A House Divided:
Utah and the Return of the Wolf

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On November 30, 2002, a gray wolf from Yellowstone National Park was captured in mountainous terrain twenty-five miles northeast of Salt Lake City. The event received a great deal of media attention since wolves had not been recorded in Utah for some seventy years.[1] Conservationists cheered the return of *Canis lupus* to Utah, while ranchers and big game hunters cried, "Wolf!" Personnel from the United States Fish and Wildlife Service (USFWS) found themselves in the middle of a canine crisis and acted on political instinct by appeasing both pro- and anti-wolf camps. The USFWS returned the wolf to northern Wyoming as expeditiously as possible, thereby pacifying hostile ranchers. Then, as wolf proponents postured to charge the federal government with illegally transporting an endangered species, the USFWS swore that any future wolves wandering into Utah would remain free.[2]

On the heels of the Utah wolf's capture and return to Wyoming, impassioned public forum letters written by individuals on both sides of the wolf debate appeared in local newspapers. The *Deseret News*[3] printed the comments of one wolf advocate who exclaimed: "Utah is a wolf 'no-man's land,' and we will be making up wolf policy as we go along. We can either take the ranchers' wise-use side and treat the wolf as we did when it was eradicated from Utah . . . or we can join the 21st century and welcome this magnificent and beautiful animal back into its ancestral hunting grounds."[4] In response to the above letter, another individual derided wolf restoration:

> I might be amenable to [welcoming wolves back into Utah] if wolf advocates could give me a better reason than just telling me how noble wolves are. . . . This obsession with reintroducing wolves has no logical grounds other than the

> desire to live in a pristine world, a kind of holy nostalgia for a time that no one really remembers. . . . The pressure to bring wolves back has no point other than pursuit of a dream of Eden.[5]

These and other forum letters as well as newspaper stories and television reports confirmed what was already suspected: when it comes to wolves, Utah is a house divided. Herein I review the history of human attitudes towards wolves in the Intermountain West and the contemporary arguments for and against wolf restoration in Utah. I suggest that encouraging wolf recolonization in Utah would revitalize the languishing environmental ideals of Joseph Smith and Brigham Young and demonstrate to today's ecologically astute world that Latter-day Saints take seriously their stewardship of the animal kingdom.

From Beast of Desolation to Wilderness Icon

When Mormon pioneers journeyed across the Great Plains en route to the Salt Lake Valley, large game animals—the primary quarry of wolves—were extraordinarily abundant. On May 6, 1847, Brigham Young observed: "The prairie appeared black being covered with immense herds of buffalo."[6] The pioneers found far fewer game animals in the Great Basin than on the Great Plains. Profligate waste by pre-pioneer-era fur trappers had apparently reduced the number of game animals in the lower valleys, but game remained abundant in the mountains.[7] With virtually no agricultural foods available, the first pioneers avidly hunted animals in the nearby ranges, but only two years after arriving in the Salt Lake Valley, hunting parties were often forced to travel many miles to find elk, deer, and other game.[8]

Hunger forced the first Mormon settlers to shoot whatever game they could find. Unfortunately, unsustainable hunting practices continued even after agricultural settlements were successfully established. Throughout Utah, chronic overhunting nearly eliminated big game populations by the early 1900s. The human impact on game herds was so severe that deer hunting was completely banned in Utah from 1908 to 1913.[9]

The phenomenon of unrestrained hunting and game depletion in Utah occurred throughout the West. The vast herds of bison that Brigham Young witnessed in 1847 remained plentiful through the 1850s and 1860s. By the 1870s, however, large numbers of miners, railroad workers, and homesteaders were venturing west in an exuberant wave of manifest destiny. Like their Mormon predecessors, these frontiersmen all sought table meat on a daily basis. With no formal hunting restrictions in place, big game populations plummeted and became so imperiled that they would have qualified for endangered species status today.[10]

As game populations dwindled in the West, they were replaced by millions of livestock animals. In Utah, the total number of sheep and cattle increased from under 100,000 in 1870 to over 4.1 million in 1900. In the settlement of American Fork alone, ranchers owned 150,000 sheep.[11] With their natural prey base nearly exhausted, wolves adapted by altering their diet from deer and elk to cattle and sheep.

The overhunting of game animals and the introduction of domestic livestock presented an ominous predicament for destitute Mormon pioneers whose very survival for the first two years in the Salt Lake Valley was threatened by starvation. Due to the pioneers' extreme isolation, a valuable cow or ox was nearly impossible to replace. Consequently, on Christmas day 1848, the pioneers commenced a two month war against the "wasters and destroyers"—wildlife species that presented a threat to the pioneers' grain, poultry, and livestock.[12] On January 1, 1849, John L. Smith explained the hail of gunshots heard across the Salt Lake Valley: "There is a general raid by the settlers on bears, wolves, foxes, crows, hawks, eagles, magpies and all ravenous birds and beasts."[13] A postmortem of the hunt revealed that 2 bears, 2 wolverines, 2 bobcats,

9 eagles, 31 mink, 530 magpies, hawks, and owls, 1,026 ravens, and 1,192 foxes, coyotes, and wolves were killed.[14] It is difficult to determine whether this assault on predators made early pioneer life in the Salt Lake Valley any less challenging. Based on early pioneer diaries, Leonard Arrington and Victor Sorenson assert that inclement weather and lack of proper feed were probably more lethal to the settlers' livestock than wolves.[15]

Despite multifarious factors that resulted in livestock mortalities in Utah and throughout the West, wolves were always cast as the chief villains. As Barry Lopez notes, "The wolf was not the cattleman's only problem. There was weather to contend with, disease, rustling, fluctuating beef prices, hazards of trail drives. . . . [But] the wolf became . . . 'an object of pathological hatred.' . . . Men in a speculative business like cattle ranching singled out one scapegoat for their financial losses." Earlier, Lopez says, "It was against a backdrop of these broad strokes—taming wilderness, the law of vengeance, protection of property, an inalienable right to decide the fate of all animals . . . and the . . . conception of man as the protector of defenseless creatures—that the wolf became the enemy."[16]

Concurrent with wolf-related livestock losses, sport hunters became frustrated over the scarcity of large game animals. Oblivious to the fact that game had formerly been superabundant despite substantial predator populations and regular harvesting by Native Americans, sport hunters blamed wolves for floundering deer and elk herds.[17] President Theodore Roosevelt, an outspoken advocate of wildlife resources and founder of America's first wildlife conservation club, viewed the existence of wolves as inimical to the country's conservation objectives, calling the wolf a "beast of waste and desolation."[18]

Roosevelt's view of wolves was shared by most Americans, including Aldo Leopold, a U.S. Forest Service employee who spent his formative years in the early 1900s killing wolves and other predators as part of a government campaign to increase deer and elk populations. Convinced that game animals such as deer were good, while predatory animals such as wolves were bad, Leopold sounded a clarion call for predator extermination:

> New Mexico is leading the West in the campaign for eradication of predatory animals. Our state has pooled its dollars . . . in a mighty effort to rid the ranges of these pests. . . . The sportsmen and the stockmen—one third of the population and one-half the wealth of New Mexico—demand the eradication of [mountain] lions, wolves, coyotes and bobcats.[19]

Leopold's contempt for carnivores dissolved during an incident where he and some companions chanced upon a mother wolf and her maturing pups. The encounter reshaped Leopold's understanding of ecological relationships and human responsibility to living things. Years later, in a brief but penetrating essay entitled *Thinking Like a Mountain*, Leopold described his ecological epiphany: "In those days," he reminisced,

> we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack. . . . When our rifles were empty, the old wolf was down and a pup was dragging a leg into impassable slide-rocks.
>
> We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. . . . I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.
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> Since then I have lived to see state after state extirpate its wolves. . . . I have seen every edible bush and seedling browsed, first to anemic desuetude, and then to death. I have seen every edible tree defoliated to the height of a saddlehorn. . . . In the end the starved bones of the hoped-for deer herd, dead of its own too-much, bleach with the bones of the dead sage, or molder under the high-lined junipers.

> I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. . . .
>
> Perhaps this is the hidden meaning in the howl of the wolf, long known among mountains, but seldom perceived among men.[20]

Like new wine in old bottles, Leopold's *Thinking Like a Mountain* burst the vessels of conventional wisdom regarding wolves. Today, conservationists recognize the crucial ecological role of wolves and revere the animals as icons of a vanishing American wilderness.[21]

Reintroduction of Wolves to Yellowstone

Wolves searching out potential territories in Utah are descendants of Canadian gray wolves released in 1995 and 1996 in Yellowstone National Park.[22] As with Utah, wolf restoration in Yellowstone was characterized by an intense sociopolitical battle. Since wolves entering Utah derive from the Yellowstone region and because the successful reintroduction of wolves to the park is teaching scientists a great deal about the wolf's ecological value, it is instructive to review Yellowstone's wolf saga.

Wolves were formerly abundant in Yellowstone, but like other predators in the park, they were systematically destroyed in order to protect other wildlife. The last known resident wolves in Yellowstone were killed in 1926.[23] In the wolf's absence, elk populations proliferated extravagantly and began destroying the park's vegetation. Not only were grasses overgrazed, but tender willows, sapling aspens, and sprouting cottonwoods were persistently nibbled off by twenty thousand hungry elk.[24] Without the soft wood of riparian, or streamside, trees on which to forage and build their impressive dams, beaver became scarce in the park. As a result of overgrazed vegetation and fewer beaver ponds, erosion accelerated, water tables dropped and a cascade of ecological calamities ensued.[25] Something had to be done.

Hunting in U.S. National Parks has long been prohibited, but by the 1960s environmental conditions had deteriorated so badly in Yellowstone that park officials resorted to desperate tactics to reduce the elk population. Fearful that legal public hunting in the world's flagship national park might set a dangerous precedent for wildlife sanctuaries in other countries, Yellowstone managers directed their own rangers to shoot thousands of elk.[26] Media photographs of the carnage infuriated the public. Americans demanded that the killing cease, notwithstanding the ecological rationale for the elk slaughter.

Due to the public's insistence that the Park Service stop its meddling with Yellowstone's ecosystem, the decision was reached to let natural regulatory processes prevail. Nature is never a benevolent regulator of wildlife populations, however. With the elk herds so large and the available forage so sparse, particularly in winter, large numbers of elk succumbed to starvation. While most elk managed to survive mild winters, severe winters could claim the lives of over half the park's elk population.[27] Large and regular population oscillations such as this are common when native predators are eliminated from ecosystems.

Although wolves were eradicated from Yellowstone in the 1920s, it became increasingly clear to park authorities during the 1950s and 1960s that many other species (both plant and animal) could not flourish without wolves. Like Leopold, Yellowstone's managers were learning to think like a mountain, but grave political consequences were likely to befall any Park Service employee who publicly advocated reintroducing wolves. Local economies revolved around livestock production, and several wolf-free decades failed to dampen the deep animosity area ranchers harbored toward the animal.

In the 1980s, conservation groups began pressing Yellowstone officials to reestablish wolves in the park. Initial proposals to restore wolves to Yellowstone were fiercely opposed by Wyoming's congressional delegation, who

thought it unconscionable to restore wolves when the ranchers' own ancestors had fought so valiantly to exterminate the ruthless killers.[28] But in 1986, Utah Representative Wayne Owens, a committed Latter-day Saint and wilderness advocate, introduced legislation directing the secretary of the interior to restore wolves to Yellowstone within three years.[29]

Owens's wolf legislation infuriated Wyoming ranchers and politicians. Wyoming congressman Dick Cheney chided, "Let us worry about Wyoming," sarcastically adding that perhaps the Wyoming delegation should examine the possibility of introducing sharks to Utah's Great Salt Lake. "Yellowstone Park," Owens countered, "does not belong to Wyoming. It belongs to all of us."[30] Wolf reintroduction to Yellowstone still faced major political hurdles and a litany of litigation, but as Owens and other wolf proponents continually pointed out, the wolf was critically endangered in the contiguous forty-eight states, and the Endangered Species Act, passed by Congress and signed into law by President Richard Nixon in 1973, mandates that the federal government repatriate eradicated species to selected recovery areas. Yellowstone had been designated such a place for the wolf.[31]

In January 1995, fourteen wolves were captured in Alberta, Canada, and transported to Yellowstone. Hundreds of on-site spectators and millions of worldwide television viewers watched as a caravan of vehicles carried anxious wildlife officials, opportunistic politicians, and disoriented wolves through Roosevelt Arch into Yellowstone National Park. Students at nearby Gardner High School were excused from their classes to watch history in the making, and people lining the highway applauded as the procession passed.[32] The scene symbolized a profound shift in America's environmental philosophy. After failing for seventy years to successfully manage Yellowstone's complex ecosystem in the absence of the park's top predator, wildlife officials, as well as the American public, enthusiastically welcomed the wolf's return. The former labeling of species as good or bad based strictly on their economic or aesthetic value was discarded for an enlightened perspective that valued predators as much as their prey.

For and Against Wolves

A 2002 *Salt Lake Tribune* poll revealed that 61 percent of Utahns favored wolf recolonization.[33] While most Utahns have favorable perceptions of wolves, attitudes of metropolitan Wasatch Front residents are considerably more positive than those of rural Utahns, who perceive themselves as more likely to have their lives negatively impacted by wolves.[34] Wolf proponents cite both ecological and economic reasons to justify wolves.

Ecological value of wolf recolonization. While wolves still generate controversy because of their predatory behavior, that ecological role, as Leopold eloquently stressed, is vital. In his book *Never Cry Wolf*, Farley Mowat relates a semireligious folktale of Arctic Canada's Inuit culture—a people that have shared the landscape with wolves long enough to recognize the wolf's ecological value. Mowat's native informant, Ootek, explained that God provided caribou for the "sustenance of man." The Inuit, however, "hunted only the big, fat caribou, for they had no wish to kill the weak and the small and the sick." Over time, "the weak came to outnumber the fat and the strong." This weakened the caribou herds, and the people complained to their Creator that his work was no good. But the Creator replied, "My work is good." God then instructed the wolves, "'and they will eat the sick and the weak and the small caribou so that the land will be left for the fat and the good ones.' And this is what happened, and this is why the caribou and the wolf are one; for the caribou feeds the wolf, but it is the wolf who keeps the caribou strong."[35]

In addition to trimming herds of young, aged, and infirm animals, ecologists cite numerous other beneficial influences wolves bring to natural ecosystems. Since wolves have been restored to Yellowstone, the widespread destruction of young

aspen trees by elk has ebbed. Aspens have significant value in forest ecosystems, and their recovery in Yellowstone is mainly due to wolves keeping elk from foraging in one place too long.[36] Riparian vegetation is likewise regenerating, and Yellowstone's Lamar Valley now supports numerous beaver colonies whereas no beavers were present when wolves were reintroduced in 1995.[37]

The recovery of wolves in Yellowstone has also been a boon to the park's formerly tenuous grizzly bear population. Following the extermination of wolves, large numbers of elk died during Yellowstone's unforgiving winters. Elk carcasses are an important food for bears emerging from hibernation, but during the wolves' absence in Yellowstone, this valuable source of protein came all at once and could not be efficiently exploited. Now that wolves have become reestablished in Yellowstone, winter mortality rates of elk are lower, and instead of an annual spring flood of winter-killed elk on which to briefly dine, grizzlies now benefit from a continual trickle of elk remains left by (or usurped from) wolves.[38] Bald and golden eagles, black bears, wolverines, magpies, and ravens also prosper from the limited but regular supply of carrion.

Other species benefit indirectly from wolf kills. Because ravens often cache pieces of elk meat for later use, these small but important pieces of protein are often discovered and consumed by other animals.[39] Wolves are even helping songbirds flourish. The regeneration of streamside vegetation enhances avian habitat, but bluebirds, robins, and warblers also thrive by consuming fly larvae gleaned from the rotting remains of wolf-killed elk.[40]

Similar to their impacts on elk, wolves are both a blessing and a curse to Yellowstone's coyotes. Following the wolf's extermination in the West, coyote populations, except where they were persistently trapped, poisoned, or shot, expanded to exploit the ecological niche vacated by wolves. Now that wolves are back in Yellowstone and are killing elk and bison, coyotes, like other scavengers, have more to eat. Wolves, however, regard coyotes as competitors and kill them. Consequently, Yellowstone's unnaturally large coyote population has been reduced by fifty percent since wolves were restored to the park.[41]

The ecological implications of fewer coyotes in Yellowstone are profound. Coyotes prey heavily on small rodents and are also the primary predator of antelope fawns. With the coyote population reduced to a more natural level, Yellowstone's beleaguered antelope herd appears to be recovering.[42] Additionally, with fewer coyotes consuming rodents, more mice and squirrels remain for smaller and often rarer predators including goshawks, great gray owls, and red foxes. Wolves, then, help keep ecosystems balanced.[43]

While wolves are thriving in Yellowstone, they may be reaching their maximum density in the park as evidenced by escalating interpack strife. Recently, some forty wolves have been killed by other wolves in the park. "You can't just have infinite growth of wolves," explains predator biologist Nathan Varley.[44] As wolves approach their population limit in Yellowstone, the dispersal of young wolves to Utah is likely to increase.

Economic value of wolves. In addition to ecological values, there are also economic benefits to wolf recovery. Yellowstone's wolves are remarkably visible and have spawned an industry of wolf education businesses that infuse tourist dollars into local economies. The *Deseret News* reported that many of the seventeen companies that conduct wildlife and photography tours in Yellowstone specialize in wolves. One company focuses on attracting clients from Japan: "It's just unbelievable, the number of people wanting information about wolves," said the company's owner, Steve Braun. At the beginning of 2000, Braun said his tours that year would accommodate 1,000 person days. Each person spends about $300 a day, including lodging, food, transportation, and equipment, bringing total local spending to about $300,000. One guide who conducts outdoor photography classes in Yellowstone reported that one-third to one-half of his clients

say that seeing wolves is "the highlight of their trip."[45] In Minnesota, the only state other than Alaska to never completely exterminate its wolves, the Wolf Education Center generates $3 million annually in tourism revenue.[46]

Arguments against wolf restoration. Although most Utahns believe wolves should be permitted to return to the state and resume their ecological role, their voices are largely drowned out by the protests of wolf opponents. People who object to wolf recolonization do so for one or more of the following four reasons.

First, many hunters in Utah are concerned that a managed population of 200 wolves—a number advocated in a study published by Utah State University (USU) wildlife biologists—would lay waste Utah's deer, elk, and moose populations. Hunters usually express dismay that their hard conservation work and money spent toward restoring game herds from their impoverished condition seventy to one hundred years ago will be for naught if wolves are permitted to recolonize Utah.[47] If 200 wolves become established in Utah, they would kill an estimated 3,600 large game animals annually.[48] This number represents less than 1 percent of Utah's big game population and is substantially less than the 6,000 deer and elk killed by motorists on Utah highways each year.[49]

A second complaint against wolves recolonizing Utah comes from ranchers. "I think it will be the end of the sheep business in Utah," declared the president of the Utah Wool Growers Association, "and I think sooner or later it will be the end of cattle (ranching) too. I really don't know who it's good for."[50] This apocalyptic view of wolves, while unfounded, resonates with lawmakers and threatens wolf recovery in Utah just as it did in Yellowstone. Based on depredation rates in other states where wolves are in close proximity to livestock, authors of the USU study estimate that a managed population of 200 wolves in Utah would result in the annual loss of approximately 2 adult cattle, 116 calves, and 385 sheep.[51] Using 1999 livestock values, the total cost of all sheep and cattle losses would be approximately $70,000. To put this figure in perspective, Utah's cattle industry grossed $376 million in sales in 2002.[52] To help defray the potential cost of wolf damage to livestock, the Utah State Senate voted in 2003 to create a check-off on state income tax returns allowing Utahns to contribute to a fund to reimburse ranchers for livestock lost to wolves.[53] Additionally, Defenders of Wildlife, a national conservation organization that compensates ranchers in several western states for wolf-related livestock losses, has extended the same policy to Utah ranchers.[54]

A third complaint against wolves recolonizing in Utah is that they pose a threat to human life. This claim is baseless.[55] In reality, large game animals such as bison and moose probably pose a greater threat to humans than wolves. In the eight years since wolves were reintroduced to Yellowstone, for example, the wolf population has steadily increased. No wolf attacks have occurred, but between 1990 and 1999, eleven people in Yellowstone were charged by bison and thrown up to fifteen feet through the air and gored or trampled.[56] Similarly, on March 3, 2004, a man was nearly killed by a moose while snowshoeing in Utah's Wasatch Mountains. The unprovoked attack left the man with multiple lacerations, a fractured scapula, and head trauma.[57]

Although wolves are not a serious threat to human life, it is understandable why people fear them. In a 1971 *Ensign* article, Wendell J. Ashton explained why he himself had formerly feared the wolf. Brother Ashton said he had accepted without reservation the traditions of his ancestors, who, when they immigrated to America, carried with them northern European myths of wolf ferocity toward humans. Like Leopold, Brother Ashton experienced a shift in attitude regarding wolves. Though he feared wolves as a child, he admired them as an adult after he educated himself about their natural history. He described how an eastern Canadian wildlife official "had a standing reward for anyone claiming to have been bitten by a wolf in Ontario. The reward was

never claimed." As Brother Ashton learned more of the wolf, he became "convinced that the wolf's howl is like so much in life. We often fear things . . . because we do not know them."[58]

In a survey of human attitudes toward wolves, Kristen La Vine compared perceptions of Utahns with those of western Montana residents who actually live among wolves. When asked if a person in wolf country is in danger of being attacked, only 57 percent of Utah residents disagreed. Contrastingly, 80 percent of Montana residents disagreed with the statement.[59] The disparity in responses suggests that people's fear of wolves is alleviated through the experience of living near them. Indeed, mountain lions, which are far more likely than wolves to attack humans, are numerous in Utah.[60] However, the presence of mountain lions usually goes undetected, and their potential danger is still so minimal that it fails to alter the activities of outdoor recreationists.[61]

The fourth reason commonly cited in order to repress wolf restoration in Utah is that due to the state's growing population, there is no longer sufficient habitat and game in the region to support wolves.[62] In reality, Utah has substantial wolf habitat.[63] Even Italy, whose human population density is eighteen times greater than Utah's, supports a thriving gray wolf population.[64] Furthermore, biologists estimate Utah's deer and elk herds could absorb losses from as many as seven hundred wolves.[65]

The Goodness of the Creation

During the Creation, the Lord blessed the earth to produce grass, trees, whales, birds, "and every living creature that moveth," and it was "good" (Abraham 4:21). When the six days of creation were complete, the Lord examined the totality of His handiwork. He was pleased with its grandeur and the harmony with which all things worked together. The Creation was not only good, we are told, but "very good" (Genesis 1:31). However, if we possess only a superficial relationship with the Creation, we may forget that our Father in Heaven notes the fall of a sparrow (see Matthew 10:29) and incorrectly assume that He sanctions the local extirpation and even extinction of "inconvenient" species. Hugh Nibley reminded us that when God commanded Adam to "be fruitful, and multiply" (Genesis 1:28), He informed Adam that the identical commandment was given to all other forms of life. Furthermore, God entrusted Adam with the awesome responsibility of ensuring that His purposes were fulfilled. "As Brigham Young explains it," writes Nibley, "while 'subduing the earth' we must be about 'multiplying those organisms of plants and animals God has designed shall dwell upon it,' namely 'all forms of life,' each to multiply in its sphere and element and have joy therein."[66]

For Brigham Young and his contemporaries, reverence for the sanctity of living things was largely based on the revolutionary Mormon doctrine that animals, like humans, possess eternal spirits and are assured the blessings of the resurrection (see D&C 77:2–3; Moses 3:19). To appreciate the significance of this extraordinary teaching, it is important to remember that most nineteenth-century Euro-Americans still embraced the philosophy of René Descartes, who, two hundred years earlier taught that animals were without souls and could therefore be destroyed with impunity.[67] Conversely, through Joseph Smith, the Lord revealed the error of such doctrine: "And the blood of every beast will I require at your hands" (Joseph Smith Translation, Genesis 9:11).

In the October 1971 general conference, Elder Boyd K. Packer compared the restored fullness of gospel principles and ordinances to a piano keyboard. If a person is properly trained, Elder Packer observed, he or she "can play a variety without limits; a ballad to express love, a march to rally, a melody to soothe, and a hymn to inspire; an endless variety to suit every mood and satisfy every need." Why then would anyone "choose a single key and endlessly tap out the monotony of a single note, or even two or three notes, when the full keyboard of limitless harmony can be played"? Elder Packer skillfully

employed the piano metaphor to point out that many Christian denominations (and even individual Latter-day Saints) tap on a single key of doctrine. "The note they stress may be essential to a complete harmony of religious experience," Elder Packer acknowledged, "but it is, nonetheless, not all there is. It isn't the fullness."[68]

As a former missionary in New Zealand, I found numerous opportunities to use Elder Packer's piano analogy to help investigators of the Church realize the eternal blessings of *all* restored gospel principles. Now, as a professor of environmental geography at Brigham Young University, I apply Elder Packer's piano analogy to biodiversity. Each time I do, my students are struck by how a complete range of piano notes not only resembles the fullness and harmony of Christ's living Church but His living creations as well. When human activities contribute to the extinction of a species, or even its local disappearance, the ecosystem to which that species belongs loses its harmony. The result is that nature is left with fewer keys with which to play its living melody. As the nineteenth-century geographer George Perkins Marsh observed, "Man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords."[69] Not coincidentally, biologists use the term "disharmonic" to describe biotas of remote oceanic islands that invariably lack the diversity of continental ecosystems.[70]

Clearly the Lord wishes us to respect His entire creation, not merely part. Indeed, we embrace a religion that contains the fullness of the gospel and asks us to respect the fullness of creation. This fullness can instruct and inspire. Henry David Thoreau, who ardently admired all of God's creations, lamented that "the nobler animals"—the cougar, bear, and wolf—had all been exterminated from his beloved Concord environs: "I cannot but feel as if I lived in a tamed, and, as it were, emasculated country," he confided in his journal.

> I seek acquaintance with Nature,—to know her moods and manners. Primitive Nature is the most interesting to me. I take infinite pains to know all the phenomena of spring, for instance, thinking that I have here the entire poem, and then, to my chagrin, I learn that it is but an imperfect copy that I possess and have read, that my ancestors have torn out many of the first leaves and grandest passages, and mutilated it in many places. I should not like to think that some demigod had come before me and picked out some of the best of the stars. I wish to know an entire heaven and an entire Earth.[71]

In the same transcendental tone as Thoreau, President Joseph F. Smith remarked: "Nature helps us to see and understand God. To all His creations we owe an allegiance of service and a profound admiration. . . . Love of nature is akin to the love of God; the two are inseparable."[72]

None of our modern prophets were trained in the complexities of conservation biology. Nevertheless, because they recognize environmental stewardship as a commandment, they advocate the same fundamental ideals as conservationists, namely, that humans are responsible for all life on earth. President Spencer W. Kimball, who spoke worshipfully of the Creation, said that our respect for living things "should extend . . . to the life of all animals. . . . It is wicked to destroy them."[73] Regarding his prophetic directive against wasteful killing, President Kimball urged that we look to the life of Joseph Smith. To make his point, President Kimball related the following experience from the Prophet Joseph's life:

> We crossed the Embarras River and encamped on a small branch of the same about one mile west. In pitching my tent we found three . . . prairie rattlesnakes, which the brethren were about to kill, but I said, "Let them alone—don't hurt them! How will the serpent ever lose his venom, while the servants of God possess the same disposition and continue to make war upon it?" . . . The brethren took the serpents carefully on sticks and carried them across the creek. I exhorted the brethren not to kill . . . an animal of any kind during our journey unless it became necessary in order to preserve ourselves from hunger.[74]

Few wildlife hazards posed a greater threat to personal safety in Joseph Smith's day than the

envenomed fangs of a rattlesnake. Nevertheless, the Prophet was emphatic that the snakes not be harmed. Brigham Young, ever the environmental exemplar for the Saints, taught a similar lesson regarding another despised creature—the infamous grasshoppers or "Mormon crickets." Reminiscent of the cricket hoards that had tested the spiritual mettle of the pioneers twenty years previously, another plague of insects was predicted to overwhelm the 1868 harvest: "According to present appearances," President Young said, ". . . we may expect grasshoppers to eat up nearly all our crops. But if we have provisions enough to last us another year, we can say to the grasshoppers—these creatures of God—you are welcome. I have never yet had a feeling to drive them from one plant in my garden; but I look upon them as the armies of the Lord."[75]

President Young certainly did not condemn desperate Saints for killing crickets, but he would not have sanctioned the cricket's extinction (had it been feasible) at the hands of the pioneers either. Significantly, while the Lord intervened in the pioneers' losing battle against the crickets, His providence stopped far short of purging the insects from Deseret.[76]

Although Brigham Young saw a need to exercise local predator control during the early years of settlement in Salt Lake City, he always chastened individuals who wasted what they killed. Victor Sorensen notes that many of the animals destroyed during the assault against predators in the winter of 1848–49 were also used for food and clothing.[77] Priddy Meeks, whose family endured great hardship during their initial years in the Salt Lake Valley, consumed a variety of unconventional foods, including wolves: "My family went several months without a satisfying meal of victuals. . . . I shot hawks and crows and they ate well. . . . We used wolf meat, which I thought was good."[78]

While some predator control was certainly justified in pioneer-era Utah, wolf persecution became intense and persisted until wolves were completely destroyed.[79] Mormon environmental doctrine remained fixed, but as early as the late 1850s Church leaders found it increasingly difficult to persuade the Saints to observe the environmental ideals of Joseph Smith and Brigham Young.[80] Predator control rendered Mormon settlements and adjacent rangelands safe for sheep and cattle, but the sheer numbers of livestock herded into the mountains each spring severely degraded vulnerable watersheds. Nineteenth-century Mormon Apostle Orson Hyde vigorously preached against careless grazing practices, but such council generally went unheeded, and by 1900 "Utah's mountain ranges had been virtually grazed bare."[81] Later, as Utah's last wolves and grizzly bears were being exterminated, President Joseph F. Smith admonished Saints "to keep the balance of animal life adjusted to the needs of creation. Man in his wanton disregard of a sacred duty has been reckless of life. He has destroyed it with an indifference to the evil results it would entail upon the earth."[82] Equally trenchant but less critical than President Smith, Utah historian Thomas Alexander notes:

> Sadly, the major opposition in [Utah's] ecological battle came not from evil people bent on destroying the environment, but rather from well-meaning citizens pursuing markets under a secularized entrepreneurial tradition. Many of those who ran the grazing herds, lumber mills, and smelters were also Latter-day Saints who forgot or ignored the teachings of Joseph Smith and Brigham Young in their quest for survival or wealth. In resisting environmentally sound proposals, often driven by market opportunities, they valued jobs and wealth more than the sanctity of life, stewardship, and reverence for the earth.[83]

Our Modern Response to Wolf Restoration

In March 2003, Brigham Young University's J. Reuben Clark Law School assembled a panel of individuals to discuss the positions of various interest groups regarding wolf restoration in Utah. The panel included the founder of the High Uintas Preservation Council, a Utah State

University predator biologist, a representative from the Utah Farm Bureau, and a spokesman for Sportsmen for Fish and Wildlife. All presenters made compelling arguments to support their particular position regarding wolves. As I exited the lecture hall, I heard one of the law students in attendance ask a friend, "How are we supposed to know what to think on *that* issue?" I appreciated his dilemma. The answer was not obvious, because the concept of religious stewardship was not part of the discussion. In the Doctrine and Covenants we read "I the Lord . . . make every man accountable, as a steward over earthly blessings, which I have made and prepared *for my creatures*" (D&C 104:13, emphasis added).

Brigham Young said we were given dominion over the Creation "to see what we would do with it—whether we would use it for eternal life and exaltation or for eternal death and degradation."[84] As Hugh Nibley contended, "Man's dominion is a call to serve, not a license to exterminate."[85] By exterminating the wolf and several other species in Utah, however, we relinquished our stewardship of those creatures.[86] Today, many Utah Latter-day Saints wish to have that stewardship restored through the successful return and management of wolves, but most state politicians are less enthusiastic. When confronted with the likelihood that some of Yellowstone's wolves would begin dispersing into Utah, the state's current House assistant majority whip became alarmed for the livestock industry, proclaiming: "I don't want wolves exterminated. I just don't want them in Utah."[87] Another Utah politician expressed a similar disdain and fear of wolves: "My personal feeling is we should not let wolves into Utah. . . . I've read some stories and books, and they kill people!"[88]

The wolf issue in Utah is complex and emotional. When carefully examined, however, the major arguments against wolf restoration evaporate. Certain fears may linger, but fear must never diminish our commitment to stewardship. The dangers of such a path can lead to a spiritual disconnect from nature as evidenced in the public forum letter to the *Deseret News* quoted at the beginning of this essay: "This obsession with reintroducing wolves has no logical grounds other than the desire to live in a pristine world, a kind of holy nostalgia for a time that no one really remembers. . . . The pressure to bring wolves back has no point other than pursuit of a dream of Eden."[89] For Brigham Young, restoring the earth to a pristine condition is what the Lord requires of Latter-day Saints. Hugh Nibley illuminated Brigham Young's admonition: "If the earth still retained its paradisiacal glory, we would be justified in asking, 'What do we do now?' But that glory is departed, and the first step in the rebuilding of Zion is to help bring it back."[90]

The Lord is no "respecter of persons" (D&C 1:35) and, if we take modern prophetic utterances seriously, no respecter of species. Utah wolf restoration is consistent with Latter-day Saint environmental doctrine. Indeed, how shall "the wolf . . . dwell with the lamb," (Isaiah 11:6) as Isaiah prophesied, if we, as a believing people, forbid wolves even a small place in Utah?

The conservation of large carnivores—mountain lions, grizzly bears, and wolves—weighs on contemporary America's consciousness. The political drama that characterized the wolf's return to Yellowstone spawned at least five books on the subject. During the public hearings period of Yellowstone's wolf reintroduction Environmental Impact Statement, seven hundred witnesses testified in court, and letters were received from more than forty nations. There were 160,000 written comments submitted concerning the proposal—100,000 of them supporting wolf reintroduction. "It was," marveled Thomas McNamee, "the biggest official citizen response to any federal action ever."[91]

In practice, if Utah clings to the unenlightened nineteenth-century view that wolves are merely beasts of waste and desolation (even Roosevelt later reversed his antipredator views), it will substantiate the unflattering and widespread perception that Latter-day Saints lack an identifiable environmental ethic, or worse, tolerate

antienvironmental practices.[92] That such a perception exists is manifest in public opinion and in the writings of authors as disparate as Wallace Stegner and David Brower.[93]

Latter-day Saint environmental doctrines are sweeping in scope and include much more than wolf conservation. However, goals like clean air and water, while laudable, are required for our very survival. It requires a higher level of stewardship to preserve redwoods and salmon and even greater fortitude to accommodate magnificent but controversial predators like grizzly bears and wolves. Ecologist Paul Errington explains, "Of all the native biological constituents of a northern wilderness scene, I should say that wolves present the greatest test of human wisdom and good intentions."[94]

Regardless of our hopes or fears, wolves (and possibly grizzly bears) are coming to Utah.[95] If wolf recolonization occurs amid the vocal protests of Utah residents and, especially, its elected officials, Utah's dubious environmental reputation (and by logical association, the Church's) will remain unaltered. If, on the other hand, we recognize the charismatic allure of wolves, their ecological relevance, and our collective obligation to be stewards not only of elk and livestock, but of wolves and other predators, Utah (and the Church) will burst onto the environmental stage as a "light unto the world" (D&C 103:9).[96] For this to happen, the rift between pro- and anti-wolf factions must narrow. Conservationists, as already stated, have demonstrated goodwill toward the ranching community by creating a fund to compensate stockmen for wolf-killed livestock. Additionally, however, instead of criticizing ranchers for the deleterious impacts of livestock on the landscape, more conservationists should recognize that ranches preserve valuable open space.[97] If managed properly, ranches also provide productive wildlife habitat. The Church-owned Deseret Land and Livestock Ranch (DLL) in northern Utah, for example, supports 3,500 deer, 1,800 elk, 600 antelope, 100 moose, and a host of other wildlife, including the region's largest concentration of sage grouse—a species that has declined and even disappeared over much of its historical range.[98] Recently, the National Audubon Society selected DLL as one of several important bird areas in Utah.[99]

Conservationists also need to respect ranchers for who they are—humble, honest, and hardworking people who have a legacy with the land and who suffer both emotionally and financially from livestock losses to predators. When plans were being formulated to reintroduce wolves to Yellowstone, the Sierra Club insisted that wolves, when they began dispersing beyond national park boundaries, receive the full protection of the Endangered Species Act even if they became habitual livestock killers.[100] Ironically, if the majority of conservationists had held fast to unconditional wolf protection, political realities are such that wolves would never have been returned to Yellowstone.

Biologist David Mech, who served as an advisor to Yellowstone's wolf reintroduction project, advocates sensible wolf management:

> The wolf's repopulation of the northern parts of the lower forty-eight states . . . will stand as one of the primary conservation achievements of the twentieth century. Society will have come full circle and corrected its grave overreaction to its main mammalian competitor. Maybe not quite full circle. If we have learned anything from this ordeal, it is that the best way to ensure continued wolf survival is, ironically enough, not to protect wolves completely. If we carefully regulate wolf populations instead of overprotecting them, we can prevent a second wave of wolf hysteria, a backlash that could lead once again to persecution.[101]

Embracing Mech's wisdom is critical to making Utah wolf restoration palatable to politicians and ranchers.[102]

For Utah to improve its environmental reputation through wolf recovery, ranchers also need to make concessions. First, Utah ranchers should welcome the Defenders of Wildlife organization's successful and very public Wolf Compensation Fund instead of falsely complaining to

the media that wolves will put ranchers out of business. Secondly, ranchers should adopt animal husbandry strategies that focus more on livestock management than predator control. If more cattle ranchers confined their animals to fenced enclosures or removed them from areas inhabited by wolves during the calving season, it would drastically reduce the possibility of wolf depredations on calves.[103] Sheep ranchers could similarly protect their stock against losses to wolves and other predators if they would look after their animals with greater vigilance.[104] The Old World custom of shepherds tending their flocks by night (described with poignant significance in the New Testament) has been all but forsaken in Utah.[105]

While the above suggestions, if followed, would make the Utah wolf debate less divisive, there remains an additional issue that current Utah Latter-day Saints must address in a manner more favorable than we have heretofore done—namely, wilderness preservation. Wolves do not require wilderness landscapes to thrive, but human conflicts with predators, particularly wolves and grizzly bears, are far less frequent in areas possessing wilderness qualities. In the Intermountain West—including, remarkably, Utah—wilderness preservation is often denigrated as elevating conservation objectives above economic interests. When we view nature's panorama through an economic lens, we forget that one of the primary purposes of the Creation was to provide a beautiful and biologically rich environment for God's children. Ecologist Thomas Lovejoy notes: "Conservation is sometimes perceived as stopping everything cold, as holding [wolves] in higher esteem than people. It is up to science to spread the understanding that the choice is not between wild places or people, it is between a rich or an impoverished existence for Man."[106]

As Latter-day Saints, we are doctrinally obligated to preserve the Lord's creations. Encouraging wolves to resume their ecological role in Utah is not the only way we can demonstrate our commitment to living things, but to today's ecologically sophisticated world, it would be one of the most demonstrative and courageous.

Notes

1. According to the Utah Division of Wildlife Resources, the last wolf record in Utah is from San Juan County in 1929. The *Salt Lake Tribune*, however, reported that a trapper killed two wolves in 1946 near Salina ("Return of the Wolf," December 29, 2002). Regardless of when the last wolf occurred in Utah, wolves were so rare by 1920 that both their ecological value and potential economic havoc would have been negligible.

2. Jerry Spangler, "Wolves Are in Utah to Stay, Feds Say," *Deseret News*, December 4, 2002. Although free to remain in Utah, any wolves currently entering the state may be destroyed by the USFWS if they destroy livestock. In addition to the trapped wolf, it was believed that a second wolf had been in the company of the first, based upon what appeared to be two sets of wolf tracks in the snow.

3. The *Deseret News* recently changed its name to the *Deseret Morning News*. However, only the original name of the newspaper is used in this essay in order to avoid confusion.

4. Allison Jones, "Welcome Wolves Back," *Deseret News*, December 6, 2002.

5. Allen Thorpe, "Wolves' Revival Pointless," *Deseret News*, December 9, 2002. Despite Thorpe's comment, no party is advocating physical reintroduction of wolves to Utah. Rather, wolf proponents are hopeful wolves will recolonize Utah through natural dispersal.

6. Elden J. Watson, *Manuscript History of Brigham Young, 1846–1847* (Salt Lake City: Watson, 1971), 88 (May 6, 1847).

7. This is not to suggest that large game animals would have been equally numerous in the Great Basin as on the Great Plains were it not for overhunting by trappers. The fertile soils and regular summer thunderstorms of the Great Plains (which are not duplicated in the Great Basin) produced highly nutritious grasses that could sustain great numbers of game. For a review of the early history of game animals along the Wasatch Front, see Edwin V. Rawley, *Early Records of Wildlife in Utah* (Salt Lake City: Division of Wildlife

Resources, Utah Department of Natural Resources, 1985); see also Thomas G. Alexander, "Stewardship and Enterprise: The LDS Church and the Wasatch Oasis Environment, 1847–1930," *Western Historical Quarterly* 25 (Autumn 1994): 340–64.

8. Victor Sorensen, "The Wasters and Destroyers: Community-sponsored Predator Control in Early Utah Territory," *Utah Historical Quarterly* 62 (Winter 1994): 26–41. While deer are the most common big game animals in Utah today, nineteenth-century trappers mostly hunted bighorn sheep, elk, and bison. Indeed, elk and bighorn sheep probably outnumbered deer at the time.

9. For a review of pioneer perceptions of (and impacts on) wildlife, see Linda H. Smith, *A History of Morgan County* (Salt Lake City: Utah State Historical Society, 1999).

10. Hank Fischer, *Wolf Wars* (Billings, MT: Falcon Press Publishing, 1995). When hunting restrictions (such as bag limits) were finally written into law, there was often insufficient manpower to enforce them. Consequently, harvesting laws were widely ignored during the late 1800s and early 1900s.

11. For livestock figures, see "Measures of Economic Changes in Utah, 1847–1947," *Utah Economic and Business Review* 7 (December 1947): 51. See also Gary Vern Keetch, "The Changing Impact of Man in American Fork Canyon" (master's thesis, Brigham Young University, 1968).

12. Sorensen, "Wasters and Destroyers."

13. *Journal History of the Church of Jesus Christ of Latter-day Saints*, January 1, 1849.

14. *Journal History of the Church of Jesus Christ of Latter-day Saints*, March 15, 1849. Only wolves and foxes are mentioned in the actual record. Nevertheless, coyotes were probably the most abundant canid in the Salt Lake Valley in the mid-1800s, and coyotes almost certainly comprised the majority of the reported wolf killings.

15. Leonard J. Arrington, *Great Basin Kingdom: An Economic History of the Latter-day Saints, 1830–1900* (Salt Lake City: University of Utah Press, 1993); Sorensen, "Wasters and Destroyers." Arrington and Lopez state that local Indians also killed a significant number of livestock. This may have been due to the rapid decrease of game animals.

16. Barry Lopez, *Of Wolves and Men* (New York: Scribner, 1978), 180–81, 184, 148.

17. Fisher, *Wolf Wars*.

18. Theodore Roosevelt, *The Works of Theodore Roosevelt*, ed. Herman Hagedorn (New York: Charles Scribner's Sons, 1927), 305.

19. Aldo Leopold, as quoted in Fisher, *Wolf Wars*, 31–32. See also Aldo Leopold, "The Game Situation in the Southwest," *Bulletin of the American Game Protective Association* (April 1920), 5.

20. Aldo Leopold, *A Sand County Almanac* (New York: Ballantine Books, 1991), 138–41.

21. Some hunters take issue with the notion that wolves are crucial to ecosystems since hunting by humans also keeps game populations at or below the carrying capacity of the land. Unlike human hunters, however, predators hunt throughout the year and leave a portion of their quarry at the site of the kill. These remains provide regular and important nourishment to many other animals.

22. Wolves were simultaneously released in Idaho's Frank Church River of No Return Wilderness Area.

23. Alston Chase, *Playing God in Yellowstone* (Boston: Atlantic Monthly Press, 1986).

24. Chase, *Playing God in Yellowstone*.

25. Chase, *Playing God in Yellowstone*.

26. Chase, *Playing God in Yellowstone*; John Good, "Reminiscence from the Firing Line," *Yellowstone Science* 8, no. 2 (Spring 2000): 3–6; see also Douglas B. Houston, "The Northern Yellowstone Elk: Ecology and Management (New York: Macmillan, 1982). By 1969, Houston reports that Yellowstone's northern elk herd was reduced from some 16,000 to 4,000 animals.

27. Chase, *Playing God in Yellowstone*.

28. Fischer, *Wolf Wars*; Thomas McNamee, *The Return of the Wolf to Yellowstone* (Markham, ON: Fitzhenry and Whiteside, 1997); Lee Davidson, "Reintroduction of Wolf Is a Howling Success," *Deseret News*, September 3, 2003. A major reason ranchers often resent wolf restoration is that it is an endeavor to reverse the "wrong-doing" of the ranchers' ancestors who exterminated wolves. No one, of course, likes to accept the possibility that their ancestors did something wrong. Killing wolves, however, was not wrong in the 1800s and early 1900s. Rather, it was widely encouraged—especially by the federal government.

29. Fischer, *Wolf Wars*; McNamee, *The Return of the Wolf to Yellowstone*; Davidson, "Reintroduction of Wolf Is a Howling Success," *Deseret News*, September 3, 2003.

30. Fisher, *Wolf Wars*, 106.

31. Fischer, *Wolf Wars*; McNamee, *The Return of the Wolf to Yellowstone*; Michael K. Phillips and Douglas W. Smith, *The Wolves of Yellowstone* (Stillwater, MN: Voyageur Press, 1996).

32. Phillips and Smith, *The Wolves of Yellowstone*. The Canadian wolves were not immediately released in Yellowstone for fear that they would leave the park and endeavor to find their way back to their Alberta territory. Instead, the wolves were confined for several weeks to a one-acre fenced enclosure where they could acclimate to (and adopt as their new home) Yellowstone's Lamar Valley.

33. Mark Randall, "Local Ranchers Uneasy about Wolves in Utah," *Herald Journal*, January 5, 2003.

34. Kristen P. La Vine, "Attitudes of Utah Residents toward Gray Wolves" (master's thesis, Utah State University, 1995).

35. Farley Mowat, *Never Cry Wolf* (New York: Bantam Books, 1979), 84–85. Consistent with the Inuit tale, the majority of wolf-killed elk in Yellowstone have been calves and post-reproductive age females. In contrast, human-killed cow elk near Yellowstone's northern border average just six years of age—the prime reproductive age for elk. While wolves primarily kill newborn, old, and sick animals, the common belief that they never kill healthy adult animals is fallacious. For data regarding wolf-killed elk in Yellowstone, see L. David Mech and others, "Winter Severity and Wolf Predation on a Formerly Wolf-free Elk Herd," *Journal of Wildlife Management* 65 (2001): 998–1003.

36. William J. Ripple and Robert L. Beschta, "Wolves and the Ecology of Fear: Can Predation Risk Structure Ecosystems?" *Bioscience* 54, no. 8 (2004): 755–66.

37. Nicholas Thompson, *Boston Globe*, September 30, 2003; Chris Welsch, "Yellowstone: The Last, Wildest Place in Lower 48," *Deseret News*, April 20, 2003.

38. Hank Fisher, "The Wolf Settles in at Yellowstone," *Defenders Magazine*; http://www.defenders.org/magazinenew/guest/varleymag.html (accessed October 30, 2003).

39. Fisher, "The Wolf Settles In."

40. Fisher, "The Wolf Settles In." The regeneration of riparian vegetation has also improved cutthroat trout habitat by shading the water. By screening out the sun, water temperatures remain cool and within the range preferred by trout. Shading vegetation also makes trout less vulnerable to predators.

41. Douglas W. Smith, Rolf O. Peterson, and Douglas B. Houston, "Yellowstone after Wolves," *Bioscience* 53, no. 4 (1994): 330–40. Ecologists have long known that the eradication of large carnivores leads to the proliferation of mid-sized predators such as coyotes and bobcats. For a recent review of challenges facing wildlife in Utah's Wasatch Mountains, see Dennis Romboy, "Utah's Wild Side," *Deseret News*, September 30, 2003.

42. Smith, Peterson, and Houston, "Yellowstone after Wolves."

43. "Balanced" is often an oversimplified term in ecology. Predator and prey populations always fluctuate, but wolves preserve rather than destroy biodiversity. For an excellent resource on the ecological value of wolves, see Tim W. Clark and others, *Carnivores in Ecosystems: The Yellowstone Experience* (New Haven: Yale University Press, 1999). For a study concerning the rapid increase in Yellowstone's red fox population following the reintroduction of wolves, see Bob Fuhrmann, "Tracking Down Yellowstone's Red Fox: Skis, Satellites, and Historical Sightings," *Yellowstone Science* 10, no. 1 (Winter 2002): 8–15.

44. Mike Stark, "Gray Wolves Alter Behavior of Elk Herds, *Billings Gazette*, September 18, 2003. See also Ralph Maughan, "Has Yellowstone Park Wolf Population Growth Ended?" http://www.forwolves.org/ralph/yellowstone-park-wolf-population-growth ends1.htm (accessed October 30, 2003). In addition to lethal hostilities between neighboring packs as a limiting factor to wolf populations, disease also has a significant impact on wolves. In a presentation to the North American Interagency Wolf Conference at Chico Hot Springs, Montana, April 3–5, 2001, Yellowstone wolf recovery coordinator Douglas Smith explained that approximately half of all wolf pups born in Yellowstone in 1999 likely died of parvovirus.

45. "Call of the Wolves Attracting Tourists," *Deseret News*, January 18, 2000.

46. L. David Mech, "Estimated Costs of Maintaining a Recovered Wolf Population in Agricultural Regions of Minnesota," *Journal of Wildlife Management* 64 (1999): 129–36. While there are economic benefits to wolf recovery, there are also obvious costs. Hunting guides, for example, are likely to lose potential income

as elk become less numerous and potential hunters look to other areas to harvest a trophy animal.

47. "Will Utah Find Room for Wolves?" *Salt Lake Tribune*, December 31, 2002.

48. T. Adam Switalski and others, "Wolves in Utah: An Analysis of Potential Impacts and Recommendations for Management," *Natural Resources and Environmental Issues* 10, Utah State University. These depredation estimates are based on 200 wolves in areas reasonably remote from livestock. Currently, a wolf entering Utah is just as likely to wander into a ranching area as a national forest. Such a wolf may kill numerous sheep, leading to the erroneous perception that every wolf will have the same proclivity. In areas surrounding Yellowstone, wolves have actually killed fewer livestock than originally predicted by biologists.

49. "Will Utah Find Room for Wolves?" *Salt Lake Tribune*, December 31, 2002. See also http://timberwolfinformation.org/info/archive/newspapers/viewnews.cfm?ID=405 (accessed June 10, 2005).

50. Mark Randall, "Local Ranchers Uneasy about Wolves in Utah," *Herald Journal*, January 5, 2003.

51. Switalski and others, "Wolves in Utah." The loss of 385 sheep to 200 wolves in Utah each year would have little impact on the sheep industry. Conversely, coyote depredations upon sheep are severe. Utah wool growers lose approximately 34,000 sheep to predators (mostly coyotes) annually. See UASS 2000, as cited in Switalski and others, "Wolves in Utah."

52. "Will Utah Find Room for Wolves?"

53. The bill designed to compensate ranchers for wolf-killed livestock (HB305) was soundly defeated on March 3, 2003 ("Wolf-Hating Senate Kills Bill to Aid Wolf Victims," *Deseret News*, March 4, 2003). Utah politicians feared that passing the bill would falsely signal their approval of wolf recolonization. Without the compensation fund, however, ranchers would have had to absorb the cost of any animals lost to wolves. Embarrassed by this revelation, the Senate again voted on HB305 several days later. The bill readily passed ("House, Senate Bills Passed by Utah Legislature," *Deseret News*, March 8, 2003).

54. Defenders of Wildlife offered to reimburse two Utah sheep ranchers for wolf-killed livestock in Cache and Rich counties in 2002 and 2003. Neither individual submitted a claim for compensation (Suzanne Stone, Defenders of Wildlife, personal communication). Critics of the compensation program argue that some livestock kills by wolves cannot be verified for reimbursement.

55. In most localities, wolves are fearful of people. In the Canadian Arctic, where wolves are sometimes less timid of humans, wolves may act unconcerned with (or even trustful of) humans. They do not react with aggression, however. For an extraordinarily rare account of a wolf attack on a human, see Boyd Petersen's biography of Hugh Nibley in *Hugh Nibley: A Consecrated Life* (Salt Lake City: Greg Kofford Books, 2002). In Utah, some fear of wolves may derive from gruesome accounts of wolves consuming deceased bodies of handcart pioneers who succumbed to fatigue, starvation, and freezing temperatures (Robert Schmidt, personal communication). For a particularly graphic but poignant account of such travails, see: "Testimony of Robert Scott Lorimer before the U.S. House of Representatives Subcommittee on National Parks, Recreation, and Public Lands on H.R. 4103, the Martin's Cove Land Transfer Act May 4, 2002" http://resourcescommittee.house.gov/archives/107cong/parks/2002may04/lorimer.htm (accessed November 3, 2003).

56. Tom Olliff and Jim Caslick, "Wildlife-Human Conflicts in Yellowstone," *Yellowstone Science* 11, no. 1 (Winter 2003): 18–22.

57. See "Moose Attacks Snowshoer," *Deseret News*, March 4, 2004, and "Moose Victim Eager to Hit (Different) Trail," *Deseret News*, March 6, 2004. Despite the potentially lethal attack, Utah residents expressed concern for the welfare of the moose, which had to be heavily tranquilized by wildlife officers.

58. Wendell J. Ashton, "Wolf's Howl," *Ensign*, August 1971, 61. Today, environmental historians generally attribute European myths of wolf ferocity toward humans to occasional outbreaks of rabies.

59. La Vine, "Attitudes of Utah Residents toward Gray Wolves." It is important to note that La Vine's study predated the first recently recorded wolf in Utah by seven years.

60. Utah supports a population of approximately 2,000–3,000 mountain lions. For information on the potential danger of mountain lions to humans, see Stephen R. Kellert and others, "Human Culture and Large Carnivore Conservation in North America," *Conservation Biology* 10, no. 4 (1996): 977–90.

61. On August 8, 2003, the *Deseret News* reported that a female mountain lion on the banks of Utah's

Weber River attacked a fisherman whom she evidently perceived as a threat to her cubs. The attack was brief, and the fisherman was not seriously injured. The incident received little media attention. Conversely, when several sheep were attacked by a wolf in Rich County two months later, the event received significant television news coverage.

62. Jerry Spangler, "Big, Bad Wolves May Be in Utah," *Deseret News*, November 13, 2002.

63. The Bear River Mountains, the Book Cliffs region, and the North Slope of the Uinta Mountains are just three of numerous areas in the state where biologists believe wolves can thrive.

64. Luigi Boitani, "Wolf Management in Intensively Used Areas of Italy," in *Wolves of the World*, eds. Fred H. Harrington and Paul C. Paquet (Park Ridge, NJ: Noyes Publications, 1982), 158–72.

65. Switalski and others, "Wolves in Utah." This wolf estimate ignores Utah's current and severe drought conditions. Deer reproduction is presently low due to drought-induced food scarcity. Considering Utah's reduced game populations, fewer wolves could be supported. Unfortunately, wolf opponents usually fail to consider any limiting factors to wolf populations. Reflecting on the fact that twenty wolves in Utah's Book Cliffs area could kill several hundred deer and elk annually, the director of Utah's Sportsmen for Fish and Wildlife group, Don Peay, said, "Throw in a few wolf litters and in four years you're out of elk" ("Will Utah Find Room for Wolves?" *Salt Lake Tribune*, December 31, 2002). In his statement, Peay ignores the fact that elk and deer reproduce (in variable numbers) annually. His remarks also imply that decreasing prey availability has no negative impact on wolf fecundity or pup survival rates.

66. Hugh W. Nibley, "Man's Dominion," *New Era*, October 1972, 24–31.

67. René Descartes, *Discourse on Method* (New York: Penguin, 1968).

68. Boyd K. Packer, "The Only True and Living Church," *Ensign*, December 1971, 40.

69. George Perkins Marsh, *Man and Nature: Or, Physical Geography as Modified by Human Action* (New York: Charles Scribner, 1864), 84. To nonecologists, Marsh's words may sound extreme. Anyone walking along the banks of Utah's Provo River, however, will find signs warning fishermen to wash all mud from their boots lest they inadvertently become agents in the spread "whirling disease"—a foreign neurological malady of trout and salmon.

70. A remote island of perhaps fifty square miles will not necessarily have fewer species than fifty square miles of continental landscape. The island species, however, will represent fewer genera and families.

71. Henry David Thoreau, *The Journal of Henry David Thoreau*, eds. Bradford Torrey and Francis H. Allen (Salt Lake City: Peregrine Smith Books, 1984), 8:220, 221.

72. Joseph F. Smith, "Editorial Thoughts," *Juvenile Instructor*, April 1918, 183.

73. Spencer W. Kimball, "Fundamental Principles to Ponder and Live," *Ensign*, November 1978, 43.

74. *History of the Church*, 2:71–72, as quoted in Kimball, "Fundamental Principles."

75. Davis Bitton and Linda P. Wilcox suggest that Brigham Young's comments regarding crickets were made in jest ("Pestiferous Ironclads: The Grasshopper Problem in Pioneer Utah," *Utah Historical Quarterly* 46 [Fall 1978]: 351). Given Brigham Young's reverence for the sanctity of life, however, Thomas Alexander believes Brigham Young's comments were not entirely tongue and cheek ("Stewardship and Enterprise"). Moreover, Hugh Nibley fails to make any qualifying statement about the quote in his analysis of Brigham Young's environmental ethics (Hugh W. Nibley, *Brother Brigham Challenges the Saints* [Salt Lake City: Deseret Book, 1994]).

76. Indeed, farmers in Utah and Nevada still contend with Mormon crickets today. One historian describes the loathsome marching columns of crickets as "rivers of syrup" (Bernard de Voto, Douglas Brinkley, and Patricia Nelson Limerick, eds. *The Western Paradox: A Conservation Reader* [New Haven: Yale University Press, 2000], 254).

77. Sorensen, "The Wasters and Destroyers." (See note 8.)

78. Priddy Meeks, as quoted in Arrington, *Great Basin Kingdom*, 49.

79. An important catalyst in the destruction of wolves in Utah was the Territorial Legislature's Act of March 3, 1888. The act provided bounty payments on "obnoxious animals" including wolves, lynxes, bears, bobcats, coyotes, mountain lions, mink, jack rabbits, ground squirrels, and other animals (Rawley, *Early Records of Wildlife in Utah*). Even though many wolves would not have been livestock killers, they

were still worth a bounty, and they were relentlessly sought out by trappers.

80. Alexander, "Stewardship and Enterprise."

81. For Orson Hyde's remarks, see Alexander, "Stewardship and Enterprise." For details on overgrazing in Utah's mountains, see Charles S. Peterson, "Small Holding Land Patterns in Utah and the Problem of Forest Watershed Management," *Forest History* 17 (July 1973): 7. Earl M. Christensen and Myrtis A. Hutchinson cite numerous historical records indicating that overgrazing in lower valleys was also a chronic problem. Indeed, overgrazing led to such severe dust storms in Tooele County that the community of Grantsville nearly had to be abandoned ("Historical Observations on the Ecology of Rush and Tooele Valleys, Utah," Proceedings of the Utah Academy of Arts and Sciences 42 [1965], 90–105).

82. Joseph F. Smith, "Editorial Thoughts," *Juvenile Instructor*, April 1918, 182. Joseph F. Smith was not directing his remarks specifically to wolves or bears, but he regularly preached the commandment to protect all animal species.

83. Alexander, "Stewardship and Enterprise," 362.

84. Brigham Young in *Journal of Discourses* (London: Latter-day Saints' Book Depot, 1860), 8:67.

85. Nibley, "Man's Dominion," 35.

86. Other native Utah species that disappeared due to human persecution include the grizzly bear, wolverine, lynx, fisher, and river otter. Black-footed ferrets also became extinct in Utah, but the cause was mainly due to the large-scale eradication of prairie dogs (the ferrets' primary prey) and not direct harassment of the ferrets themselves.

87. Jerry Spangler, "Big, Bad Wolves May Be in Utah," *Deseret News*, November 13, 2002. Utah's House assistant majority whip, Michael Styler, later helped pass HJR12, a bill directing the Utah Division of Wildlife Resources to develop a wolf management plan for Utah. The objective of the management plan is to give Utah greater autonomy in managing wolves that enter the state. States usually provide less protection to rare species than the federal government, but Styler's bill has "cautious" support from wolf proponents.

88. Jerry Spangler, "Bid for Wolf Management Plan Gains," *Deseret News*, February 4, 2003.

89. Thorpe, "Wolves' Revival Pointless."

90. Hugh W. Nibley, *Brother Brigham Challenges the Saints*, 27.

91. McNamee, *The Return of the Wolf to Yellowstone*, 45.

92. Many years after Roosevelt labeled wolves as "beasts of waste and desolation," he saw firsthand the deleterious impacts of too many elk in Yellowstone. Roosevelt accordingly reversed his negative view of carnivores and began advocating their protection (Jeremy Johnston, "Theodore Roosevelt and Predators," *Yellowstone Science* 10, no. 2 [Spring 2002]: 14–21). For an examination of perceived environmental reluctance within Mormonism, see Richard C. Foltz "Mormon Values and the Utah Environment," in *Worldviews, Religion, and the Environment*, ed. Richard C. Foltz (Belmont, CA: Wadsworth/Thomson Learning, 2003), 403–13.

93. Wallace Earle Stegner, *The American West as Living Space* (Ann Arbor: University of Michigan Press, 1987); David Brower, *Let the Mountains Talk, Let the Rivers Run* (New York: Harper Collins, 1995). For comments concerning public opinion of Utah's environmental record, see Donna Kemp Spangler, "Outdoor Retailers Vent Ire at Leavitt," *Deseret News*, May 10, 2003.

94. Paul L. Errington, *Of Predation and Life* (Ames, IA: Iowa State University Press, 1967), 258.

95. USU predator biologist Robert Schmidt notes that "it's not a question of *if* wolves are coming to Utah, it's a question of *when*." According to Wasatch-Cache National Forest employee Randy Taylor (personal communication), biologists predict grizzly bears from a growing population in western Wyoming may begin dispersing into Utah's Uinta Mountains within several years. While individual male grizzlies might successfully reach the Uinta Mountains, female bears normally remain close to their natal territories throughout their lives. Consequently, the establishment of a reproducing population of grizzly bears in Utah, at least in the near future, is extremely remote.

96. This is not mere rhetoric. Secular scholarship is critical of Judeo-Christian environmental attitudes. If wolves are welcomed into Utah ("welcomed" being the operative word), it would distinguish the state and its Mormon culture as environmentally friendly toward creation. Sadly, Utah politicians are often stridently opposed to the high degree of species protection mandated by the Endangered Species Act. In 1986 Hugh Nibley characterized Utah's congressional delegation as "the most anti-environment in the nation" (Petersen,

Hugh Nibley: A Consecrated Life, 83). More recently, an article by Brett Prettyman of the *Salt Lake Tribune* noted that one Utah state senator "has historically had a soft spot for convicted poachers, particularly cases which involve predators" (February 22, 2004). Hopefully the favorable view that the majority of Utahns express toward wolf recovery will lead state lawmakers to consider more carefully the positive side of wolves in the environment.

97. In truth, the primary complaint that conservationists have against ranching has nothing to do with how ranchers manage their private property. Rather, the frustration of conservationists stems from governmental policies that allow public lands in the West to be managed in the interests of the ranching industry. Ranchers pay only $1.35 per cow/calf pair each month for the privilege of grazing their animals on public land. Half of this amount is returned to the rancher for maintenance of fences and other structures. Meanwhile, taxpayers finance government predator control programs that benefit ranchers but not the substantial segment of society interested in predator conservation (see letter by Craig Axford to *Discover* magazine's reader's forum, August 2000).

98. Rick Danvir, "Grazing Sagebrush-steppe for Sustainable Livestock and Wildlife Production," presentation to the Utah Chapter of the Wildlife Society annual meeting, March 12–14, 2003, Utah State University, Logan, Utah. For a thorough discussion of sage grouse management on the Deseret Land and Livestock Ranch, see Rick Danvir, "Sage Grouse Ecology and Management in Northern Utah Sagebrush-Steppe," A Deseret Land and Livestock Wildlife Research report, 2002, Deseret Land and Livestock Ranch and The Utah Foundation for Quality Resource Management.

99. The National Audubon Society, Utah IBA Program Sites Nominated and Selected, http://www.audubon.org/bird/iba/utah/sites.html (accessed November 3, 2003).

100. McNamee, *The Return of the Wolf to Yellowstone*.

101. L. David Mech, as quoted in Hank Fischer, *Wolf Wars*, viii.

102. Wildlife biologists estimate that between nine and nineteen wolves would need to be killed or relocated annually in Utah based on a managed population of 200 animals (Switalski and others, "Wolves in Utah").

103. F. H. Wagner, as cited in Switalski and others, "Wolves in Utah," 32. Confining beef cows to fenced enclosures does not prevent wolves from entering, but it helps ensure that calves remain close to their mothers, who vigorously protect them from predators.

104. J. W. Davenport, J. E. Bowns, and J. P. Workman, as cited in Switalski and others, "Wolves in Utah," 32.

105. Parables and stories in the scriptures make clear the importance of watching over one's sheep in order to protect them from danger. In Christ's time, leaving one's sheep in the care of someone else was ill advised (John 10:12). Similarly, in the Book of Mormon, Alma (Alma 5:59) spoke of shepherds protecting their sheep from "wolves" and killing (if possible) an offending animal. In Idaho, Defenders of Wildlife volunteers serve as defenders of livestock by watching over ranchers' animals at night during the calving season since calves are highly susceptible to wolf depredations.

106. Thomas E. Lovejoy, as quoted in Kathryn A. Kohm, ed., *Balancing on the Brink of Extinction* (Washington DC: Island Press, 1991), 225. Although Lovejoy was referring to whooping cranes, not wolves, his intended sentiment is applicable to every species.