Chapter 8: Using GTR 220 to Build Stakeholder Collaboration

C. Thomas[1]

Introduction

Since 2008, Sierra Forest Legacy, a nonprofit conservation organization, has increased its participation in the design of projects on national forest lands in the Sierra Nevada. Our interest has been to engage scientists, managers, and other stakeholders in the design of projects that integrate the best available scientific information. Our second interest has been to explore the possibilities for "up-front" collaboration between these parties to bridge disagreements over the scope of natural resource impacts. We have observed, and, in some cases, actively participated in, the application of principles outlined in U.S. Forest Service General Technical Report GTR 220, "An Ecosystem Management Strategy for Sierran Mixed-Conifer Forests," (North et al. 2009) in approximately 12 project-level planning efforts since its 2009 publication. These projects included various levels of collaborative efforts between land managers, scientists, and stakeholders grounded in GTR 220 principles. Previously, questions about "whose science," where to take risks, and with what resources have sometimes been settled in the courtroom. The value of GTR 220 for all groups is its provision of a conceptual model to use as a starting point for fresh dialog after a decade of conflict.

Summary of Findings

1. **GTR 220 provides a conceptual model to use as a starting point for new dialog about forest management.** Exploring the principles of GTR 220 in a collaborative setting provides the basis for joint fact finding and mutual learning.
2. **Future applications of GTR 220 should strive to more fully address wildlife ecology at the microsite, stand, home range and landscape scales.**
3. **Successful GTR 220 application may require capacity changes** such as organized information exchange, standardized short- and long-term monitoring, and facilitating stakeholder group participation.

Improved Communication

Because GTR 220 is not prescriptive, practitioners have shared ideas, mostly in field settings, about how to identify, mark, and describe desired microsite and project-level heterogeneity. This information exchange has been crucial as the flow of new research on fisher (*Martes pennanti*) rest sites, fire ecology, topographical influences, climate change effects, carbon storage, and pest dynamics has significantly accelerated. Through collaborative factfinding, diverse interests can explore and expand a communal knowledge base and support adaptive management and incorporation of new information while conducting ongoing restoration efforts.

[1] Executive Director, Sierra Forest Legacy, P.O. Box 244, Garden Valley, CA 95633.

There is a marked improvement in project planning that is building stronger relationships, more trust, and improved projects.

The social implications of using GTR 220 are also significant. There is now more emphasis on interdisciplinary team integration, stakeholder involvement, and collaboration in project design. In project planning, where GTR 220 is a centerpiece, it is not uncommon to find conservation groups, scientists, mill owners, Forest Service staff, and others discussing protection of wildlife trees, clumping strategies and variable density, snag retention, oak structural decadence, the importance of shrub species, and size of openings for pine regeneration. There is a marked improvement in project planning that is building stronger relationships, more trust, and improved projects. While the GTR 220 approach is still a work in progress with no pat formulas for success and little to judge yet in terms of monitored outcomes, it suggests intensive, science-based collaboration has a future in project and landscape planning. There is a growing body of scientific knowledge, significant experience, and a deep interest in restoring the Sierra mixed-conifer forests that is driving a stronger concept of sustainability.

Sustainability

Questions regarding the sustainability of natural resources have been at the core of these conflicts in a period where stakeholders and managers debated the relative merits of proposed treatments affecting fire behavior, forest health, and wildlife in the Sierra Nevada. Sustainability has often been conceived as a "three-legged stool" (fig. 8-1) suggesting that social and economic issues exist outside of an ecological foundation (e.g., Dawe and Ryan 2003). Weak sustainability can result in local economy boom-and-bust cycles, weakened social structures, and damaged landscapes. In contrast, strong sustainability (Hart 1998) defines a much closer connection between our socioeconomic activities and the environment—a vision where

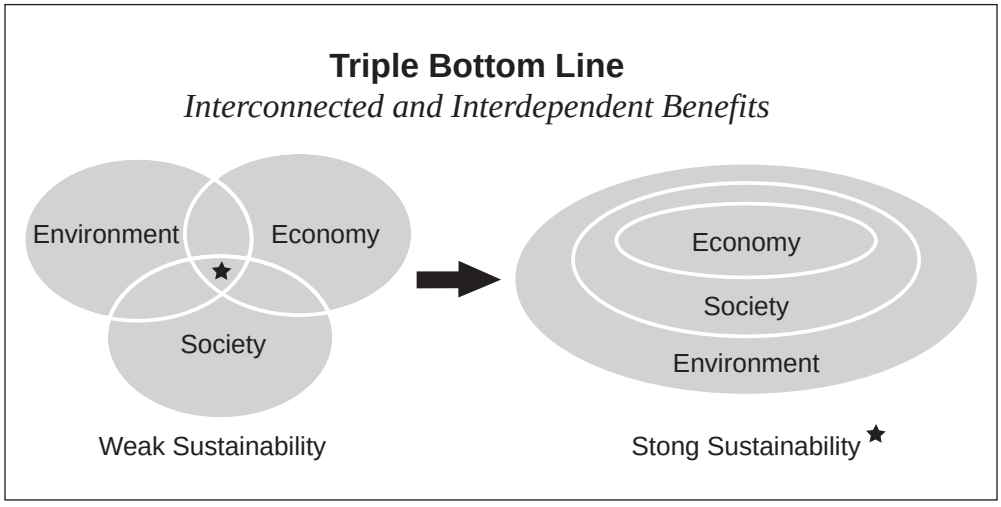

Figure 8-1—Schematics of weak and strong sustainability concepts. (Adapted from Hart 1998.)

economic activities, communities and society are based within and supported by the environment. Callicott and Mumford (1998) further refined the connection between human use of resources and the ecosystem by defining ecological sustainability "as meeting human needs without compromising the health of ecosystems." General Technical Report 220 provides a foundation for discussing the ecological needs of a healthy mixed-conifer ecosystem and our sustainable interaction with this environment.

Perceived Problems

One objection to the use of GTR 220 is the additional time and costs associated with designing and marking ecologically appropriate and more complicated prescriptions. When taking a holistic approach, the success rate of cooperatively designed projects in achieving agreed-upon goals should be tracked over time so this monitoring can support improved approaches. While these projects do develop slowly, they may still come out ahead when compared to projects that are appealed or litigated.

Challenges

We believe wildlife ecology, in a broad sense, should be expanded in future applications of GTR 220. Concerns about wildlife need to be extended beyond Pacific fisher to include principles for sustaining the whole wildlife community in these landscapes through ongoing restoration efforts. Designing projects that sustain key attributes associated with occupancy was identified as a future research need in the 2009 publication (North et al., p. 32) and represents a fundamental aspect of wildlife conservation. Biodiversity protection and ecological resilience are at the heart of Sierra Nevada restoration. This linkage is supported in a recent synthesis on forests and climate change by the United Nations' Convention on Biodiversity and co-authored by the U.S. Forest Service: "The available scientific evidence strongly supports the conclusion that the capacity of forests to resist change, or to recover from disturbance, is dependent on biodiversity at multiple scales" (Thompson et al. 2009). Key concepts that foster biodiversity, including promoting landscape connectivity, heterogeneity, and reducing human impacts, need to be addressed in landscape- and project-level planning.

Future Directions

For successful collaboration to continue in the Sierra Nevada, we believe three principle capacity issues need to be addressed: organized information exchange, standardized short- and long-term monitoring, and stakeholder group capacity to

At present, there are multiple projects based on GTR 220 concepts, yet no centralized forum for exchanging information and learning from other projects.

meaningfully participate. At present, there are multiple projects based on GTR 220 concepts, yet no centralized forum for exchanging information and learning from other projects. The region might consider establishing a Web site, newsletter, or workshops to support expanded use of GTR 220 in planning and design efforts across the Sierra Nevada. Another approach might be a Web-based "living" seminar to support information exchange for practitioners.

A second concern is the need for monitoring to understand the impacts of these new management practices on species and ecosystems. Monitoring of forest stands is necessary to understand how the treatments alter stand conditions and how wildlife responds. Monitoring protocols that build on existing inventory and assessment approaches (i.e., Manley et al. 2006) may be the most efficient means to develop monitoring plans. Effective monitoring plans need to integrate the results from multiple scales and should feed into a decision-support framework for implementing adaptive management in a transparent and collaborative manner.

The third concern can be best addressed by Forest Service support for ongoing facilitation services, collaboration with the University of California, and other institutions that can offer scientific expertise and exploring foundation interest in capacity building within stakeholder groups.

For many of the GTR 220 principles to be fully implemented, fire will have to become more widely used as an ecological tool. We encourage establishing regional direction that promotes returning fire as a key component of forest restoration. This would include appropriate staffing at the forest and district levels, public education, collaboration with air quality regulators, and strong commitments to the use of managed fire.

References

Callicott, J.B.; Mumford, K. 1997. Ecological sustainability as a conservation concept. Conservation Biology. 11: 32–40.

Dawe, N.K.; Ryan, K.L. 2003. The faulty three-legged-stool model of sustainable development. Conservation Biology. 17: 1458–1460.

Hart, M. 1998. Triple bottom line sustainability graphic. From Sustainable Community Indicators Trainer's Workshop, Courtesy of Maureen Hart, Hart Environmental Data, and U.S. Environmental Protection Agency Office of Sustainable Ecosystems and Communities. http://www.sustainablemeasures.com. (September 15, 2011).

Manley, P.N.; Van Horne, B.; Roth, J.K.; Zielinski, W.J.; McKenzie, M.M.; Weller, T.J.; Weckerly, F.W.; Vojta, C. 2006. Multiple species inventory and monitoring technical guide. Gen. Tech. Rep. WO-73. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. 204 p.

North, M.; Stine, P.; O'Hara, K.; Zielinski, W.; Stephens, S. 2009. An ecosystem management strategy for Sierran mixed-conifer forests. 2nd printing, with addendum. Gen. Tech. Rep. PSW-GTR-220. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 49 p.

Thompson, I.; Mackey, B.; McNulty, S.; Mosseler, A. 2009. Forest resilience, biodiversity, and climate change. A synthesis of the biodiversity/resilience/stability relationship in forest ecosystems. Secretariat of the Convention on Biological Diversity, Montreal. Technical Series no. 43. 67 p.