Dedication

To Mike Seidman
(1944-2002)

A passionate conservationist, renaissance man, fighter, and gentleman, Mike devoted over thirty years to defending wildlife of the arid Southwest and Northern Mexico. He was instrumental in reintroducing the Mexican wolf and black-footed ferret. His passion will be missed, yet his inspiration endures.

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Foreword

Safe Havens, Safe Passages— Protecting Wild Nature in the Grand Canyon

Dark shapes hover on the edge of a steep trail into Grand Canyon. Four pairs of eyes appear in the headlamp beam and then one-after-another bound into utter blackness. The shadowy forms briefly solidify into desert bighorn sheep and then drop away into a predawn promise: 1.8 billion years of physical and biological process in the Grand Canyon ecoregion have made these cliffs home to a desert bighorn. Will we humans safeguard that promise?

Visions and Goals

Grand Canyon Wildlands Council weaves science, passion and integrity to save and heal wild nature in the Grand Canyon Ecoregion. The ecoregion extends from the high plateaus of Utah, across Grand Canyon to the Mogollon Rim in Arizona, and up to the headwaters of the Little Colorado River in New Mexico (Fig. 1). In this region, we envision an inspirational landscape of safe havens and passages for all its native life in the wild.

Only a view the size of the landscapes, rooted in science, ensures these species the potential to continue to exist and adapt. We do not trust in naïve optimism, but in an unrelenting commitment to the ethical treatment of the grand creation called wild nature. In this spirit, we present the Grand Canyon Wildlands Network, a network of conservation lands (Fig. 2) and stewardship actions. We describe its scientific and historical grounding and our conviction that putting this network into action will sustain our rich natural heritage.

Our goal is to re-wild: to restore the complexity of self-willed, naturally evolving wildlands. Rewilding relies on that deep commitment to the natural world. The task of working with nature rather than seeking to control it begins with a scientific understanding of the southern Colorado Plateau's intricate patterns of life. Working with nature calls for the stamina of effective stewardship based on this body of knowledge, long-range conservation planning and adaptive management (willingly changing what we do in response to new information).

Thus, creating safe havens and safe passages depends on a greater appreciation of ecological complexity. We can work toward solutions that bring more solutions, instead of more problems, to restore what has been lost. Diverse concepts like wildlife movement, elevation gradients, watersheds, geographic barriers and drought cycles make wildlands conservation like running a wild river—we must carefully chart our course, make wise decisions and act with humility as the river, nature and evolutionary dynamics unfold before us.

> Grand Canyon Wildlands Council's mission is to protect and restore wild nature in the Grand Canyon ecoregion.

Conserving the Continent

Land conservation in the past generally set aside relatively small refugia. These have gradually turned into islands of protected habitat in an expanding sea of degraded lands. Just as islands tend to lose native species when they are separated from a mainland, large protected landscape can also lose native biodiversity. For example, more than 16 vertebrate species, most of which are predators, have disappeared from Grand Canyon since it was designated as a national park in 1919 (Stevens and others in prep.).

One part of the solution is to create more and larger safe havens and protect all species. Even though designated wilderness affords the best protection for native biodiversity, our existing wilderness areas—national parks, wildlife refuges, and other protected areas—are too small and Isolated to effectively assure the preservation of our continent's diversity of life (Newmark 1995). As early as the 1920s, eminent ecologist Victor Shelford and the Ecological Society of America called for a careful inventory and planning for a United States system of natural areas protecting all ecosystem types. The original vision of The Wilderness Society founders, Bob Marshall, Benton MacKaye, Robert Sterling Yard and Aldo Leopold, included up to five different classes of protected areas to encompass the ecological, recreational and aesthetic values of wild nature (Foreman 2004).

These early conservationists could not imagine at the magnitude of the current extinction crisis. Nonetheless, their ideals and efforts to establish a comprehensive system

of protected areas are the fundamental building blocks for modern continental conservation. Since their day, science has consistently revealed the increased importance of maintaining or restoring connections between protected areas, as lands once vast and whole have become highly fragmented and as climate change brings new challenges. While safe havens (protected core areas) provide critical components for preserving wild nature, safe passages are needed for wildlife movement and for plant and animal dispersal and evolution.

How much land needs to be protected and in what configuration? In part this is determined by the needs of wide-ranging wildlife species that play a strongly interactive role in ecosystems. Conservationists and scientists now recognize the importance of large carnivores in intact natural ecosystems (Soulé and Terbough 1999) and the vast distances they cover. As an example, a conservative estimate indicates that a population of 1000-2000 adult mountain lions is necessary to assure their survival in North America? This would require 20 to 100 million acres of wildlands (Jordan 1991, Noss 1991). The entire National Wilderness Preservation System (NWPS) within the conterminous United States consists of only 35 million acres (Scott 2004).

The 222 million acres of presently unprotected potential wilderness on the U.S. mainland could be used to triple the size of the National Wilderness System (Scott 2004). It would be the first step towards saving all the pieces. The U.S. Fish and Wildlife Service endorses the proposal that wildlands networks are the most promising safety net for native species (USDI 1994). E. O. Wilson, one of the world's pre-eminent conservation biologists, argues that, "Wildland projects are not a utopian vision. They have been viewed as practicable by ecologists from Alaska to Panama and have already made government policy in Surinam. For these countries and for the rest of the world, now is the time to create systems of reserves, because the windows of opportunity are closing fast" (Wilson 2002).

SIDEBAR Leopold Quote

Wildlands Network Design

A wildlands network consists of linked wilderness core areas buffered by transition lands that are permeable to wildlife migration and genetic exchange among native populations (Foreman et al. 2000, a, b, Noss 1995, 1996). A wildlands network is designed to provide a flow of landscapes large enough to sustain effective populations of native wildlife and to allow natural abiotic processes such as fire and flooding to occur within their natural range of variability. Existing and proposed national parks and wilderness serve as core areas and the species they support can be safeguarded by protecting landscape connectivity, and by protecting adjacent lands (Noss 1995, Noss et al. 1999).

A protected wildlands network will require ecological restoration (healing the wounds), additional land conservation, and the authority to carry out immediate actions to protect and restore native biodiversity. Urgently-needed conservation efforts in the Grand Canyon Ecoregion include restoring extirpated (locally extinct) species, reducing road density, reducing grazing impacts, removing invasive exotic species, and restoring natural fire and flooding. Protecting and restoring ecological processes in the ecoregion requires that federal, state and private land stewards embrace regional and local conservation goals.

Establishing a Grand Canyon Wildlands Network will help us learn to live alongside the wild, to adapt together as climate changes, and to meet the challenge we all share: to deliver the Grand Canyon region's remarkable array of ecosystems to future generations, with all their intimacy and magnificence, and with their full complement of native species and ecological functions.

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—Kim Crumbo, Kelly Burke, and Larry Stevens
Flagstaff, Arizona
April 2008

Grand Canyon Wildlands Network Design

The Wildlands Network is a long-term effort to protect and restore the ecological integrity of North America, from Panama to Greenland. Most of the planning so far has taken place in the western United States and Canada, northern Mexico, and the northeastern United States and Canada. Formed in 1991 the Wildlands Network has involved a unique mixture of scientists and activists committed to ambitious, large-scale conservation. Compared to other conservation groups, the Wildlands Network places relatively more emphasis on maintaining, buffering, and connecting existing wilderness areas, “rewilding” landscapes that have been compromised by such factors as habitat fragmentation and loss of large carnivores and natural disturbances, and communicating the ecological values of wilderness. Most importantly, the Wildlands Network is moving beyond defensive efforts to present a positive, bold vision: we are developing a template for where we should focus on protecting and restoring wild nature.

As a means to the end of rewilding North America, the Wildlands Network has consistently invoked the concept of a continental-scale network of core conservation areas connected by broad habitat linkages. The continental-scale network, in turn, is composed of a linked system of regional-scale networks. Protecting and restoring populations of large carnivores and other potentially ecologically important or wide-ranging species has been a dominant theme of all Wildlands Network plans. Grand Canyon Wildlands Council’s central goal is to complete the design of the Grand Canyon Wildlands Network, one of the regional networks, in the Grand Canyon ecoregion. This ecoregion extends from the Mogollon Rim to the high plateaus of Utah, and from Grand Wash to the headwaters of the Little Colorado River.

Grand Canyon Wildlands Council has started with existing land ownership and status to identify the core areas, such as parks and wilderness areas, in a working Grand Canyon Wildlands Network. We added proposed wilderness lands we surveyed, along with other ecologically important lands proposed for special agency designations. We also added possible movement corridors for wide-ranging species like pronghorn antelope, where these species have been observed—these need to be verified scientifically. For the next stages of design, we created a model of the full range of habitats for the Grand Canyon ecoregion. We used U.S. Geological Survey satellite data combined with vegetation mapping from Grand Canyon National Park and the San Francisco Peaks. The rare habitats like alpine tundra, riparian areas, and springs were added to the working map. At the same time, our scientists compiled a list of focal species, including important biological information about them. Together, the habitat map and focal species information will be used to select additional land areas in need of protection and actions to take on behalf of native wildlife and plants. We will continue to report on our progress.

In the Grand Canyon ecoregion many opportunities to implement the Grand Canyon Wildlands Network have already arisen during the design phase. We worked hard to support the designation of the two new national monuments on the Arizona Strip because these areas were prominent in the working Grand Canyon Wildlands Network. We also wanted to make real change on the ground through our riparian restoration work and springs studies, having already found that these habitats were some of the most highly altered, rarest, and most ecologically important in this region. We have relied on the hard work of many volunteers and professionals to carry out these projects and we extend our great appreciation to all those who have contributed thus far.