

Title: Bartering for Conservation: Are Grassbanks® an Effective Tool for Achieving Conservation, Promoting Stewardship, and Building Trust?

A McIntire-Stennis Cooperative Forestry Research Program Proposal Submitted By:

CO - PI – Dr. Jack Ward Thomas, Boone and Crockett Wildlife Conservation Program, University of Montana, Missoula MT 59812, 406.243.5566, jwt@forestry.umt.edu

CO - PI – Dr. Hayley Hessel, School of Forestry, University of Montana, Missoula MT 59812-0576, 406.243.4285, hayley@forestry.umt.edu

CO – PI – Dr. J.D. Wulforst, College of Agricultural & Life Sciences, University of Idaho, Moscow, Idaho, 83844-2334, 208.885.7645, jd@uidaho.edu

CO- PI – Dr. Joni Ward, Director of Science, The Nature Conservancy, Wyoming Chapter, Lander, WY, 82520, 307.332.2973, jward@tnc.org

Research Assistant – Stephanie Gripne, M.S., Boone and Crockett Wildlife Conservation Program, University of Montana, Missoula, MT 59812, 406.243.4128, sgripne@selway.umt.edu

Justification:

Of the many threats to western U.S. ecosystems and surrounding human communities, two of the most pervasive are altered fire regimes of fire dependent ecosystems (Arno and Brown 1991; Mutch 1994; Czech et al. 2000) and the rapid subdivision of rural lands (Czech et al. 2000; Maestas et al. 2001; Theobald and Hobbs 2002). Because of their location, large ranches often play an important role in minimizing both threats. In addition to being located on highly productive land, many western ranches are adjacent to public lands such as national forests and rangelands that typically include federal grazing allotments. Their proximity and contribution to large tracts of connected landscapes make them important for maintaining ecosystem function (e.g., historic fire regime) and biodiversity (e.g., intact habitat) (Gripne and Thomas 2002; Thomas and Gripne 2002). However, many ranchers interested in restoration activities avoid participation because of the economic costs they incur associated with herd displacement from the rangeland being restored. In some cases, this same obstacle exists for public land managers who want to ecologically restore (e.g., fuels reduction; prescribed burning) federal grazing allotments that ranchers may depend on for their livelihood (Bell 2001; Edwards 2002). Thus, both public land managers and private ranchers are left with this dilemma: if ecological

restoration activities place the economic viability of private ranches at risk, an unforeseen result of restoration activities, may be an increased rate of subdivision and habitat fragmentation related to sale of large ranches (Maestas et al. 2001). Grassbanks® have been proposed as a mechanism to address this problem and promote restoration activities on both private and public lands

Grassbanks® are an innovative new tool that exchanges forage for conservation (Mahler 2001). This definition of grassbanking® is necessarily broad, because the types of conservation benefits that can be traded for forage are many. These benefits may include conservation easements, rest, prescribed burns, invasive species management, or combinations of the above. Because of the perceived potential of grassbanks® to overcome numerous ecological problems in the western U.S., millions of dollars have been invested by several organizations and individuals thus far to develop five grassbanks® (*Valle Grande Grassbank*® – New Mexico; *Malpai Grassbank*® – Arizona; *Vina Plains Grassbank*® – California; *Rocky Mountain Grassbank*® – Montana; *Heart Mountain Grassbank*® – Wyoming). Over 17 additional potential grassbank® efforts have been documented as of 1991 (Harper 1991). However, despite this overwhelming support for this new conservation strategy, the assertion that grassbanks® result in conservation benefits, remains an untested assumption. Because the idea and use of grassbanks® is relatively new, little if any research currently exists that evaluates the economic, ecological, and social issues associated with grassbanks®. An examination of the effectiveness of grassbanks® is urgently needed before significant levels of additional resources are invested into this conservation strategy by federal agencies, nonprofits, foundations, and individuals.

Our research will develop a framework that will enable federal land managers, nongovernmental organizations, ranchers, and private citizens to evaluate and compare tradeoffs among different grassbank® scenarios. Because this work will provide a much needed evaluation of

grassbanks®, it will positively impact the allocation of scarce resources over the long term, benefiting both private ranchers and the general public.

Not only does this project provide an opportunity to conduct an in-depth analysis of the utility of grassbanks® as a conservation strategy, it provides a medium to explore the effectiveness of community-based collaborations that vary institutionally, regionally, and temporally. While there has been enormous growth in collaborative efforts as alternatives and supplements to traditional planning efforts during the past decade in the west (Dagget 1995, Griffen 1999, Cestero 1999; Wondolleck and Yaffee 2000), there has been little scientific research conducted to evaluate the effectiveness of these groups in achieving their goals (Kenney 1999). A few studies have investigated restoration and citizen involvement (Donald 1997, Woodall et al. 2000), but a comparative study, which evaluates the effectiveness of one collaborative strategy (i.e., grassbanks®) employed at multiple sites throughout a region, does not currently exist. Hence, our work will not only provide practical contributions to various groups interested in developing grassbanks®, it will also promote a stronger theoretical framework for understanding the effectiveness of community-based collaboratives in achieving restoration objectives.

We propose an interdisciplinary research project that would evaluate the use of grassbanks® as a tool for achieving conservation goals across multiple states in the western U.S. Our research objectives include:

- Document existing grassbank® efforts,
- Perform a financial analysis of grassbanks®,
- Conduct a stakeholder assessment of the effectiveness of grassbanks®, and
- Synthesize the similarities, differences, and relative degrees of success of one collaborative strategy employed at multiple sites.

This proposal is designed principally to support the development of research interests of a Ph.D. student studying forestry-related socioeconomic problems. Additionally, this proposed research meets several of the of the research objectives outlined in McIntire-Stennis Program (e.g. ecosystem management, management of forest and related watershed lands to improve conditions, management of forests and related rangeland for production of forage for domestic livestock and game, improvement of food and habitat for wildlife, and protection of forestland and resources against destructive agents).

Previous Work and Present Outlook:

A decade ago grassbank® was a term that was virtually unknown. In recent years the idea has gained momentum and received attention through dozens of popular articles and in gray literature (Page 1997; White 1999; Goldman 1999; Jensen 2001; Christensen 2002; Kappel 2002).

However, at this time no peer-reviewed literature exists on grassbanks® (Gripne, *in prep*).

Because the concept is relatively new, we will briefly describe the development of the grassbank® idea and its application throughout the west.

Grassbanks® were launched into the national spotlight when Drum Hadley of the Animas Foundation and Malpai Borderlands Group, which is located along the border of Arizona and New Mexico, coined and registered the term in the early 1990s. Both the Malpai Borderlands Group and the idea of grassbanking® emerged out of an effort by local ranchers to proactively seek common ground among diverse stakeholders including ranchers, environmentalists, managers, and agency personnel (Harper 2001; Edwards 2002). They developed the grassbank® concept out of the idea that if a rancher needed alternative forage because of drought or to engage in restoration activities, the rancher could graze their cattle at the Gray Ranch. In exchange for the forage the rancher would agree to put a conservation easement on their property, held by the

Malpai Borderlands Group, equal to the value of the amount of forage used on Gray Ranch (Harper 2001).

The Gray Ranch Grassbank® has since served as a model for other communities throughout the west looking for conservation strategies that appeal to a diverse stakeholders. In 1998, the Valle Grande Grassbank® in New Mexico was formed. The purpose of the Valle Grande Grassbank, which includes a base property and U.S. Forest Service grazing allotments, has been to exchange forage for restoration commitments (e.g. riparian restoration, upland fire restoration, removal of small diameter timber, etc.) by the U.S. Forest Service on federal grazing allotments (deBuys 1999). Another recent grassbank® project is the Vina Plains Grassbank. In response to the local communities' interest in the use of prescribed burning to control invasive weeds, the California Chapter of The Nature Conservancy converted their 4,600-acre Vina Plains Preserve into a grassbank® to enable local ranchers to undertake conservation practices on their ranches in exchange for a reduced rent at the Preserve (McNutt 2001). The Rocky Mountain Front Grassbank® in Montana has developed a private grassbank® model that included a 320-acre pilot project. While the committee was enthusiastic about the Gray Ranch Grassbank® model, obtaining a three hundred thousand acre private ranch for the purpose of a grassbank® was not feasible for them. Hence, they are working to develop a series of small private ranches that would serve as a collective grassbank® for local area ranches (Bay 2001). The Heart Mountain Grassbank, in Cody, Wyoming is owned by The Nature Conservancy and is a low-elevation irrigated pasture. Ranchers are using the grassbank® because their federal grazing allotments are unavailable to them due to local U.S. Forest Service forest restoration activities (e.g., rest, prescribed burning) (Bell 2001). Proposals for additional grassbanks® are emerging in Idaho, California, Arizona, Wyoming, Colorado, and throughout much of the western U.S.

Even though the formation and use of grassbanks® in the western U.S. has required considerable effort, no research exists that evaluates grassbanks® as a viable conservation strategy. The two principle sources of information about grassbanks® are the conference proceedings “Grassbanks in the West: Challenges and Opportunities” a symposium, held in New Mexico in 2001, and a thesis currently being written by Christy Edwards, a M.S. student at University of Colorado, entitled “Grassbanks: A Study of Policy Diffusion and Adaptation in the American West”. The grassbank® conference was sponsored by the Quivira Coalition, the Conservation Fund, the Malpai Borderlands Group, the Northern New Mexico Stockman’s Association, the U.S. Forest Service, and New Mexico State University’s Cooperative Extension, and included a variety of panelists addressing various issues associated with grassbanks®. The conference served as a medium to provide clarification, reassessment, and input about grassbanks® to the public.

While the conference served as the first public medium to clarify and assess grassbank® efforts, Edwards’ thesis provides the first formal attempt at evaluating grassbanks®. In her thesis, Edwards (2002) cautioned against the widespread endorsement of an untested conservation strategy such as grassbanks®. She proposed that the premature adoption of an unevaluated innovation, like grassbanks®, by other groups around the west could lead to long-term problems for them, discouraging further use of grassbanks®. Edwards (2002) also noted that grassbanks® will not likely succeed without support from public land management agencies and other pertinent institutions with the authority to implement policy changes that would make the application of grassbanks® easier.

In addition to the two above mentioned sources of grassbank® information, we have completed pilot work in the form of participant observation of Heart Mountain Grassbank®. Several questions about grassbanks® have emerged from the participants. One of the most pressing questions for those involved with the Heart Mountain Grassbank® is how to quantify the value of

the conservation benefit so that the *quid pro quo* (i.e., value of forage must equal value of conservation benefit) requirement of all grassbanks® is met. The Rocky Mountain Front Grassbank® has identified similar concerns (*pers. comm.* Lisa Bay). Foundations and nonprofits like the Nature Conservancy, which are financially backing the grassbank® concept, want to know what they are purchasing for their dollars. Are current monitoring efforts adequate to answer these questions? Are grassbanks® an economically effective way to attain conservation goals? Do grassbanks® generate a greater civic capacity, which in turn promotes additional conservation projects that leverage conservation action at an ecologically (i.e. watershed or landscape) appropriate scale? Our research project will be the first step in addressing some of these basic questions about grassbanks® as well as provide a comprehensive evaluation of the grassbanks® as a conservation strategy.

Objectives:

The purpose of this study is to describe and evaluate grassbank efforts in the west. We propose using four main objectives to accomplish this task.

Objective 1 – Document Existing Grassbank® Efforts

Because no peer-reviewed grassbank® literature currently exists, the first objective will be to develop a publication defining grassbanks®, documenting their history, and highlighting specific research needs. Additionally, we will explore literature that addresses techniques that can be used to evaluate the economic effectiveness of conservation strategies like grassbanks®.

Objective 2 – Financial Analysis

A financial analysis that identifies the costs and benefits associated with each grassbank® is currently lacking. For each grassbank®, we will document the expenditures and the corresponding conservation benefits achieved and develop cost-effectiveness ratios to make comparisons among them. Cost-effectiveness analysis, which is an alternative to cost-benefit

analysis that is often used when the benefits are not easily quantified into monetary units, but decisions about tradeoffs still need to be made, will be used to quantify the costs and benefits for comparison across projects and sites (Boardman et al. 1996).

Objective 3– Stakeholder Assessment of Grassbanks® Effectiveness

The effectiveness of grassbanks® as a conservation strategy cannot be determined solely through a financial analysis. This next objective will be informed by an interpretive approach. We will learn about stakeholder understandings of grassbank® success, challenges, and opportunities associated with their experiences with grassbanks® using in depth interviews (Ragin 1994; Strauss and Corbin 1998; Stringer 1999). The interviews will provide a medium to explore such questions of whether the conservation objectives set out by the stakeholders have been met.

Objective 4 – Synthesis

We will develop a comparative case-study that will synthesize existing data to describe the similarities, differences, and relative degrees of success of the various grassbanks®. Specifically, we are interested in exploring how the application of one collaborative strategy, grassbanking®, varies with institutional, temporal, and regional differences.

Procedure:

Using multiple approaches to assess the effectiveness of particular phenomena is widely supported in the field of evaluative research (Guba and Lincoln 1989; Patton 1990). Multiple approaches allow researchers to overcome limitations encountered with using anyone method and increase the overall validity of the evaluation (Patton 1990). Therefore, we will use both quantitative and qualitative approaches, primarily in the form of developing a cost-effectiveness analysis, in depth interviews, and a comparative case study, to evaluate grassbanks®.

Objective 1 – Document Existing Grassbank® Efforts

We will obtain and review all literature related to grassbanks®. Preliminary contact has been made with representatives of each of the grassbanks® and the research assistant has been working closely with the Heart Mountain Grassbank® and Grassbank®, Inc. in particular. The purpose of this objective is to develop a peer-reviewed publication that introduces the grassbank® concept to the academic audience and discusses the benefits and challenges of this concept and research needs.

Objective 2 – Financial Analysis

The next objective is to document the expenditures against the conservation returns for all five existing grassbanks. We will summarize this information by computing the cost-effectiveness (CE) ratio. We will take the ratio of the cost of each alternative i , denoted by C_i , to the effectiveness (or benefit) of that alternative, E_i :

$$Ce_i = C_i/E_i$$

This CE ratio can be thought of as the average cost per unit of effectiveness. The most cost-effective project has the lowest average cost per unit of effectiveness. Projects will be ordered from the most cost-effective (those with the smallest CE ratio) to the least cost-effective (those with the largest CE ratio).

Objective 3 – Stakeholder Assessment of Grassbank® Effectiveness

To incorporate stakeholder interpretation and investigate if the conservation objectives set out by the stakeholders have been met, we will conduct 12-15 semi-structured interviews of grassbank® participants and nonparticipants at three sites (e.g. *Rocky Mountain Front Grassbank, Heart Mountain Grassbank, and Valle Grande Grassbank*) for a total of 35-45 interviews. Interviews will follow the methodology of Kvale (1996) (i.e. thematizing, designing, interviewing, transcribing, analyzing, verifying and reporting) and will be semi-structured in the sense that questions will be prepared in advance, but with flexibility to take on other directions once the

interview begins. A directed snowball sampling will be used to select participants for the interviews (Babbie 1998). The interviews will be tape recorded, transcribed and coded (Maxwell 1996; Neuendorf 2002). Selected participants to be interviewed will reflect those participants who are involved in administration, monitoring, participation, and funding the grassbank®. Interviews will be analyzed for predominant themes using version 6 of the qualitative analytical software, NUDIST, which is used to organize and display data that can, in turn, be organized, analyzed, verified, and reported (Barry 1998).

Objective 4 – Synthesis

We will develop a comparative case study of three of the five of the existing grassbanks® using multiple sources of evidence, in-depth interviews, documentation, archival records, and participant observation (Feagin 1991; Yin 1994; Huberman and Miles 1994) for the purpose of investigating the effects of regional, temporal, and institutional differences when using one collaborative approach. Data analysis will include examination, tabulation, categorization, and triangulation of the evidence (Yin 1994).

Study Site Selection – We will conduct the financial analysis component of the study at five grassbanks® that have been in existence for at least two seasons in the western U.S.: *Valle Grande Grassbank*® – New Mexico, *Rocky Mountain Grassbank*® – Montana, and *Heart Mountain Grassbank*® – Wyoming, *Gray Ranch Grassbank*® - New Mexico, and *Vina Plains Grassbank*® - California. However, we will limit the interview and case-study to three of the five existing grassbanks (e.g. *Rocky Mountain Grassbank*, *Heart Mountain Grassbank*, and *Valle Grande Grassbank*), which will allow us to make distinctions between regional, temporal, and institutional differences among grassbanks® without sacrificing the ability to study these individual cases in detail.

Probable Duration:

- 1/03-5/03 **Literature review.** We will obtain and evaluate literature pertaining to grassbanks® and other specific conservation strategies where a public good is traded for a private good (e.g., stewardship contracting). We will focus the literature review and article on grassbanks® including an overview, definitions, challenges, and opportunities associated with grassbank®.
- 6/03-5/04 **Data collection.** Data collection will consist of conducting 36-45 semi-structured interviews, documentation, archival records, interviews, direct observations, financial statements, and participant observation for each of the five grassbanks®.
- 6/04-12/04 **Data analysis.** Perform literature review; code and interpret interviews; examine, tabulate, categorize, data to address initial propositions in the study
- 1/05-5/05 **Publishing.** In addition to producing multiple peer-reviewed publications, the outcomes of this project will be disseminated through sources like Grassbank®, Inc., SARE network, popular articles, a traveling grassbank® educational trunk, and a potential book/booklet provided to local and regional livestock associations. Finally, The Draper Museum of Natural History, housed within the Buffalo Bill Historical Center in Cody, Wyoming has offered to provide space to explain the grassbank® concept.

Personnel:

CO - PI – Dr. Jack Ward Thomas, Boone and Crockett Conservation Program, University of Montana, Missoula MT 59812, 406.243.5566, jw@forestry.umt.edu

CO - PI – Dr. Hayley Hesseln, School of Forestry, University of Montana, Missoula MT 59812-0576, 406.243.4285, hayley@forestry.umt.edu

CO – PI – Dr. J.D. Wulfhorst, College of Agricultural & Life Sciences, University of Idaho, Moscow, Idaho, 83844-2334, 208.885.7645, jd@uidaho.edu

CO- PI – Dr. Joni Ward, Director of Science, The Nature Conservancy, Wyoming Chapter, Lander WY, 82520, 307.332.2973, jward@tnc.org

Research Assistant – Stephanie Gripne, M.S., Boone and Crockett Conservation Program, University of Montana, Missoula, MT 59812, 406.243.4128, sgripne@selway.umt.edu

Institutional Units Involved:

University of Montana: Dr. Jack Ward Thomas is the Director of the Boone and Crockett Wildlife Conservation Program; Stephanie Gripne is part of the Boone and Crockett Wildlife Conservation Program. Dr. Hayley Hessel

University of Idaho: Dr. J.D. Wulforth is the Director of the Social Science Research Unit and a faculty member in the Department of Agricultural Economics & Rural Sociology at the University of Idaho.

The Nature Conservancy, Wyoming Chapter: Dr. Joni Ward is the Director of Science for the Wyoming Chapter of the Nature Conservancy. Bob Budd – Facilitator, Director of Science, Stewardship and Planning. Laura Bell- Absarokas Program Director and Coordinator of Heart Mountain Grassbank.

The Nature Conservancy, Montana Chapter: Lisa Bay is the TNC representative for the Rocky Mountain Front Grassbank.

The Valle Grande Grassbank: Bill deBuys is the New Mexico Conservation Fund Representative and Coordinator for the Valle Grande Grassbank.

Private Landowners: Matt Bell- Rancher, 125 Lower South Fork Road, Cody Wyoming, 82414, 307-587-4552, Jerry Schneider - Rancher, Clark, Wyoming, 82435, 307-645-3380, Bernie Bjornsted - Rancher, Powell, Wyoming 82435, 307-754-3249. Private land owners on the Rocky Mountain Front have been identified. We will work with researchers who have previously worked with individuals in the area before any participants are selected.

Cooperation: We are in the process of obtaining formal support for the project from the Rocky Mountain Research Station – Flagstaff and the Shoshone National Forest is a partner the project.

References:

- Arno, S.F., and J. K. Brown. 1991. Overcoming the paradox in managing wildland fire. *Western Wildlands* 17(1):40-46.
- Babbie, E. 1998. *The practice of social research*. Eight Edition. Wadsworth Publishing Company, Belmont, CA, USA.
- Barry, C. A. 1998. Choosing qualitative data analysis software: Atlas/ti and Nudist compared. *Sociological Research Online*, 3(3), <http://www.socresonline.org.uk/socresonline/3/3/4.html>
- Bay, L. 2001. A case study of the Rocky Mountain Front Grassbank: The Nature Conservancy of Montana.
- Bell, L. 2001. A Case Study of the Heart Mountain Grassbank. The Nature Conservancy of Wyoming.
- Berry, W. 1987. *Home Economics*. Sierra Club Books, San Francisco, CA., USA.
- Boardman, A.E., D. H., Greenberg, A.R. Vining, and D. L. Weimer. 1996. *Cost-benefit analysis: concepts and practice*. New Jersey, USA.
- Cestero, B. 1999. *Beyond the hundredth meeting: a field guide to collaborative conservation on the West's public lands*. Sonoran Institute, Tucson, AZ, USA.
- Christensen, J. September 10, 2002. Environmentalists Hail the Ranchers: Howdy, Pardners! *New York Times* pD3(N) pF3(L) col 2 (35 col in).
- Czech, B., P. R. Krausman, and P.K. Devers. 2000. Economic associations among causes of species endangerment in the United States. *Bioscience* 50(7):593-601.
- deBuys, W. 1999. Growing Credit at the Grassbank: Collaboration at New Mexico's Valle Grande. *Range Magazine* Summer:54-55.
- deBuys, W. August 4, 1999. Needed: a larger cast for the rangeland drama. *The Denver Post* 2D Edition.
- Donald, B. J. 1997. Fostering volunteerism in an environmental stewardship group: A report on the task force to bring back the Don, Toronto, Canada. *Journal of Environmental Planning and Management* 40:483-505.
- Edwards, C. 2002. *Grassbanks: A Study of Policy Diffusion and Adaptation in the American West*. Masters thesis, University of Colorado at Boulder.
- Feagin, J. R., A. M. Orum, and G. Sjoberg. 1991. *A case for the case study*. The University of North Carolina Press, Chapel, Hill, USA.
- Goldman, D. October 24, 1999. 'Radical center' responds to the extremes. *The Santa Fe New Mexican*.
- Gripne, S. L., and J. W. Thomas. 2002. Maintaining Viable Farms and Ranches Adjacent to National Forests for Future of Wildlife and Open Space Part 2: Working Towards a Solution. *Rangelands* 24(1):13-16.
- Guba, E. G., and Y. S. Lincoln. 1989. *Forth generation evaluation*. Sage Publications, Newbury Park, CA, USA.
- Harper, C. 2001. *The grassbank movement: a status report of grassbank initiatives in the west*. Conservation Fund.
- Huberman, A. M., and M. B. Miles. 1994. *Qualitative Data Analysis*. Sage Publications, Thousand Oaks, CA, USA.
- Jensen, M. N. 2001. Can cows and conservation mix? *Bioscience* 51(2):85-90.
- Kappel, T. 2002. Grassbank. *The Nature Conservancy Magazine*.
- Kenney, D. S. 1999. Are community-based watershed groups really effective? *Chronicle of Community* 3:33-37.
- Kvale, S. 1996. *Interviews: an introduction to qualitative research interviewing*. Sage Publications, Thousand Oaks, CA, USA.
- Maestas, J. D., R. L. Knight, W.C. Gilbert. July 2001. Biodiversity and land-use change in the American Mountain West. *The Geographical Review* 91(3):509-25.

- Mahler, R. 2001. Grassbanks in the West: Challenges and Opportunities: A two-day Conference of Ideas and Experience. The Quivira Coalition, Santa Fe, NM, USA.
- Maxwell, J. A. 1996. Qualitative Research Design: An Interactive Approach. Applied Social Research Methods Series Volume 41. Sage Publications, Thousand Oaks, CA, USA.
- McDonald, B, and Cook, J. 1998. The Malpai Borderlands Group: Ecosystem Management in Action. *Environments* 26(1):48-55.
- McNutt, P. 2001. The Lassen Hills Vina Plains Grassbank. The Nature Conservancy.
- Mutch, R. W. 1994. Fighting fire with Prescribed Fire: a Return to Ecosystem Health.
- Neuendorf, K. A. 2002. The content analysis guidebook online: An accompaniment to the content analysis guidebook. Sage Publications, Thousand Oaks, CA, USA.
- Page, J. 1997. Ranchers from a 'radical center' to protect wide-open spaces. *Smithsonian* 28(3):50-60.
- Patton, M. Q. 1990. Qualitative research and evaluation methods. Sage Publications, Thousand Oaks, CA, USA.
- Ragin, C. C. 1994. Constructing Social Research. Pine Forge Press. Thousand Oaks, CA, USA.
- Strauss, A., and J. Corbin. 1998. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. Second Edition. Sage Publications, Thousand Oaks, CA, USA.
- Stringer, E. T. 1999. Action Research. Second Edition. Sage Publications, Thousand Oaks, CA, USA.
- Theobald, D. M., and N. T. Hobbs. 2002. A framework for evaluating land use planning alternatives: protecting biodiversity on private land. *Conservation Ecology* 6(1): 5. [online] URL: <http://www.consecol.org/vol6/iss1/art5>
- Theobald, D. M. 2002. Land-use dynamics beyond the American urban fringe. *The Geographical Review* 91(3):544-564.
- Thomas, J.W., and S. L. Gripne. 2002. Maintaining Viable Farms and Ranches Adjacent to National Forests for Future of Wildlife and Open Space Part 1: The History of the Problem. *Rangelands* 24(1):10-13.
- White, C. September 19, 1999. Conservation Pays off for ranchers. *Idaho Statesman* 8B.
- Wondolleck, J. M., and S. L. Yaffe. 2000. Making collaboration work: lessons from innovation in natural resources management. Island Press, Washington D. C., USA.
- Woodall, C., A. Handler, and L. Broberg. 2000. Social dilemmas in grassland ecosystem restoration. *Ecological Restoration* 18(1):39-44.
- Yin, R. K. 1994. Case study research: Design and Methods. Second Edition. Applied Social Research Methods Series. Volume 5. Sage Publications, Thousands Oaks, CA, USA.