

Turning Mountain Migrants into Mountain Stewards: Best Practices, Future Promise in Bridging Stakeholder Divides

Abstract: Surprising successes are emerging around the world in turning amenity-led mountain migrants into self-identifying, pro-active mountain stewards. Advances in computer-based environmental monitoring and communications technologies are creating new opportunities for drawing diverse stakeholders together to protect mountain regions. As mountain region stakeholder groups recognize their common interests such as spontaneous access and enjoyment of mountain environments plus common threats such as impacts of climate change on mountain environments, their willingness to cooperate increases.

But land managers and stakeholders both need to shift their perspectives in order to collaborate effectively in mountain stewardship. By knowing the most effective ways to bridge divides between stakeholder groups through meaningful stewardship "paths", land managers can help them to develop a cohesive sense of shared identity as "co-managers" of the mountains they love. Current best practices in moving amenity-led migrants and other stakeholder groups along the path to stewardship are described, from individual "citizen scientists" to continental-scale collaborations.

At the beginning of the 20th century, vast portions of mountain regions in the United States gained federal protection as "special places" in part because of an informal yet powerful collaborative relationship between a President and conservation-minded recreational user groups such as fishermen, hunters, and mountain climbers. Their collaborative vision and cohesive actions brought about a tectonic shift in the concept of land management: the creation of a large system of national parks, national forests, national seashores, and national wildlife refuges and preserves.

Because Theodore Roosevelt nurtured an effective collaboration with his politically powerful recreational stakeholder allies during his eight years as president (1901-1909), he was able to protect more land for national parks and nature preserves than all previous presidents combined. The collaboration's success was phenomenal: creation of 42 million acres (170,000 km²) of national forests, 53 national wildlife refuges and 18 areas of "special interest", such as the Grand Canyon. Today these protected areas are drawing increased numbers of amenity-led migrants to mountain regions to enjoy their conserved natural and cultural resources.

At the beginning of the 21st century, many protected areas and mountain regions of the world now are facing significant impacts from amenity-led migration and other complex threats, such as climate change. Unfortunately, the budgets and staffing capacities of traditional "top-down" management structures for these regions rarely keep pace with the growing magnitude of these challenges or the expectations by

the public to cope with them effectively. What can be done to fill the gaps between the needs and capacities of land managers to ensure continued protection of the precious natural and cultural resources of mountain regions?

Rethinking How to Protect Mountains and their Cultures

Using a key element from Teddy Roosevelt's success, some mountain region managers are now more effectively protecting these areas by shifting their management paradigm from the traditional rigid systems toward more collaborative, adaptive, and inclusive ones (Table 1). In essence, they are now protecting these special places with amenity-led migrants and other stakeholders, instead of focusing solely on trying to protect these places from them.

Continued advances in modern communications and research technologies plus changing trends in demographics, leisure and lifestyle choices, and generational perspectives make it possible to rethink the traditional management paradigm. Those regional managers, amenity-led migrants, and other stakeholder groups willing to embrace change can design and implement low cost partnership programs to fill capacity gaps by working together collaboratively. Done properly, this can reduce or prevent negative impacts on natural and cultural resources in mountain areas, freeing up precious funding and staff time for regional managers.

Table 1: Land managers can now use modern collaborative technologies and systems to work more quickly and effectively with mountain migrants and other regional stakeholders to respond to impacts of amenity-led migration.

<i>Mountain Region Land Management</i>	<i>Management organization structures</i>	<i>Responses to impacts and risks</i>	<i>Perspective</i>	<i>Time-frame for results</i>	<i>Learning rate by participants</i>
Traditional Paradigm	Rather rigid, bureaucratic, policy-based systems	Generally reactive and formalized, standardized solutions preferred	Exclusive, defined, "top down" direction	Slow, constrained pace for results	Incremental – learning and feedback is documented, then shared "top down"
Collaboration Paradigm	Adaptive, collaborative relationships	Pro-active, <i>ad hoc</i> , less formalized, creative solutions tested	Very inclusive, creative, "bottom up" direction	Fast, adaptively controlled results	Virtuous cycle – learning and feedback shared, then multiplied throughout the networks

Create Paths to a New Identity for Stakeholders- Help Users Become Stewards

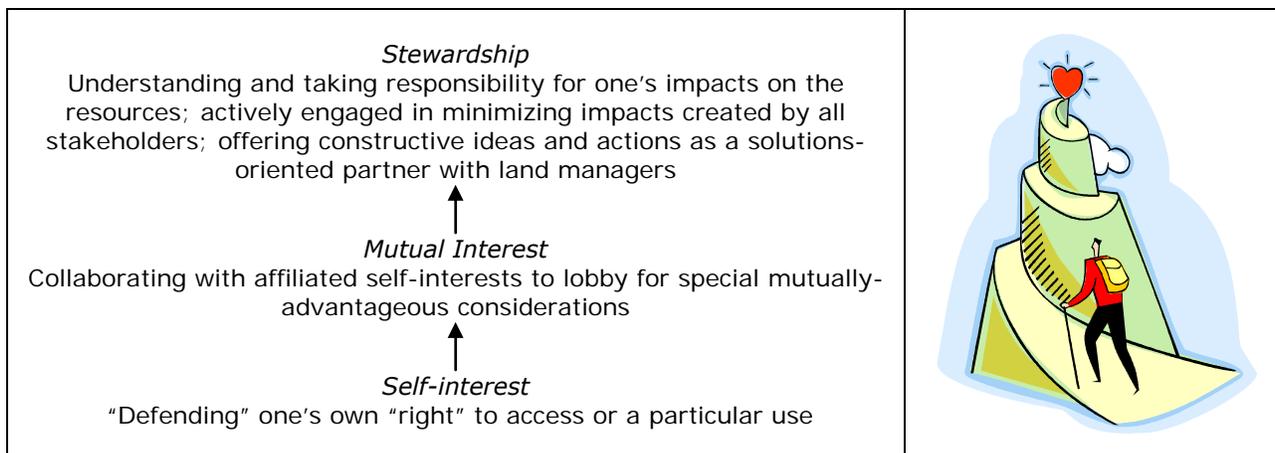
A land management paradigm shift, however, can only succeed if the other stakeholder groups are also willing to shift their paradigms in a similar way, from

narrowly-focused “mountain user groups” to actively engaged “mountain resource co-managers”. This shift becomes possible when mountain region managers are willing to create multiple ways for other stakeholder groups to get “hands on” experience with managing impacts on mountain resources (their own impacts and those created by others). The multiple ways for stakeholder groups to get involved in protecting places that they passionately care about form the “paths” that help them to forge a new identity in relation to these places.

Like climbers ascending a mountain, stakeholder groups can follow their chosen paths upward from their starting point as “users”, and over time arrive at the management level as more enlightened and empowered “stewards”. By investing their time and energy in volunteer programs along the “paths”, they move from being “outsiders” disconnected from the management process to becoming “insiders” connected to the management process, empowered to help protect and promote these beloved places (Figure 1). Knowing and becoming known by managers and other stakeholder groups, they can also gain a more credible voice in the management process.

As a result, they take on the valuable new identity of co-managers of these special places, shifting their mountain use perspectives from self-interest “users” (such as hikers, climbers, fishermen, etc. and their clubs) or mutual interest “user groups” (such as associations of hiking, climbing, or fishing clubs) to broadly inclusive and resource-focused “stewards” (such as park “Friends of...” groups, Leave No Trace groups, Volunteers-in-Parks, etc.).

Fig 1: Land managers can create a clear and effective path for mountain migrants and other stakeholder groups to ascend from self-interest to stewardship of mountain regions using programs that stakeholders find meaningful



Stewardship paths can range from very simple to highly complex volunteer projects keyed to participants’ ages, interests, and abilities. Examples include rubbish removal, resource monitoring programs, removal of invasive species, interpretive and guide programs, user impact mitigation and resource restoration programs,

involvement in planning and design sessions, emergency and search and rescue programs, youth and elder programs, and historic recreations and interpretive programs, and cultural preservation programs (Table 2).

Use Effective Communications and Collaborations to Shape Values and Create Meaning

Be aware, however, that the key to stewardship success lies not simply in the number of programs offered, but how meaningful they are to each individual stakeholder and stakeholder group. Success ultimately hinges on how effectively mountain region managers can communicate and collaborate with stakeholders to design and create paths that are meaningful to the stakeholders. Otherwise, the tasks that make up the “path” become viewed as simply unremunerated work with little or nothing of value received by the participant. Everyone wants to feel important and to feel that their actions matter, especially when they are traveling to places they feel are special to them and are donating their precious free time.

Table 2: Land managers can use a wide variety of projects, keyed to ages, abilities, and interests, to engage mountain migrants and other stakeholders in the stewardship process

<i>Types of Steward Groups</i>	<i>Young children, Schools, Scouts</i>	<i>Teens, Young Adults</i>	<i>Adults, Families</i>	<i>Active, athletic adults</i>	<i>Seniors, retired workers</i>
<i>Types of Stewardship Project "Paths"</i>	Rubbish pick up, cutting back saplings from meadows, becoming a Junior Ranger	Invasive plant species removal, visitor surveys or interviews, interpretive programs	Rubbish pick up, species inventories, removing invasive plant species, resource sampling and monitoring, cultural preservation programs	Trail restoration, species inventories in back country, fire pit ash removal, removing unauthorized roads or trails from motorized use or mountain biking, search and rescue operations support	Resource sampling and monitoring, species inventories, interpretive programs, historic recreations

Successful managers around the world know that an essential part of effective leadership is the capacity to help members of an organization or team to understand the meaning and value of their work. Like Teddy Roosevelt, they know that effective communication can shape values for people, create meaning in their actions, and motivate them toward a goal. Although it can take a considerable amount of time to talk with stakeholder groups directly to really understand their motivations, values, and innate connections to mountain regions, it repays mountain region managers many times over when pro-active, self-identifying, lifetime mountain stewards are created. This is especially so when stewards are successful in transmitting mountain protection values on to family, friends, and succeeding generations.

Best Practices in Turning Mountain Migrants into Mountain Stewards

Knowing how to achieve this can help land managers, governments and communities create opportunities for amenity-led migrants and other stakeholders to develop a cohesive sense of shared identity as stewards of the places they love. Once created, these empowered stewards can increase the capacities of land managers to protect the natural and cultural resources of mountain regions. Equally important, working together can be one of the most effective ways to bridge the many economic, geographic, cultural and societal divides that often persist among diverse mountain stakeholder groups. Achieving this is crucial to the effectiveness of long-term protection of mountain regions.

Best practices and success stories exemplifying ways to turn amenity-led mountain migrants and other mountain stakeholders into pro-active mountain stewards are now emerging around the world as regional managers adopt this collaborative, stewardship-focused management paradigm for mountain protection.

I have highlighted a few of these below, categorized by the size and scope of the collaborative networks involved. Each example provides ideas for those who might want to create the same type of stewardship success in their own mountain region.

Creating Collaborative Networks of Individuals

The Tremendous Potential of Citizen Scientists

Over 100 million people live just a two-day drive from Great Smoky National Park in the Appalachian Mountains of the eastern US, and over 9 million visit the park each year. Park and regional managers are constantly seeking ways to minimize impacts on natural and cultural resources from increasing levels of visitation and amenity-led migration to this mountain region from major metro areas such as New York City, Boston and Washington, DC.

Computer-based resource stewardship systems are now being used in this region and others around the world to allow mountain migrants and other volunteers to collect and submit environmental samples, input data, and help to monitor ecosystem health. Individuals can sign up as “citizen scientists” with land managers, universities and partner groups, then receive free training in these systems and participate in the sampling as they spontaneously and periodically visit mountain areas.

Creating large corps of citizen scientists can allow land managers to gather huge amounts of data quickly and very affordably for valuable scientific projects and studies at a variety of scales: local, regional, and even continental. This is can be particularly useful when developing regional responses to new impacts from changes in climate, population and migration levels, fire and other risks, and resource use patterns.

Citizen science projects have shown great success in monitoring environmental indicators in mountain areas: quality of air and fresh water, noise and light pollution, changes in land use such as encroachment and degraded viewsheds, inventories and spread of diseases in plant and animal species, tracking insect and bird migrations, and noting timing changes in seasonal flower blooming periods at various altitudes.

The citizen scientist “path” is extremely useful for creating mountain stewards, as it does not require participants to be affiliated with any particular group or organization, and their work can be donated at their convenience as part of an activity they might normally do, such as hiking or wildlife watching. Broader societal benefits also result from offering this innovative type of stewardship “path”, as it can engage large and diverse populations of private citizens in the environmental monitoring process, build public awareness of environmental problems and problem solving methods, and empower the public to help protect precious natural resources.

Once established, this powerful stewardship tool can also be scaled up dramatically to broaden public awareness of the increasingly crucial need for creating linkages between protected areas. “Connectivity conservation” can be promoted on a regional or continental scale using citizen-scientist collaborations among regional, national, and international stakeholder groups, which is described later.

Creating Collaborative Networks of Stakeholder Groups and Organizations

Leveraging the Viral and Tribal Aspects of Stakeholder Groups

Many mountain migrants and other individuals are drawn to mountain regions as part of self-identifying groups and their representative organizations such as recreationists, off-highway vehicle owners, and boating enthusiasts. Members of these organizations tend to share a similar “culture”, “language”, “dress code”, beliefs, and values, imbuing them with a cohesive and distinct “tribal” type of identity. Information is often spread rapidly and thoroughly within these groups and organizations through “viral communications”, diffusing information (whether facts or rumors) among individuals via informal networks and self replication.

The viral and tribal aspects of such organizations can often be leveraged to create outstanding mountain stewardship successes by nurturing collaborative networks of them. For example, a collaborative network of rock climbing organizations has coalesced in the past few years to focus on stewardship of Yosemite National Park, one of the most popular climbing destinations in the world.

Led by the small but fervent local Yosemite Climbing Association, an annual event there called the “Yosemite Facelift” has demonstrated meteoric success in creating mountain stewards from mountain migrants and other climbing-related stakeholder

groups. Cobbled together almost single-handedly by YCA President and climbing guide Ken Yager, the Facelift event has drawn in strong support from the park concession service, the Yosemite Fund and the other park "Friends" groups, regional and national climbing organizations, and many other Yosemite region stakeholder groups, schools and mountain migrants.

In only four years, the Yosemite Facelift event has created such dramatic stewardship success that it and its founder have garnered numerous awards, national acclaim, and prime time broadcast media coverage. The event has expanded rapidly thanks to "viral" communications and testimonials spread worldwide via the Internet by the enthusiastic climbers and other members of this new Yosemite stewardship "tribe". From the original three-day weekend event focused on cleaning up around the Valley climbing cliffs, it has grown to five days in order to accommodate both the rapidly growing number of participants and its resulting ability to clean up much more of the park (Table 3).

Its formula for success is quite simple: volunteers receive free entry into Yosemite National Park, free group camping in Yosemite Valley, some free food, and inspiring nightly outdoor presentations each evening in return for their volunteer labor to remove rubbish and other debris from areas throughout the park impacted by visitation of all kinds (not just climbing). The Park Service suggests areas of the park that need cleaning, and the YCA staffs the daily logistics "base camp" tents set up at the Valley Visitors Center to provide volunteers with directions, litter pickup implements and personal safety gear. Volunteers can choose the duration of their work, from hours to days, so as with the "citizen scientists", this stewardship opportunity satisfies a wide spectrum of volunteers.

Table 3: Collaborations with the National Park Service (NPS), climbing organizations, and other Yosemite region stakeholders have enabled the non-profit Yosemite Climbing Association (YCA) to leverage the very strong viral and tribal aspects of rock climbers and mountaineers to create amazingly rapid stewardship success in Yosemite National Park.

<i>Year</i>	<i>Number of volunteers</i>	<i>Yearly % Δ</i>	<i>Number of man hours donated</i>	<i>Pounds of rubbish, debris collected</i>	<i>Yearly % Δ</i>	<i>NPS valuation of work by volunteers in US Dollars</i>	<i>Number of days of the event</i>
2007	2,945	255%	18,335	43,220	173%	\$344,148	5
2006	1,157	193%	9,256	25,000	327%	\$166,970	5
2005	600	400%	4,696	7,655	255%	\$77,672	4
2004	150	Year 1	2,700*	3,000*	Year 1	\$44,658	3
<i>Totals</i>	<i>4,852</i>	<i>1,963% Yr. 1-4 Δ</i>	<i>34,287</i>	<i>78,875</i>	<i>1,441% Yr. 1-4 Δ</i>	<i>\$633,448</i>	<i>17</i>

*Estimated by YCA

Participants include climbers and mountaineers from across the US and Canada (plus a growing number from other countries as well), other recreationists, families

and children of all ages, teens and young adults, and a huge contingent of seniors, most of whom have enjoyed visiting Yosemite for many decades.

Although the tribal camaraderie enjoyed by those who gather each year for the Facelift is an important reason for its popularity, there are much more powerful stewardship-related ones drawing the volunteer hordes to this special place. A legendary rock climber from New York State, John Stannard, pointed out the unique reward that this type of short, high-intensity stewardship event can offer to those willing to help protect special places: "How often does one get to do something so desperately needed and also get to see the results right away. Almost never?"

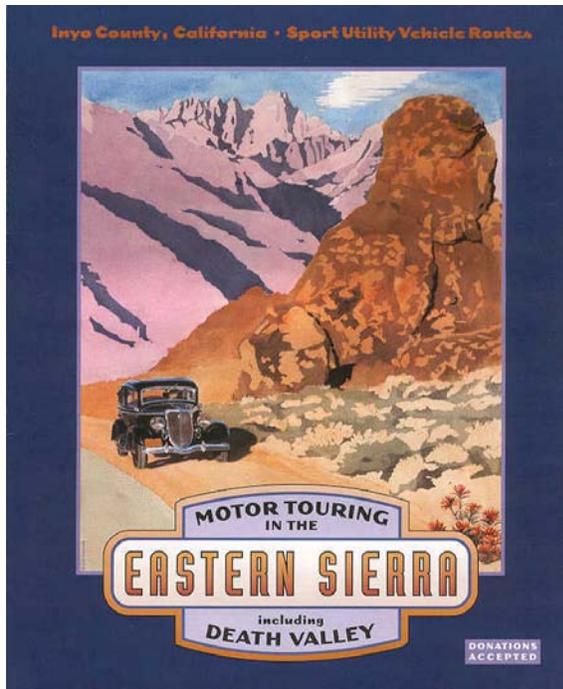
Over on the Eastern side of the Sierra Nevada of California, the Bishop Field office of the US Department of the Interior's Bureau of Land Management (BLM) has become a nationally-recognized leader in collaborative management by effectively leveraging the viral and tribal aspects of recreationists and other stakeholder groups to protect their mountain region. For years they have been creating innovative stewardship paths for their diverse range of stakeholders, which include many amenity-led migrants from the major metro areas of California, Nevada, and Arizona. They have enjoyed particularly notable success with off-highway vehicle (OHV) owners and their organizations.

One way they have succeeded is by helping regional stakeholders produce and widely distribute engaging and informative publications and educational programs that help off-highway vehicle owners "do the right things" when visiting the region (Figure 2). Their "Motor Touring" booklet highlights the fascinating historic uses and aspects of the region, suggesting motorists discover these by safely exploring existing, legal off-highway roads that are described in the publication.

Cleverly using an early 20th century motif saves money by allowing the publication to be used for decades without looking "dated". Stakeholders have also developed an easy to remember motto for visitors to this region known for its dramatic yet fragile semi-arid sagebrush landscape and its species: "Don't Crush the Brush" (Figure 2). This is promoted heavily at regional events, museums, film festivals, and in the many volunteer stewardship programs the BLM runs with OHV groups to erase tracks and other damage to the landscape created by unauthorized off-road driving.

The successes spawned by the Bishop BLM's collaborative management paradigm continue to prove that as diverse mountain stakeholder groups understand their common interests, such as the need for spontaneous access and a strong desire to enjoy unspoiled mountain environments, they are more willing to collaborate to minimize their impacts. Providing them with effective and meaningful stewardship paths helps them to dramatically reduce their impacts on the spectacular mountain and sand dune areas they love, and inspires them to advocate stewardship behavior in others.

Fig 2: In the Eastern Sierra Nevada region of California, land managers and stakeholders collaborate effectively to provide ways to prevent or minimize negative impacts from visitation through free information publications, educational programs, and wide variety of stewardship opportunities.



Creating Collaborative Networks of Regional and Continental Stakeholder Groups

Thinking Big with Mega-Transects and Connectivity Conservation

In the face of climate change and loss of biodiversity, land managers are realizing they need fast, affordable, and easily scalable ways to assess the natural and cultural resources they have in order to understand changes and to know what they might lose or have lost already. One way is to conduct periodic “transects” across landscapes, cataloging species and conditions along this “line”. One of the most impressive ways that networks of citizen-scientists are currently demonstrating their value is in the Appalachian Trail MEGA-Transect to assess the current health of ecosystems along the over 2,000 mile length of the Appalachian region.

Collaborative networks of regional and continental stakeholder groups are also helping connectivity conservation efforts to re-connect fragmented landscapes and to protect biodiversity and natural ecosystems. Examples include the Sierra Nevada Conservancy in California, the Yellowstone to Yukon Conservation Initiative (Y2Y) linking landscapes in the Rocky Mountains of the US and Canada, and the Alps to Atherton Initiative (A2A) that works to link landscapes along most of the eastern coast of Australia.

The New Paradigm – Connect All Stakeholders Through Collaborations

Clearly, to protect mountain regions of the world from negative impacts of amenity-led migration and other phenomena such as global warming, population shifts, and climate change, another tectonic shift in the concept of land management is now needed, one that effectively leverages the positive efforts of all mountain stakeholders. To ensure long-term success, it is extremely important to remember three key sources of mountain stewards which are sometimes overlooked.

Remember to create meaningful ways for children to help protect mountain regions, especially with their parents, peers and friends. Likewise with people from diverse ethnic groups, who may or may not have mountain-related backgrounds or traditions. Constantly seed the future of mountain stewardship with new generations of motivated and knowledgeable mountain lovers. Help them realize that they are an especially important part of the future of mountain regions.

Remember also that amenity-led migrants and many mountain stakeholders may live long distances from mountain areas in major metro and peri-urban areas. Residents there might rely on the water, natural resources, and recreational opportunities provided by distant mountain areas. This presents both a challenge and an opportunity. The challenge is to find ways to engage these long-distance migrants and stakeholders in meaningful and effective stewardship activities to protect mountain areas they may visit rarely, or perhaps never. The opportunity is that most voters and politically and economically influential people of a region live in these areas. So cultivating mountain stewardship there can greatly increase support for protection of mountain regions.

Those mountain region managers and agencies that can shift their management paradigm and perspectives to coalesce and nurture networks of collaborations among the entire diverse range of stakeholder groups will be better able to protect the natural and cultural resources of mountains areas, now and into the future. Mountain regions of the world need all of us to find our own special ways to preserve and protect them for future generations. Everyone who visits or resides in the mountains can be a steward. What can YOU do to create more mountain stewards?

Problem: How can we more effectively protect mountain regions from increasing impacts from amenity-led migration?

Solution for mountain region leaders: Shift the management paradigm to protecting mountain regions WITH stakeholders, not FROM them. Focus on creating generations of mountain stewards by providing meaningful stewardship projects and opportunities to mountain migrants and other stakeholder groups.

Engage all mountain stakeholders—old, new, youth, amenity-led migrants, user groups, cities, governments, land managers, etc.—in a constant discovery process of what their impacts, both negative and positive, are on mountain regions. Foster collaborative learning experiences in adaptive management of their amenity migration impacts. Keep the focus on the resources, not stakeholder positions.

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Author

Linda McMillan, MBA
IUCN-WCPA International Union for the Conservation of Nature-World Commission
on Protected Areas
721 Appleberry Drive
San Rafael, California 94903
Linda@mountains-wcpa.org
(415) 309-7961