature (Calicott 1982; Booth and Harvey 1990; Jostad et al. 1996).

A Predator's Place

As a result of their reverence for nature, Indians espoused a conservation philosophy consisting of two simple tenets: take only what you need and use all of what you take. They enforced this through customs and taboos that functioned like modern game laws. The Utes would not kill the gray jay because they believed the bird's raucous call helped hunters detect predators. The Gosiutes of Nevada had a custom of waiting twelve years between antelope drives to allow the herds to replenish. Although members of several tribes hunted predators to inherit their power, no predator was hunted with the intent to exterminate the entire species (Kracht 2000).

Since predators possessed more power than their prey, frequently they were invoked as spiritual guardians to ward off enemies, sickness, and disaster (Hultkrantz 1981; Hughes 1996). Several tribes, particularly those of the southwestern United States, regarded the cougar as an icon of power, protection, and friendship. The cougar was regarded so reverently by some native peoples in southern California that even in modern times some refused to kill the cats even to protect livestock from depredations (Tinsley 1987; Bolgiano 2001).

Although reverence for the cougar was virtually universal among Native Americans, the ceremonial specifics varied. Pueblo people accorded the cougar the top of the hierarchy of the beast gods. Because it was such a superb hunter, it possessed great power and was a patron deity of hunters and warriors (Saunders 1998). Early Pueblos carved two elaborate stone lion statues (Figure 1.2) at the Cochiti Pueblo to invoke the cougar spirit's hunting prowess (Saunders 1998). Among the Zunis, the cougar was considered the master of all prey gods. Prey gods guarded the Zunis from threats to the north, south, east, and west, as well as from the earth and sky. The cougar guarded the north god, a direction of great spiritual significance (Cushing 1883). The Navaho celebrated the cougar way of hunting in their rituals. Cougars were believed to possess powers that greatly augmented success among Navaho hunters.

The Cheyenne tell a traditional story of a woman who had lost her child. While mourning, she wandered into the woods and came across a den of motherless cougar kittens. She nursed the kittens until they could survive on their own. In gratitude, they returned the favor by bringing her a share of their kills. From this legend came the belief that the cougar was both provider and friend (Seger 1905).

Figure 1.2 The Shrine of the Stone Lions, near the ruins of Yapashenye on Portrero de la Vaca in what is now Bandolier National Monument, are among the largest relics of antiquity found in New Mexico. Governor L. Bradford Prince brought them to public attention in *The Stone Lions of Cochiti* (Prince 1903). Photo by David E. Brown.

Figure 1.3 South American Indians used three-strand throwing devices called bolas for hunting the puma (Young and Goldman 1946b).

Despite its strong spiritual context, the relationship between early Americans and cougars was not entirely peaceful; occasionally, it was also lethal (Bolgiano 2001). Cougars killed humans for food and in self-defense. Their method was simple, consistent, and effective: stalk, wait, and ambush. Humans killed cougars for protection and to gain the power that could only be obtained by killing one. The methods people used to capture and kill cougars were diverse, ingenious, and deadly. The Incas, for example, conducted circular drives in which as many as 30,000 individuals formed a large circle several miles in diameter. Gradually, they closed the circle, working steadily inward. All predators thus encircled were killed (Young and Goldman 1946a).

Central American natives waited in ambush at night for cougars that they attracted with instruments made from hollowed bone or branches. The instruments imitated the calls of distressed prey of jaguars—the original "varmint calls" (Tinsley 1987). Some South American Indians used bolas, a three-strand throwing device tipped with weighted balls (Figure 1.3). When successfully cast, it entangled the limbs of a cougar and immobilized the animal. Regardless of how cougars were killed, they were taken ceremoniously with great deference and reverence so that the cougar's spirit would reciprocate by empowering and protecting the bearer of its icons (Saunders 1998). But the world of the cougar changed dramatically when European immigrants began to invade America beginning in the fifteenth century.

Feckless Philosophy

The second wave of Americans brought a new religion based upon homocentric ideas of dominion and private property ownership. The perspective of these immigrants was feckless compared to the reverential attitude of their predecessors. The new arrivals brought domesticated animals and food plants to lessen their dependence upon nature. Both their religious and natural philosophies taught them they had the right to use, alter, or destroy anything in nature that impeded progress. Likewise, anything that satisfied their amusements was fair game (Kline 1997). The entire belief and value structure of the new settlers was decidedly antinature.

Colonization

The colonists saturated their views of nature with intense moral connotations that assigned natural objects to the absolute ethical categories of good or bad (Kleese 2002). Wilderness was considered bad for several reasons. It was feared because it was populated by strange, wild predators that preyed upon domestic livestock and, occasionally, humans. Wilderness was inconvenient because it obstructed travel and the expansion of agriculture; forests quickly reinvaded clearings unless vigorously and regularly removed. Wild places were considered untidy because they were not well kept like the manicured landscapes of Europe. So the colonists attacked wilderness with both vengeance and evangelism (Davis 1996; Kleese 2002; D. Foster et al. 2004). Their perspective toward nature was born not only from greed, arrogance, and ignorance but also from the considerable grief and agony the wilderness caused them (Taylor 1995). Conquering the wilderness, including the cougar, was as much about security as it was about dominance.

First to fall were the old-growth forests of the East. Prior to sixteenth-century colonization, old-growth forests occupied as much as 950 million acres of land (Davis 1996). Under the onslaught of saw, axe, and plow, deforestation

occurred so rapidly that, by 1800, residents of New York fretted about a fuel wood shortage in the Hudson River valley (Taylor 1995). By the mid-1800s, from 50 to 75 percent of the eastern landscape consisted of open agricultural land, exceeding 90 percent in some locales (Foster et al. 2004).

As forests gave way to farm lots, wildlife dwindled in response partly to vanishing habitat and partly to direct slaughter from shooting, trapping, and poisoning. Of the forest animals, predators, including cougars, were singularly despised (Kleese 2002). Faced with rampant habitat loss and unrestricted hunting, white-tailed deer numbers plummeted. So rapidly did deer populations decline that hunting seasons were closed as early as 1639. Nonetheless, over most of the eastern range of the white-tailed deer, market hunting continued relentlessly and between 1755 and 1773 accounted for the exportation of 600,000 deer hides from Savannah, Georgia, alone (Demarais et al. 2002).

As populations of deer and other prey species began to decline, cougar populations also began to wane. Human persecution, however, was the final nail in the eastern cougar's coffin. Throughout the eastern United States, every settler owned a gun and every predator was a target. Opportunistic killing alone probably would not have doomed the cougar. But when bounties were established, a cadre of professional killers emerged who specialized in predator hunting. Some made their entire living from bounties collected by killing predators. The bounty hunters used diverse methods to kill their quarry. Pit traps, steel traps, guns, and poisons all were employed with varying success (Young and Goldman 1946a).

Encircling drives were adapted from the Amerindians and were employed frequently by communities throughout the East to rid areas of vermin. Approximately two hundred individuals would form a large circle up to thirty miles in diameter and gradually close it inward, using guns, bells, dogs, fires, and other disturbances to drive animals inward. On one particular drive, 41 cougars, 109 wolves, 112 foxes, 114 "mountain cats" (lynx and bobcats), 17 black bears, 12 wolverines, 3 fishers, an otter, and a grizzly bear were dispatched (Danz 1999). By the mid- to late 1800s, the combination of habitat loss, prey depletion, and dogged human persecution had taken its toll. Cougars were exterminated from areas east of the Mississippi River except for small, isolated remnant populations in Florida and, perhaps, Louisiana (Cardoza and Langlois 2002).

Settlement

As civilization expanded westward, so did the carnage. The plight of cougars and other carnivores was dictated by a sequence of events. First, as the European immigrants expanded westward, they clashed increasingly and violently with the American Indians. As these clashes increased in frequency and violence, white settlers urged the U.S. Army to confine Native Americans to reservations. After Colonel George A. Custer's death in 1876 at the Little Bighorn River in Montana, demands to confine Native Americans to reservations rose to a clamorous din (M. Wilson 2002). A strategy was developed to hasten their confinement. One part of the strategy called for the elimination of the bison to make the native tribes dependent upon beef provided by the Bureau of Indian Affairs.

Market hunters, already bountifully engaged in provisioning settlers and railroad workers with meat, were encouraged to slaughter bison without restraint. They killed bison by the tens of thousands, often taking only hides; additional thousands were killed by sport hunters. In less than one hundred years, bison declined from millions to near extinction (Garreston 1938; Haines 1970).

The demise of the bison affected large predators in at least three significant ways. First, it greatly reduced the number of available prey, thus reducing predator numbers and forcing survivors to find alternative prey. Second, it left a vacant niche that was almost immediately filled with rangeland livestock, bringing large predators into direct conflict with human commerce. Third, it increased both predator depredations on domestic livestock, especially by wolves, and the scope and intensity of government predator control programs.

Loss of the bison probably did not greatly affect cougars directly. They were distributed only sparsely throughout the Great Plains, primarily inhabiting the wooded stream bottoms and brushy feeder gullies (Young and Goldman 1946a). It was a nexus of events, including the discovery of gold and other precious minerals in the West, the growth of the western market hunting industry, the completion of the transcontinental railway, and the arrival of rangeland livestock that put western cougars and man on a collision path (Trefethen 1975; Robinson 2005).

At first, most of the pioneering settlement of the West occurred across the Great Plains, but with the discovery of gold in California in 1848 and in Colorado in 1859, hordes of hopeful miners invaded the foothills and mountains. Events that occurred during the settlement of the East were repeated. Forests were felled and game was depleted to meet the needs of the expanding human populations. By the early 1900s, deer, elk, pronghorn, and bighorn sheep were rare across most of their former range (Kie and Czech 2000; Gill 2001a; Robinson 2005; Heffelfinger 2006).

Predator Wars

Wholesale slaughter of the bison and other wild game provided predators, especially wolves and coyotes, with a

surfeit of carrion, initially prompting a sharp increase in their numbers (McIntyre 1995; Robinson 2005). Once the carrion supply was exhausted, predators switched to domestic livestock. Because wolves were the most problematic, they were marked for extermination. As in the East, bounties were placed on their heads to encourage hunters to take as many as possible. Although bounties resulted in countless predator deaths, even this system probably would not have eliminated predators completely. It took a combination of bounties, traps, ready access to cheap and effective poisons, and the formation of a government predator control program to doom both the wolf and the grizzly bear (Young 1946a; Danz 1999; Robinson 2005).

From 1840 through 1860, domestic livestock were uncommon in the West (Voight, 1976; Holechek et al. 2004; Hess 1992). Upon completion of the transcontinental railway system in 1879, however, national and European markets became accessible, stimulating rapid growth in western livestock numbers. By 1870, there were an estimated 4.7 million cattle in the seventeen western states, and by 1884 cattle numbers peaked between 35 and 40 million head. The western sheep industry meanwhile also was expanding. Numbers of range sheep grew briskly between 1880 and 1890 and peaked around 1910 (Holechek et al. 2004).

The westward movement of settlers was gradual during the early years of the nineteenth century. Much of the West remained sparsely settled until the discovery of gold at Sutter's Mill near Sacramento, California, in January 1848. That discovery spawned a mass westward migration along the Oregon-California Trail. Although the original lure for settlers was the offer of free land in Oregon, following the discovery of gold in California more than 200,000 people went to the gold fields (Dary 2004).

Then, in 1859, gold was discovered at Cripple Creek in south-central Colorado, bringing an additional 60,000 to 100,000 immigrants. Many travelers stopped along the way and established farmsteads and ranches. As miners surged into mountain valleys, they demanded fresh meat. Initially, buffalo supplied by hordes of market hunters filled the demand. However, by the mid-1860s too few bison were left to meet the demand. Market hunters began to turn to other sources of wild game. Roads proliferated into the mountains to access mining communities. Game was rapidly depleted from the plains and market hunters concentrated on mountain populations of deer, elk, and bighorn sheep. Market hunting intensified between 1880 and 1900 and caused numbers of big game animals to plummet throughout the West.

As livestock replaced bison all across western ranges, ranchers formed grazing associations to protect their grazing monopolies and enhance their political influence. The first of these associations, the Colorado Stock Growers, was formed in 1867. Soon other states followed the Colorado example (Voight 1976). As their political power grew, the livestock associations successfully lobbied territorial and state governments to take over predator bounty programs. By 1914, state and territorial governments were spending more than $1 million per year to fund bounty programs (Young 1946a; Robinson 2005). Bounty programs were expanded to include grizzly bears, coyotes, and cougars shortly thereafter (Young 1946a; Young and Goldman 1946a).

In 1907, the federal government entered the picture. The newly fledged U.S. Forest Service agreed to control wolves on national forest lands in exchange for an agreement from the livestock industry to accept grazing fees. Federal predator control authority was transferred from the Forest Service to the Bureau of Biological Survey in 1914. The following year, Congress allocated the Bureau $125,000 to assist in organizing predator control operations on forests and other public lands (Cameron 1929; Young 1946a). The Bureau began assembling a staff of professional hunters and trappers who were expected to devote themselves full time to prosecuting the war on predators. The combined effects of bounties, poisons, and government agents drove both the grizzly and the wolf to near extinction (McIntyre 1995; Robinson 2005).

Cougars fared better than wolves and grizzlies for at least three reasons. First, they were not easily attracted to poisoned baits. Second, they were much harder to trap because they seldom scavenged. Third, they were mostly solitary and widely dispersed, making their control uneconomical. However, as the Bureau increased its staff of predator control agents, eventually they recruited professional hunters who specialized in cougar hunting.

Scattered throughout the West during the late 1800s and early 1900s were colorful characters who devoted their lives to hunting cougars (Figure 1.4). They were expert at training and using dogs to pursue the elusive cats. A handful of legendary cougar hunters were responsible for the deaths of nearly a thousand cougars each during their hunting careers. More important, they demonstrated how effectively a single hunter with dogs and determination could catch and kill cougars. They set the example for the government cougar hunters who would soon follow (Danz 1999).

By the early 1900s, the efforts of the professional hunters and a cadre of recreational hunters had significantly diminished cougar numbers, reducing their range to nearly half of the original North American distribution (Logan and Sweanor 2000; See Range Map, p. vii). Nonetheless, by the 1930s the Bureau of Biological Survey (since 1940 the U.S. Biological Survey) employed more than two hundred professional cougar hunters to protect livestock from depredations (Tinsley 1987).

Figure 1.4 Jay Bruce was a notable bounty hunter in California. Born in 1881, he made his first lion hunt in 1915 and killed more than seven hundred lions over the next thirty years. He was publicly credited with promoting California's deer population and helping protect livestock in the mountains. Photo courtesy of California Department of Fish and Game.

Forked Philosophy

At the dawn of the twentieth century, large predators in America were gripped in a struggle to survive (Dunlap 1988). Forests had been laid bare, rangelands were overgrazed, soils were gullied, and wild game was rare (Merchant 2002). Early on, the voices of Thoreau, Emerson, Catlin, and a few others protested the profligate waste. Although their protests did not curb the excessive destruction, they slowly stirred the collective public conscience and sowed the seeds for the nascent environmental movement (Kline 1997).

Other voices, primarily a newly emerging group of sport hunters, began to protest the unalleviated destruction of wildlife. They organized into sportsmen's clubs to promote ethical hunting of desirable game species. As species after species dwindled under relentless pressure from market hunters, sportsmen's clubs began to buy key hunting areas and wildlife habitats. Later, they successfully lobbied state legislatures to pass restrictive laws establishing shortened hunting seasons to protect females with young and limit the numbers of animals that could be taken. Numbers of both game animals and predators slowly began to rise (Trefethen 1975).

The Preservation Movement

By the early 1900s, the movement to save remnants of wildlands and wildlife had coalesced around two competing philosophies—*preservation* and *conservation*. Preservationists sought to preserve nature *from* people, while conservation sought to preserve nature *for* people. The primary value of nature preservation, according to preservationists, resided in amenities such as spiritual inspiration, scenic beauty, and psychological renewal. Conservationists proposed that nature's primary benefits were found in useful commodities such as timber, water, livestock forage, and minerals.

John Muir was the foremost leader of the preservationist movement. The son of a fundamentalist Scottish minister, Muir became disenchanted with the Christian concept of "soul-less" nature. The nature that inspired him was pervaded with spirit and soul. He often referred to wilderness as a "cathedral" and a "temple." Muir was both throwback and harbinger. His belief in the spirituality of nature evoked the perspectives of the Native Americans who preceded him, yet he also believed that inorganic and organic nature were functionally interconnected, anticipating the emergence of the scientific discipline of ecology (Fox 1981; Merchant 2002).

From the onset, Muir struggled with the contradiction that continues to plague the preservation movement even today. Although preservationists sought to protect nature from humans, they nevertheless needed public support to enact legislation creating nature preserves. Protecting nature from people alienated and abated public support.

Preservationists unexpectedly found themselves allied with a strange but powerful bedfellow. Near the turn of the century, the railroads were beginning to realize the economic potential of an emerging tourist industry. Railroad owners favored the preservation of sites with exceptional scenic beauty because they attracted tourists. By providing tourists with transportation, lodging, and food, the railroaders stood to make a handsome profit. Indeed, the number of visitors to newly created western parklands swelled from 69,000 in 1908 to 335,000 in 1915 (Kline 1997).

Three enduring legacies of the preservation movement are national parks, wilderness areas, and urban, county, and state parks and open space. Initially, the establishment of the national park system, beginning with Yellowstone National Park in 1872, had mixed results for cougars and other predators. "Good" wildlife, living in natural surrounds, was a powerful tourist attraction. In order to hasten the recovery of populations of bison, elk, deer, and pronghorn, professional hunters were enlisted to annihilate "bad" wildlife, such as the cougar and other large predators.

Two events combined to change both public attitudes and policies toward predators in national parks. First, freed from significant predation, big game populations exploded. During the winter of 1908–9, thousands of elk starved to death in Yellowstone and Jackson Hole, Wyoming, as heavy snows obscured already impoverished forage supplies. The saga was repeated in the winters of 1916–17 and 1919–20. In response, scientific and public pressure began to mount for a change in policy that protected predators along with other wildlife.

The first protests originated among members of the scientific community. In 1925, Dr. Charles C. Adams of the New York State Museum published an article in the *Journal of Mammalogy* in which he declared, "Without question our National Parks should be one of our main sanctuaries for predacious mammals, and these parks should be of sufficient size to insure the safety and perpetuity of such mammals" (1925, 90). Finally, in 1936, the National Park Service relented to public pressure and implemented policies that abandoned predator control except in circumstances where it was necessary to protect public safety (Kline 1997; Gottlieb 2004; Robinson 2005).

As tourist visits to western national parks increased, the public image of predators slowly began to metamorphose. In Yellowstone National Park, for example, hotels began to proliferate at the park boundary. In their early days, it was customary for hotel managers to discard refuse and garbage in areas adjacent to the hotels. Bears were attracted to the garbage and, in turn, attracted tourists. Eventually, it became aesthetically and hygienically necessary to centralize the garbage dumps. Bear visits became localized and predictable to the extent that the Park Service constructed bleachers adjacent to the garbage dump to accommodate viewers, and the rangers presented scheduled lectures on bear behavior and biology (Schullery 1992; Gill 2002). As the public image of bears and other predators in national parks began to improve, they became tourist attractions in their own right.

The preservation movement directly benefited cougars in at least three important aspects: (1) national and state parks provided places of protection from hunting, (2) as the touring public began to develop knowledge and positive experiences with cougars and other predators, the public image of predators began to improve, and (3) parks and wilderness areas supported abundant and diverse prey that were important to maintain entire populations of cougars.

The Conservation Movement

Conservationists espoused a competing philosophy and employed a different tactic. To conservationists, natural resources were commodities, some of which were essential to the nation's continued economic and political progress (Kline 1997).

Presidents Benjamin Harrison and Grover Cleveland inaugurated the conservation movement following the 1891 enactment of legislation empowering the president to designate public forest preserves. Harrison and Cleveland set aside a combined 35 million acres of public forests and declared them off limits to commercial exploitation. But neither articulated an overarching conservation philosophy intended to perpetuate the reserves. That task fell to President Theodore Roosevelt and the first chief of the U.S. Forest Service, Gifford Pinchot.

During Theodore Roosevelt's two terms as president, he expanded the forest reserves to 172 million acres. In addition, he created fifty-one national wildlife refuges and eighteen national monuments, some of which would ultimately become new national parks. Shortly after becoming chief of the Forest Service, Pinchot declared, "The object of our forest policy is not to preserve the forests because they are beautiful . . . or because they are refuges for the wild creatures of wilderness. The forests are to be used by man. Every other consideration comes secondary" (Kline 1997, 58). Conservation, according to Pinchot, was the limited (wise) use of renewable natural resources to assure an unending supply for current and future generations of people (Kline 1997; Merchant 2002).

Pinchot and his supporters campaigned actively to ensconce conservation philosophy as the fundamental policy for all public land management. By the end of Theodore Roosevelt's administration, conservation was firmly established as the paramount natural resource management paradigm, thereby sowing the seeds of the enduring conflict between the competing standpoints of conservation and preservation.

The period 1935–60 has been called the Golden Age of Conservation. President Franklin D. Roosevelt employed conservation as a cornerstone in his campaign to help America emerge from the Great Depression. Roosevelt created a plethora of new conservation agencies, including the Bureau of Land Management (BLM), Soil Conservation Service, Tennessee Valley Authority, and Civilian Conservation Corps, to put the unemployed to work on forest, range, and water restoration and reclamation projects (Gottlieb 2004).

Over time, the relationships between private resource user, public resource agency, and legislative resource overseer developed into iron triangles of mutual interests, so called because once set, they endured with the rigidity of iron. That rigidity often effectively excluded dissenting public voices from the policy-making process (Mosher 1982; Gill 1996a; Gottlieb 2004; for details, see Chapter 14).

No more rigid and impenetrable iron triangle was forged than that between the livestock industry, Congress, and Bureau of Biological Survey. During the 1920s, professional mammalogists, concerned with the Bureau's poisoning campaign to exterminate large predators, began to object for philosophical and economic reasons (Adams 1925; Dice 1925). These professionals persuaded the American Society of Mammalogists to appoint a committee to evaluate the Bureau's predator control program. The Bureau claimed, with little evidence, that each mountain lion cost ranchers $1,000 annually in damages. The mammalogists countered,

also with little evidence, that predators provided economic benefits to ranchers by controlling wild animals that competed with livestock for forage.

In 1928, the committee published its results in the *Journal of Mammalogy*. In fact, it issued two reports because committee members could not agree on many issues. The first report, signed by all committee members, was ambivalent and simply urged that predators should be preserved because they had scientific, economic, and educational values, and should be protected in national parks and "isolated parts" of the public domain where conflicts with livestock were likely to be minimal (Bailey et al. 1928).

The second report was signed by the committee's three university scientists and accused the Bureau and its livestock constituency of conducting all-out war on predators in an attempt to exterminate entire species, a war they claimed was unjustified. The report pointed out that the Bureau and the ranchers had strong incentives to inflate losses from predators. It concluded by recommending the abrogation of extermination and replacing it with a policy that focused on the control of individual predators causing problems in specific locales (Adams et al. 1928).

The Bureau and the livestock industry mounted a public relations campaign to refute the recommendations of the second report. First, the Bureau sought (unsuccessfully) to eliminate the word "extermination" from both its rhetoric and its publications. Next, it persuaded the Congressional Agricultural Committees to hold hearings to garner support for legislation to increase predator control appropriations and strengthen the authority of the secretary of agriculture to control livestock predators unilaterally on public and private land. Then the Bureau sent Stanley P. Young of its West Coast office on a public relations blitz to discredit the second report and its authors. His efforts deflated the Bureau's critics and promoted passage of the Animal Damage Control Act of 1930, which codified and solidified the enduring iron triangle of the federal animal damage control program (Dunlap 1988).

State wildlife agencies went the federal government one better. Not only did they adopt conservation as the cornerstone of wildlife management policy but they also funded wildlife management almost entirely with hunting and angling license fees and associated excise taxes. This had the effect of establishing "diamond triangle" relationships that were even more impenetrable to concerned outsiders than iron triangle relationships. The formation of iron and diamond triangle relationships cemented conservationism as the dominant environmental management paradigm throughout the ensuing seven decades. It would also set the stage to resurrect the preservation-conservation conflict.

At first, conservation abetted the war on large predators. State wildlife professionals believed that predators suppressed the abundance of desirable game. Thus they actively supported both federal and state initiatives for vigorous control of cougars, wolves, and bears. Gradually, however, public attitudes toward large predators became more favorable, and state wildlife agencies adapted. By the 1960s, the legal status of cougars and bears in most states had changed from unprotected varmints to game animals (Cougar Management Guidelines Working Group 2005).

No one exemplified the transformation of public attitudes toward predators more clearly than Aldo Leopold. The onset of Leopold's professional career found him squarely in the conservationist camp, but as he neared the end of his career, he would migrate into the preservationist camp. Leopold was educated as a professional forester and first employed by the U.S. Forest Service. In 1915, while still a Forest Service employee, he supported government-sponsored predator control programs (Leopold 1991).

By 1923, however, Leopold's thinking about the role of predators and humankind's relationship to nature was undergoing profound transformation. He argued that far from being "dead," the entire earth was a living organism that we humans were *morally* obliged to protect. Near the twilight of his career, Leopold penned his now famous essay "The Land Ethic," precursor and inspiration to the environmental movement. According to the land ethic, "predators are inherent members of the community," and no special interest "has the right to exterminate them for the sake of a benefit, real or fancied to itself" (1949, 211–12). It was time to "quit thinking about decent land-use as solely an economic problem. . . . A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (224–25).

Factious Philosophy

Late in the 1920s, as the science of ecology emerged, ecologists began to unravel the fascinating interrelationships of the complex, ever-renewing web of life. It became increasingly clear to ecologists that humans could no longer consider themselves apart from nature. For better or for worse, we were an integral part of natural ecological processes, affecting and affected by their interactions. Most people either ignored or were ignorant of this reality until Rachel Carson published her epic *Silent Spring* (Carson 1962).

Environmental Revolution

Silent Spring did not abruptly change public attitudes as much as catalyze existing attitudes so that they coalesced (Brooks 1972; Quaratiello 2004; Gottlieb 2004). Propelled by the twin engines of industrialization and

urbanization, American attitudes toward nature had been transforming for decades from utility to appreciation, from consumption to protection (Kellert and Westervelt 1982; Decker et al. 2001). *Silent Spring* galvanized many people with latent nature-protection attitudes into overt environmental activism.

Silent Spring impacted iron triangle relationships in at least three important ways. It heightened public awareness of problems incurred from profligate application of pesticides, an issue that government, science, and industry had so far either overlooked or ignored. It revealed the undemocratic alliance among government, science, and industry that collectively made critical public-interest decisions without involving those affected by the decisions. And it undermined public confidence in the objectivity, credibility, and authority of science as the unqualified foundation for natural resource policy making (Smith 2001). It also sowed the seeds for a backlash that would take nearly two decades to develop.

Following the publication of *Silent Spring,* new members flocked in droves to established nongovernmental organizations like the Sierra Club, the National Wildlife Federation, and the Wilderness Society, and a handful of newly emerging environmental organizations such as the Environmental Defense Fund and Fund for Animals (Decker et al. 2001). Increased membership brought increased influence, and collectively these organizations launched a populist political campaign that produced an astonishing array of environmental legislation.

Of particular importance was the National Environmental Policy Act (NEPA) of 1969. NEPA required government agencies and private sector businesses who were proposing projects that were to be conducted on federal lands or funded with federal money to evaluate their potential environmental effects before the projects could proceed. It also provided for open public review of and comment on each impact statement. The Environmental Protection Agency (EPA) was created to implement the Act, bypassing established federal agencies that might try to delay or weaken the implementation the provisions of NEPA.

In 1973, Congress enacted the third iteration of the Endangered Species Act (ESA), which set up criteria for identifying species that were threatened or in danger of extinction. It included provisions for species recovery and the protection of critical habitats (Dunlap 1988; Kline 1997; Gottlieb 2004).

Seldom were cougars the object of federal protectionist legislation. Clean water and air, wilderness preservation, and endangered species were the legislative objects. With the exception of the ESA, all of the other provisions aided cougars primarily by protecting, enhancing, and expanding key habitats and by providing average citizens entrée, however tenuous, into the natural resource policy-making processes. For the Florida panther, the ESA was and is the gossamer tether preventing its obliteration. The Florida panther was listed as endangered in 1973, and today, after decades of research and restorative efforts, still barely averts the oblivion that was inevitable without endangered species designation and protection (Maehr 1997a; for more on the Florida panther, see Chapter 12).

Buoyed by early success, environmentalists pushed to change nature philosophy and environmental policy. They neglected to check the barometer of public opinion, particularly in economically stressed areas of the West, where the burst of new legislation triggered first a backlash and then a full-scale counterattack. Although environmentalism tapped a wave of public support for nature protection and restoration, it dominated rather than replaced conservationism. Those who made a living from the wildland products were subdued, but hardly defeated. Ineluctably, the stage was set for a counter-revolution.

Counter-Revolution

The first shot fired in the counter-revolution was rather innocuous. In 1972, President Richard Nixon signed an executive order that banned the use of predator poisons on federal lands (Robinson 2005). Nixon was approaching reelection in a hostile political environment. Mindful of the tremendous popularity of environmentalism that had followed from *Silent Spring*, he sought support among the new wave of environmental voters. The support turned out to be superfluous (he won reelection in a landslide vote), and the ban was short-lived. When Nixon resigned from the presidency in 1974, Vice President Gerald Ford amended Nixon's executive order and relaxed poisoning restrictions by allowing for experimental uses of poisons. Then on January 27, 1982, President Ronald Regan rescinded both executive orders, removing all poisoning restrictions.

The anti-environmental movement turned into a full-blown skirmish in 1979. State Senator Deane Rhodes introduced a bill into the Nevada legislature that called for the federal government to hand over all forty-eight million acres of BLM lands within the state to Nevada and launched the "sagebrush rebellion." Soon, the states of Utah, Idaho, Wyoming, Arizona, and Alaska followed suit with similar land transfer resolutions (Helvarg 1997). The ultimate aim, at least of some sagebrush rebels, was to return these lands to private ownership via state land sales.

Almost as quickly as it ignited, the sagebrush rebellion fizzled. The Reagan administration quickly appointed conservatives to key natural resource posts in the new administration. The sagebrush rebels anticipated staunch support from the conservative appointees. Instead, the very interests that had encouraged the rebellion in the first place undermined them for fear of a political backlash against selling public lands to private interests (Helvarg 1997).

Although the battle was lost, the war was hardly over. In the mid-1980s, anti-environmental interests began to organize a full-scale countermovement designed to roll back or overturn legislation put in place earlier by environmental activism. The movement was called the "wise use movement" and was billed as a grassroots, populist uprising against regulatory excess that stifled public land management (Echeverria and Eby 1995). Particularly galling to wise users was the ESA (Luoma 1992; Maughan and Nilson 1993; Tokar 1995). Wise use groups focused intently on neutering the ESA. For the first time in decades, both the executive branch and the majority party in the Congress were allied behind an antiregulatory agenda.

Wise use advocates regarded the protection of endangered carnivores, particularly grizzly bears and wolves, as a potent symbol of federal regulatory excess on public lands. It has been said that the controversy over reintroducing wolves into Yellowstone National Park had less to do with wolves themselves than with what wolf reintroduction symbolized. Wolf reintroduction took center stage in natural resource policy debates because of a convergence of three contentious social issues: inequitable access to political power, conflicting interpretations of the extent of private property rights, and contrasting philosophies about the relationship of humans to the natural environment. Polarization between wise use advocates and environmentalists along each of these dimensions created a caustic natural resource policy and management milieu that permeated every discussion of carnivore conservation (Wilson 1997).

Stalemated in their attempts to effect environmental policy change at the federal level, environmentalists shifted the battlefield to the states. As of today, twenty-seven states permit some type of petition process whereby citizens can make law through direct democracy. Environmental laws, particularly laws affecting open space preservation and wildlife management, have become increasingly popular (see Chapters 14, 15).

In 1990, California citizens proposed to voters an initiative that banned cougar hunting throughout the entire state. Soon thereafter cougar advocates in Oregon and Washington followed California's lead by enacting legislation that banned the use of dogs to hunt cougars. No one knows for sure how each of these initiatives has impacted cougar populations (see Chapter 4), but California cougars have likely increased following the elimination of sport hunting. On the other hand, cougar populations in Oregon and Washington may have declined. Wildlife agencies in both Oregon and Washington responded to bans on hunting cougars with dogs by dramatically increasing the number of available cougar hunting licenses. As a result, hunting mortality of cougars increased, especially among females and young cougars (Beausoleil et al. 2003; Whittaker 2005; see Chapter 4).

It is likely that cougars have been aided somewhat by citizen initiatives that banned the use of leghold traps to take wildlife, and they have benefited substantially from initiatives and other legislation that preserved open space (see Appendix 5 for a partial list of initiatives related to cougars). Expanded open space has increased habitat for prey species and protected travel corridors that promote genetic interchange among populations.

The success of citizen-initiated environmental legislation, like the success of federal environmental legislation, provoked an anti-environmental backlash. Several initiatives have surfaced to repeal previous environmental legislation outright, while others aimed to disarm wildlife protection initiatives by granting state wildlife agencies unilateral authority to develop and implement wildlife policy (Minnis 1998; see Chapters 14, 15).

In effect, what we now face is a perpetuating values war in which both sides win battles, but neither side wins the war. Each time administrations change or the power of Congress shifts from one party to the other, environmental policy shifts with it. Neither environmentalists nor wise users will end the values war until both acknowledge these fundamental conflicting values and find ways to resolve them. And that will require more dialogue and less legislation and litigation.

Yet while the politics of environmentalism was stalemated, the perspectives of environmentalism were spreading. Nowhere was this fundamental change in values more evident than in public attitudes toward large carnivores. Wolves and grizzly bears, once considered worthless varmints, have climbed the list of the most favored of American mammals (Kellert 1985; Bright and Manfredo 1996; Kellert and Smith 2000). Along the Front Range of Colorado, despite a period of chronic conflict between cougars and people, nearly 80 percent of the public still expressed positive attitudes toward cougars. Although the public supported the general notion that authorities ought to take steps to control the number of cougars coming into residential areas along the Front Range, lethal control was not an acceptable control method unless the cougar had killed or injured a pet or person (Zinn and Manfredo 1996; Baron 2004).

The California ban on cougar hunting was upheld by citizen initiative in 1990. Asked by the National Rifle Association (NRA) to repeal the ban in 1996, California voters refused, despite conflicts between agriculture and cougars, cougar depredations on pets, and even human death and injury from cougar attacks. Citizen initiatives in Oregon and Washington that banned the use of dogs to hunt cougars affirmed that Californians were not unique in their support for cougars (Minnis 1998; see Chapter 15 and Appendix 5). Ironically, as the century ended, the public held the cougar in higher regard than the politicians who wrangled over its fate (Riley and Decker 2000; Orren 1997).

Future Philosophy

Two major environmental issues loom on the horizon of the twenty-first century: global climate change and unrelenting human population growth. Sometime in 1999, the world's human population reached the six billion mark. Even though the trend in birth rates appears to be declining, population inertia promises to propel that number ever upward until around 2050, when human numbers are expected to stabilize at between nine billion and twelve billion people (M. Wilson 2002; Brown 2006).

Dark Clouds Gathering

The combination of demographic inertia and ecological constraints will force humans through a bottleneck that threatens not only human existence but also the existence of hundreds of other species of plants and animals (M. Wilson 2002). No group of species faces a more insecure future than large carnivorous mammals (Gittleman et al. 2001). As humans invade wildlands, they dissect habitats, degrading their capacity to sustain populations of cougars, wolves, bears, lions, tigers, and other species.

Examples of the fragmenting effects of human expansion can be found in Arizona, California, Colorado, Montana, and New Mexico, with urban populations increasingly expanding into adjacent foothills and canyonlands—ideal cougar habitat (Best 2005). Frequent contact with humans, pets, and livestock increases conflicts between resident humans and resident cougars, during which cougars often lose. As human populations grow, both habitat fragmentation and cougar-human conflicts are likely to increase, amplifying the difficulty of cougar preservation (Torres et al. 1996; Sweanor et al. 2000).

Global climate change complicates the already inscrutable environmental problems posed by human population growth. Coastal cougar populations will face habitat inundations from rising sea levels. Inland populations increasingly will face isolation as migration corridors disappear and quality of extant habitats declines because of climate- and human-caused habitat conversion. Genetic diversity of isolated cougar populations will gradually decline, further complicating their conservation (Kurz and Sampson 1991; Burkett 2001; Maehr et al. 2002; Lovejoy and Hannah 2005; Root and Schneider 2005).

The environmental movement found itself forced to confront the challenges of human population growth and global warming at precisely the wrong time. Much of the old movement was mired in malaise from the grueling political stalemate with the wise use movement. One of the most effective strategies the wise use movement employed against environmentalism was to assert repeatedly that environmentalists were elitists with little concern for ordinary citizens. It was effective because it was partially true. Forced to confront a bewildering array of policy initiatives that sought to undermine environmental protection legislation, most mainstream environmental groups focused their attention on Washington, D.C. In the process, some mainstream environmental organizations strayed from their grassroots values (Shabecoff 2000; Gottlieb 2004).

Sunlight Peeking Through

Recent events suggest that environmentalism is moving to reinvent and reinvigorate itself by returning to those grassroots values of its founding. First, environmentalists have launched an explosion of scientific activity to document and safeguard against the pending effects of climate change and human expansion. Biodiversity inventories have expanded to document worldwide trends of plant and animal species. Genetic material of a growing number of species is being stored in genetic banks to allow for future cloning and restoration of species that become extinct before they can be preserved (Holt et al. 1996; Hold et al. 2004).

Elsewhere, experiments are under way to restore habitats and ecosystems already impaired by human cultural encroachments (van Andel and Aronson 2006). Large carnivores, in the United States and elsewhere, are priorities for restoration because large carnivores require vast expanses of natural habitat to maintain viable populations (Gittleman et al. 2001; Maehr et al. 2001; Fascione et al. 2004; Clark et al. 2005; Taylor 2005). Thus, protecting and restoring large carnivores and their habitats provides a protective "umbrella" for various other species (Duke et al. 2001; see Chapter 12). Foremost among the tasks to ensure cougar longevity is the protection and restoration of migration corridors to facilitate dispersal and gene flow among populations (Beier 1993; Maehr et al. 2002; Dickson et al. 2005; McRae et al. 2005; Anderson 2006; Thorne et al. 2006). Although science is necessary, it is not sufficient for the challenges ahead. Scientific and technological expansion, uncoupled from public values, have been major contributors to the current ecological dilemma (Yankelovich 1991, 1998).

Every collective human action, consciously or unconsciously, proceeds from three sequential questions—can we, should we, and will we? *Can we*, meaning do we have the intellectual capital or knowledge to do what we want? *Should we*, meaning do we have the moral impulse and social capital to do what we want? *Will we*, meaning do we have the political capital or support to do what we want?

As a remedy, environmentalists and academics are promoting policy-making experiments that link science to

wellsprings of public values and experience (Fischer 1995, 2000; Shutkin 2000; Nie 2004b; Jacobson and Decker 2006). Environmentalists are insisting that procedural justice and grounding the new environmentalism in grassroots democratic values are necessary for successful environmental policy making (Lawrence et al. 1997; Young 2000; Smith and McDonough 2001; Parkins and Mitchell 2005). In addition, by linking democratic policy making with participatory science, environmentalists are rejuvenating both science and politics (Shindler and Creek 1999; Irwin and Freeman 2002).

Participatory democracy has yet to penetrate deeply into the politics of cougar management (Teel et al. 2002). Thus far state wildlife agencies with regulatory responsibility and state legislatures with policy-making authority have resisted overtures to share political power, but economics and demographics no longer favor politics of exclusion (Clark et al. 1996; McLaughlin et al. 2005; Jacobson and Decker 2006). More and more, though, these questions are being resolved in democratic forums that invite broad public participation, and with democracy come political support and stability (Light 2000; Vining et al. 2000). As the questions *can we*, *should we*, and *will we* continue to reverberate, the bond between the human and natural communities strengthens, and with it comes the deepening realization that they were always one and the same.

Already scientists know enough about cougar ecology to recognize that protecting cougar populations will not suffice to save them over the long haul. Corridor restoration, maintenance of genetic diversity, and habitat conservation and restoration must be part of any long-term management agenda. The science of cougar conservation is well ahead of the politics of cougar conservation, but the day seems to be approaching when both will be on a more equal footing (Clark and Munno 2005; McLaughlin et al. 2005; Logan et al. 2005).

Another major challenge to the renewal of environmentalism is religion. Traditional western religions until recently have been tepid in their support of an environmental ethic. Now that too seems to be changing. There has always been a spiritual dimension to the environmental movement. Thinkers like Emerson, Thoreau, and Muir often used spiritual metaphors to describe the benefits of wildlands and invoked ethical arguments in favor of wilderness preservation (Kline 1997; Gottlieb 2004; Dunlap 2006). Aldo Leopold's famed land ethic is fundamentally spiritual (Leopold 1949). But as science came to dominate the politics of environmental protection, the spiritual fire began to dim.

In response, the deep ecology movement began to emerge in the early 1980s (Devall and Sessions 1985). The movement sought to integrate morality into ecology, stressing that humankind was morally obliged not only to protect the fruits of creation but also to recognize the rights of the created (von Hoogstraten 2001). Currently, a parallel development is occurring among the world's major religious institutions, especially within Judaism and Christianity. The emerging green evangelical movement, in contrast to the dominionistic Christianity of the past, commands believers to protect, preserve, and perpetuate all of God's creation (Sittler 2000; Oelschlaeger 1994; Taylor 2004).

After a long, perilous journey, environmentalism seems to be coming full circle back to its aboriginal roots. The new environmentalism recognizes and values both physical and spiritual connections with nature. It acknowledges an enduring kinship with the earth and its nonhuman inhabitants. And it accepts moral responsibility for the welfare of all. The new environmental movement aims to renew itself with a future philosophy that seeks to combine the democratic values of truth, justice, and community with the spiritual values of stewardship and compassion. Organizations founded to preserve cougars are proliferating. Groups such as the Mountain Lion Foundation and Florida Panther Society acknowledge not only the ecological value of cougar preservation but the moral obligation as well. As these values begin to fuse, perhaps it is not overly optimistic to anticipate the rediscovery of genuine *soul among lions* (Shaw 2000).

The title of this chapter is adapted from Harper Lee's gripping novel, *To Kill a Mockingbird* (Lee 1960). It is a story of the relationships among truth, justice, community, and compassion. If we hope to save the cougar and other large predators from future extinction, surely we will need an abundance of all four. It is both enigmatic and true that if we are wise enough to save the mountain lion (cougar), ultimately, the mountain lion may save us. I can hear Lame Deer, Black Elk, and others chuckling in the background. This is the fundamental wisdom they tried to teach us centuries ago (Neihardt 1961; Erdoes 1976).