Technical Report

CONSERVATION PARTNERSHIPS: INDICATORS OF SUCCESS

by

Rebecca S. Toupal, M.L.A.
University of Arizona

Michael D. Johnson
Anthropologist
NRCS Social Sciences Institute
University of Arizona

Social Sciences Institute
Technical Report
Release 7.1 (February 1998)

Acknowledgments

Many NRCS employees, conservation district members, RC&D coordinators and council members, and private landowners contributed immensely to this study. We would like to thank Bill Anderson, Shirley Boothby, Jim Briggs, Mark Brunson, Walter Bunter, Rich Casale, George Cleek, Bill Cokely, Smitty Covey, Jim Davison, Tom Fedje, Jesse Fitzgerald, Dave Franzen, Gerry Gonzales, Gary Gross, Charlie Hahnkamp, Douglas Helms, Joe Henry, Phill Jacquez, Kay Joy, Jeff Kenyon, Wayne Killgore, Carol Kruse, Barb Landgraf, Ray Ledgerwood, Tom Makowski, Vicki McGuire, Sharon Nance, Jeff Repp, Kristin Schroeder, Bob Steidl, Judy Tilman, Donna Vettleson, and Dave White.

We would especially like to thank the many partners of the Vernon Creek, Badger Creek, and Muddy Creek watershed projects who participated in this study. These individuals were more than generous with their time and knowledge. Many thanks also to the project managers and their staffs: Todd Nielson, Norm Evenstad, Jana Johnston, and Carlos Garcia of Utah, Jane Wustrow and Kathy Trujillo, of Colorado, and Larry Hicks, of Wyoming.

Finally, many thanks to the staff of the Social Sciences Institute of the U.S.D.A. Natural Resources Conservation Service.

Table of Contents

List of Tables

Introduction

Conservation partnerships have addressed natural resource problems in watersheds throughout the United States for over sixty years. Increased public interest, awareness, and participation in conservation issues since the 1960s, have added to the complexity of successfully addressing conservation issues. Conservation partnerships often involve public agencies, private organizations, and private land owners who have interests in, concerns with, and/or jurisdiction over land and natural resources. This report is a summary of recent research (Toupal, 1997) that investigated indicators of success in watershed partnerships.

Topics addressed include: (1) the development of a success model; (2) a comparison of the model with three case study projects led by the U.S.D.A. Natural Resources Conservation Service (NRCS), conservation districts (CDs), or Resource Conservation and Development (RC&D) councils; (3) a guide for developing successful conservation partnerships; and (4) a method for combining qualitative and quantitative measures of success in order to assess partnerships.

Indicators of success in conservation partnerships from around the world were found in such fields of study as natural resource management, environmental science, environmental politics, sociology, and rural sociology. The conservation partnerships discussed in these sources shared many common features including involvement of public and private interests, concerns with water quality and erosion, and geographic areas of concern at the watershed or subwatershed scale.

The Development of a Success Model

One of the primary purposes of this research is the establishment of methods to assess partnership success. Data on partnership success that has been gathered under similar paradigms is scanty. This research is intended to provide a starting point that may help in standardizing the ways in which partnership success and failure are measured.

The effectiveness of conservation partnerships has been examined in several studies (Endicott, 1993a; Huillet, et al, 1990; Long and Arnold, 1995). These studies, involving analyses of projects from around the world, suggest multiple models and guides for successful conservation partnerships, and identify numerous elements contributing to success.

Several limitations affected the development of such models and guides. The first one was the contention that no single approach would work for every partnership (Coyle, 1995; Daly, 1994; Zube, 1991). The second limitation was a variety of definitions of “success” (Anderson and Baum, 1987; Endicott, 1993a; Huillet, et al, 1990; Long and Arnold, 1995; Zube, 1992). The diversity of values assigned to natural resources was identified as a third limitation (Hatfield and Hatfield, 1986; Houghton, 1979; Napier, et al., 1995; Nowak, 1992).

The contention that no single approach could be broadly applied was addressed in this study by assuming that "approach" was the "beginning-to-end" procedure used by partnerships. The diversity of natural resources, resource problems, and people within a given watershed does limit the practicality of such an "approach." There are, however, characteristics of success common to a wide range of conservation partnerships that may provide a common basis for assessment (Anderson and Baum, 1987; Endicott, 1993a; Huillet, et al, 1990; Long and Arnold, 1995; Zube, 1992).

The wide variety of definitions of success was addressed by combining quantitative and qualitative measures of success. Common quantitative measures included the number of acres protected from flooding, tons of reduced soil erosion, and production increases (Badger, et al., 1966; Heady, 1951; MacGaffey, 1985; Romm, 1995). Qualitative measures included "resource and communication outcomes" indicative of partnership functioning as well as constituent satisfaction (Lavigne, 1995: 5). This combination of qualitative and quantitative measures broadened both the applicability and the usefulness of this study.

The limitation of a diversity of values was addressed by including as many interests as possible in defining partnership success. Since local participation and community support have been identified as important to achieving partnership success (Bouchard, et. al., 1997; Clements, 1997; Richardson and Brunson, 1997; Sampson, 1992, 1997), development of any guidance for developing successful partnerships should include citizen input in addition to that of agencies and organizations.

Addressing these three limitations provided a framework for development of a success model. Thirty literature sources that included material from public agencies, private organizations, and research groups were examined[1]. A list of elements of partnership success identified in these sources was compiled and is included as Appendix A.

Several aspects of partnerships were addressed by these elements, including participation, resources, communication, goals, decision-making, problem-solving, and leadership. Participation was described by who and how people participated in conservation partnerships[2]. Resources included the number of people available to the partnership, the skills and interests of individual participants, money, project scale, technology, and coordination of all resources[3]. Communication was described by what and how information was communicated, how often information was communicated, and how information was perceived[4]. Goals were described as being appropriate and achievable[5]. Decision-making elements included how decisions were made, who made the decisions, and upon what basis decisions were made[6]. Problem-solving elements focused on how problems were solved or resolved[7]. Leadership was described relative to existence or presence, and operation[8].

Many of the elements in the list were identified by more than one source. Element recurrence among different sources provided a basis to refine the list into 65 characteristics of success. The characteristics were then ranked by recurrence of literature citation. The most recurrent characteristics were assumed to be most important to partnership success.

Mention in the literature of the 65 characteristics ranged from 1 to 29 times. More than half of the characteristics were cited only once. Twenty-five percent of the characteristics were cited by two or three different authors. The remaining characteristics were cited by 4 to 29 different authors. The 65 characteristics were further divided into three categories on the basis of the number of times a particular element was mentioned in the literature. Thirteen characteristics having four or more citations were assumed to be the most important and were labeled as "primary." Sixteen characteristics with two or three citations were listed as "secondary" and the remaining 36 characteristics with only one citation each were listed as "tertiary" (Appendix A.).

The importance of the primary characteristics was based on the assumption that they had greater potential for broad applicability than the secondary or tertiary characteristics. Given the need for a broadly applicable model, only the primary characteristics were selected to comprise a model of partnership success.

Recurrence of the primary characteristics in the literature varied enough to suggest a descending hierarchy of importance and applicability to partnership success. Three rankings were chosen for simplicity. "Highly Successful" characteristics were assumed to have the greatest applicability to a broad variety of partnerships. "Moderately Successful" and "Minimally Successful" characteristics were assumed to have lesser applicability (Table 1.).

Table 1. The Success Model.

Characteristic	Recurrence
Highly Successful:	
Active participation by a wide variety and large number of partners	29
Common goals	16
Consensus	14
Adaptable, flexible leadership/process	13
Moderately Successful:	
A variety and number of people to do the work	10
Shared risks, rewards, credit	9
Trust	9
Money, adequate and shared	9
Regular communication	8
Minimally Successful:	
Commitment	7
Clear, consistent communication	6
Local authority for decision-making	5
Existence of leadership	4

Comparison of the Model with Three Watershed Projects

The success model was derived from the secondary literature on partnerships throughout the world. A comparison to primary, field-collected data was considered

necessary to test the validity of the model. If the model was to include diverse values, and therefore be more broadly applicable, private land owners needed to be included in data collection. Trust is an important issue, however, when working with private land owners (Endicott, 1993a; Thompson, 1993).

The NRCS, formerly the Soil Conservation Service, is an agency that has developed trust with private land owners over the past sixty-three years (Mitchell, 1988; Thompson, 1993). An examination of watershed partnerships led by the NRCS and their local partners of CD boards and RC&D councils provides a way to consistently include private land owner perspectives. The history of NRCS's technical assistance to private land owners includes conservation planning and management on a watershed-scale which further supports the choice of this agency as a source for case studies[9].

The geographic area examined for NRCS watershed projects encompassed ten contiguous western states. This area had a large potential pool of partnership projects eligible for study. Several criteria were used to identify projects as eligible for comparison to the success model:

1. Projects had to be led by the NRCS, a CD board, or an RC&D council;
2. Projects had to have a written plan of action;
3. Projects had to be at least 50% complete relative to the goals stated in the plan;
4. Projects had to exhibit a diversity of public and private interests through participation and land ownership; and
5. Projects had to represent different programmatic approaches to watershed planning and management.

The NRCS uses three approaches in watershed planning: (1) the Coordinated Resource Management Planning process (Anderson and Baum, 1987); (2) the Small Watershed Program, PL83-566 (Simms, 1970; Steiner, 1990); and (3) the Resource Conservation and Development Program, P.L. 87-703 (Steiner, 1990). These three approaches comprised the fifth criterion for project selection noted above. Using these five selection criteria, three projects were chosen for case studies:

- The Vernon Creek Watershed project, located in Utah, began in 1967 and was led by the local conservation district and NRCS field office. This project had plan documents and cost-sharing contracts and was completed in the mid-1970s. The project included public and private interests and was carried out under the Small Watershed Program of the NRCS.

- The Badger Creek Watershed in Colorado is led by the local Resource Conservation and Development Council. Originating in 1981, this project has plan documents and individual conservation plans. It is estimated to be 75% complete. The project includes public and private interests and is being carried out under the RC&D program.

- The Muddy Creek Watershed in Wyoming began in the early 1990s and is led by the local conservation district. This project has informal plan guidelines that are reviewed and updated on a regular basis as well as individual conservation plans. It is estimated to be over 50% complete. The partnership includes public and private interests and is carried out using the CRMP process.

Description of the Case Study Watersheds

The three case study watersheds share many similarities common to the western, intermountain setting. All the selected watersheds are comprised of private, state, and federal lands with habitat variation ranging from sagebrush and grasslands to heavily timbered areas (Table 2.). The three partnerships all included federal, state, and local governments, private organizations, and private land owners (Appendix B.).

Table 2. Physical Description of Case Study Watersheds.

		ACRES				
Watershed	**Elevations**	**Private**	**State**	**USFS**	**BLM**	**Total**
Vernon Crk.	5,200′- 9,000′	31,735	4,845	47,671	49,200	133,451
Badger Crk.	6,800′-11,654′	31,320	33,760	40,760	29,200	135,040
Muddy Crk.	6,000′- 9,000′	100,800	25,200	0	154,000	280,000

Vernon Creek Watershed. Land use in the watershed, at the time of project initiation, was predominantly grazing with 129,360 acres of rangeland. Irrigated crops were raised on 2,200 acres and dryland crops were raised on 1,500 acres. The rangeland in the watershed included twenty-six ranches and provided a great deal of wildlife habitat (Vernon Soil Conservation District, 1967).

The Vernon Watershed Plan focused on issues of water quality and irrigation water management. The following objectives were identified in the plan (Vernon Soil Conservation District, 1967):

- Minimize damages from sediment-laden floodwater in the Vernon drainage.
- Eliminate sediment from the irrigation water supply.
- Store, regulate, and otherwise control to the maximum extent feasible, the runoff from Vernon Creek, Bennion, and Dutch drainages for irrigation purposes.
- Provide irrigation distribution facilities to enable sprinkler application of dependable water supplies.
- Protect watershed lands from erosion and summer flood runoff.

- Obtain the most efficient and sustained, productive use of land and water resources.
- Increase and stabilize net farm incomes.

Badger Creek Watershed. Land uses in the watershed include livestock grazing, wildlife habitat, private residences, recreation, and some timber harvesting (Keidel, 1994; Sangre de Cristo RC&D Council, 1990). The principal game species are elk and antelope. Mule deer populations also occur but are declining. Brown trout is the principal cold water fish species. Five ranchers have leases and/or ownership in the majority of the watershed. Hunting and fishing make up the majority of recreational use in the watershed (Sangre de Cristo RC&D Council, 1990).

The Badger Creek Watershed Plan focused on livestock management and distribution to reduce erosion and improve water quality (Valentine and Carochi, 1993). The objectives identified in the plan were (Sangre de Cristo RC&D Council, 1990):

- Implement a proper grazing system on 23,700 acres.
- Initiate deferred grazing on 6,000 acres.
- Establish stockwater facilities for better livestock distribution by developing four springs.
- Construct 50 miles of fencing (electric or 3-wire-barbed) for livestock management.
- Construct 68 erosion control structures. These sites will be selected during plan development in cooperation with landowners.
- Establish a demonstration site (3.9 acres) on an eroding area to show the effectiveness of SCS plant materials species for erosion control.
- Assess the effectiveness of planned Best Management Practices (BMPs) that are installed within the watershed as it relates to reduction of sediment measured at the continuous monitoring station at Big Springs.
- Assess impacts of management strategies on riparian areas within the watershed.
- Determine biological impacts to Badger Creek.

Muddy Creek Watershed. Land uses in the watershed include livestock grazing, oil and gas development, coal reserves with development potential, recreation, and wildlife habitat. Ranchers graze cattle and sheep in the watershed (Hicks, L., Warren, and Hicks, C., 1996).

The Muddy Creek Watershed Plan focused on livestock management, habitat improvements, water quality, and user relations. Six goals were identified by the Muddy Creek partnership (Hicks, 1997: Hicks, L., Warren, and Hicks, C., 1996; Little Snake River Conservation District and Bureau of Land Management, 1995):

- Increase cooperation, coordination, and trust among landowners, permittees, agencies, and interest groups.
- Improve critical ranges for antelope, elk, and deer in the area.
- Demonstrate that properly managed livestock grazing can be compatible with consumptive and non-consumptive use of the area's multiple resources.
- Improve water quality and reduce erosion and sedimentation. Restore the riparian habitats to their desired future condition, including visible changes in plant community, stream channels, and hydrologic regimes. This includes improvement of existing woody plant communities and their restoration to previously occupied sites.
- Manage upland habitats to improve their bio-diversity and productivity for selected wildlife species and domestic livestock.
- Reestablish Colorado River Cutthroat to headwater streams.

Collection of Partnership Data

Direct field work, in the form of personal interviews, was chosen as the primary data collection method over non-field survey methods for several reasons. These reasons included: the topic had a high degree of potential sensitivity that warranted a personal approach; cooperation from respondents could be better achieved through personal interviews; and the potential for empathy and confidence building was greater and perceived "threat" was potentially less when using personal interview collection methods. Mail surveys were identified as less effective for enlisting cooperation and telephone surveys were identified as less appropriate for dealing with sensitive material (Foddy, 1993; Fowler, 1984).

Data collection was organized in a manner that allowed interviewees to answer both closed and open-ended questions that had been pre-tested by NRCS, CD, and RC&D individuals with watershed partnership experience in other states (Appendix C). This combination of question types was used to capture a standard response set and allow the expression of individual concerns and perspectives.

The case study partnerships had from forty to fifty-one active members representing a wide variety of public and private interests. The size and diversity of the partnerships, in addition to time and funding constraints, influenced the decision to interview a sample of each partnership.

Sample size was determined based on a strategy that outlined subgroups of the population of watershed partnerships (Fowler, 1984). The strategy included estimating percentages of the total population represented by each subgroup. Using this strategy, each partnership was divided into subgroups comprised of public or private interests. Portions of each subgroup were selected to match the proportion of corresponding interests in the total partnership. For example, if the portion of federal agencies within the public subgroup was

forty percent, then forty percent of the public portion of the sample for that partnership was represented by federal agencies (Appendix B.).

Applying this strategy to the three case study partnerships resulted in a thirty percent sample size. Using Multidimensional scaling (MDS) in SPSS (statistical software) and the group-to-group measure in RMRATE (Gimblett, 1997), the degree of reliability and validity of the sample sizes was determined. The MDS resulted in an r^2 value of 0.918 with a stress value (equivalent to standard deviation) of 0.176. These values indicate high validity in the sample sizes. The group-to-group coefficient was 0.918. Given that perfect agreement in this coefficient would result in a value of 1.00, a value of 0.918, or almost 92%, indicates a very high probability that the sample is representative of the defined population (Gimblett, 1997).

Analysis of Partnership Data

Interview responses were totaled by question and recorded as a percentage of agreement (Appendix D.). Two or more questions addressed each characteristic of the success model. Agreement regarding the level of presence of the characteristics was determined by averaging the responses of the questions assigned to each characteristic.

Statistical tests were used to determine differences in two areas. The first analysis determined whether the percentages of characteristic presence in the case studies differed significantly from the success model. The second analysis determined whether differences in public and private perceptions occurred (Bhattacharyya and Johnson, 1977; Sokal and Rohlf, 1981).

Results

The results of the field work included identification of characteristics of success in each case study and differences between public and private perceptions. Plan goals, relative to project accomplishments, and participants' perceptions and definitions of success were also compiled.

Characteristics of Success in the Case Studies. Each characteristic was recorded by frequency and percentage (Tables 3, 4, and 5.). The characteristics identified as present by seventy percent or more of the respondents were determined to have "strong presence" (Table 6.). A response level between thirty and seventy percent resulted in a determination of "moderate presence." Response levels of thirty percent or lower were determined to reflect "weak to no presence".

Table 3. Characteristics found in Vernon Creek Partnership (n=12).

Characteristic (Rank in Model)	#	%
Existence of leadership (13)	11.5	95.8

Active participation by wide variety, large number of partners (1)	11.3	94.4
Money: adequate & shared (8)	10.5	87.5
Common goals (2)	10.0	83.3
Clear and consistent communication (11)	10.0	83.3
Shared risks, rewards, and credit (6)	9.0	75.0
Trust (7)	9.0	75.0
Regular communication (9)	9.0	75.0
Flexible leadership (4)	8.7	72.2
Consensus decision-making (3)	8.7	72.2
Local authority for decisions (12)	8.0	66.7
Variety of skills, large number of people to work (5)	7.5	62.5
Commitment (10)	5.0	41.7

Table 4. Characteristics found in Badger Creek Partnership (n=15).

Characteristic (Rank in Model)	#	%
Existence of leadership (13)	15.0	100
Active participation by wide variety, large number of partners (1)	13.0	86.7
Flexible leadership (4)	11.7	77.8
Money: adequate & shared (8)	12.0	80.0
Clear and consistent communication (11)	12.0	80.0
Flexible leadership (4)	11.7	77.8
Common goals (2)	11.0	73.3
Shared risks, rewards, credit (6)	10.5	70.0
Trust (7)	10.5	70.0
Variety of skills, large number of people to work (5)	10.0	66.7
Local authority for decisions (12)	10.0	66.7
Consensus decision-making (3)	9.0	60.0
Commitment (10)	6.7	44.4
Regular communication (9)	6.0	40.0

Table 5. Characteristics found in Muddy Creek Partnership (n=14).

Characteristic (Rank in Model)	#	%
Existence of leadership (13)	14.0	100
Money: adequate & shared (8)	13.5	96.4
Clear and consistent communication (11)	13.0	92.9
Active participation by wide variety, large number of partners (1)	12.7	90.5
Common goals (2)	11.5	82.1
Trust (7)	11.5	82.1
Flexible leadership (4)	11.0	78.6
Consensus decision-making (3)	11.0	78.6

Variety of skills, large number of people to work (5)	11.0	78.6
Regular communication (9)	10.5	75.0
Local authority for decisions (12)	9.5	67.9
Shared risks, rewards, credit (6)	8.5	60.7
Commitment (10)	6.7	47.6

Table 6. Characteristics with strong presence in the three case studies.

Characteristics	VCW	BCW	MCW
Active participation by a wide variety, large number of partners	x	x	x
Common goals	x	x	x
Consensus	x		x
Adaptable, flexible leadership/process	x	x	x
A variety and number of people to do the work			x
Shared risks, rewards, credit	x	x	
Trust	x	x	x
Money, adequate and shared	x	x	x
Regular communication	x		x
Commitment			
Clear, consistent communication	x	x	x
Local authority for decision-making			
Existence of leadership	x	x	x

All characteristics displayed moderate to strong presence in the three case studies. Importance ranks of success characteristics, however, were found to be significantly different in the three case studies relative to the success model derived from the literature (Table 7).

Table 7. Comparison of characteristic rankings between three case studies and the success model.

Characteristic	Model %	Vernon %	Badger %	Muddy %
Active participation by a wide variety & large number of partners	96.7	94.4	86.7	90.5
Common goals	53.5	83.3	73.3	82.1
Consensus	46.7	72.2	60.0	78.6
Adaptable, flexible leadership/process 43.3		72.2	77.8	78.6
Variety & number of people to do the work	33.3	62.5	66.7	78.6
Shared risks, rewards, credit	30.0	75.0	70.0	60.7
Trust	30.0	75.0	70.0	82.1

Money, adequate and shared	30.0	87.5	80.0	96.4
Regular communication	26.7	75.0	40.0	75.0
Commitment	23.3	41.7	44.4	47.6
Clear, consistent communication	20.0	83.3	80.0	92.9
Local authority for decision-making	16.7	66.7	66.7	67.9
Existence of leadership	13.3	95.8	100.0	100.0

The strong presence of seven characteristics in all three case studies indicates these characteristics consistently contribute to successful implementation of NRCS-led partnerships. When the case study responses are combined for evaluation, however, an additional characteristic from the model, consensus, is shown to be strongly present (Table 8.). This change is due to the agreement of presence for consensus being very high in two of the three case studies and moderately high in the third case study.

Table 8. Characteristics found in three NRCS partnerships (n=41*).

Characteristic	#	%
Existence of leadership	40.5	98.9
Active participation by wide variety, large number of partners	37.0	90.2
Money: adequate & shared	36.0	87.8
Clear and consistent communication	35.0	85.4
Common goals	32.5	79.3
Flexible leadership	31.4	76.6
Trust	31.0	75.6
Consensus decision-making	28.7	70.0
Variety of skills, large number of people to work	28.5	69.5
Shared risks, rewards, credit	28.0	68.3
Local authority for decisions	27.0	65.9
Regular communication	25.5	62.2
Commitment	18.3	44.7

* Combined number of individuals interviewed.

Public versus Private Perceptions. Statistically significant differences between public and private responses to the interview questions were assumed to have the potential to affect characteristic presence since the responses to two or more questions were used to determine characteristic presence. Strong presence (≥70%) was interpreted as conclusive to the importance of a characteristic to partnership success. Moderate presence (≥30% and <70%) was interpreted as inconclusive of characteristic importance. Those characteristics of moderate presence that were addressed by questions having significant differences between responses might have resulted in strong presence if the responses had not been significantly different.

The statistical analysis of the Vernon Creek Partnership responses showed no significant difference between private and public responses in 86% of the interview questions. Significant differences between private and public responses occurred for only three questions. These were:

- Q4. Was the partnership able to get complete agreement when making decisions? (consensus)
- Q7. Was most of the work on the project done by a few individuals? (variety of people)
- Q15. Were your concerns addressed fairly by the partnership? (trust)

Since the characteristics of consensus (72.2%) and trust (75.0%) were strongly present, the significant differences for questions #4 and #15 were interpreted as not affecting the importance of these characteristics. The significant difference for question #7 may have contributed to inconclusive importance of the characteristics of commitment (41.7%) and a variety of people to do the work (62.5%).

Statistical analysis for the Badger Creek Partnership responses showed no significant difference between private and public responses in 100% of the questions. Recommendations for improvements made by the respondents, however, suggest that the characteristics of regular communication (40.0%) and consensus (60.0%) are conclusively important to success. Different perceptions in these instances did not contribute to levels of moderate presence.

The statistical analysis of the Muddy Creek Partnership responses showed no significant difference between private and public responses in 91% of the interview questions. Significant differences between private and public responses occurred for only two questions. These are:

- Q8. Were there many problems to overcome in order to complete the project? (leadership)
- Q16. Did the partnership have the ability locally to make all project decisions? (local authority)

Since the characteristic of flexible leadership (89.3%) was strongly present, the significant difference for question #8 was interpreted as not affecting the importance of this characteristic. The significant difference for question #16 may have contributed to inconclusive importance of the characteristic of local authority (67.9%).

When the responses for the three NRCS partnerships were combined, they showed no significant difference between private and public responses in 95% of the interview questions. Significant difference was found in question #16, however, that may have contributed to inconclusive importance of the characteristic of local authority (65.9%).

These findings indicate that differences between private and public responses in the three case studies had little influence on determinations of success in these partnerships. This

lack of influence may be due to the length of time (at least ten years) that respondents have been associated with their watersheds, agriculture, and/or natural resource issues.

Plan Goals Compared to Project Accomplishments. The Vernon Creek Watershed project was considered 100% complete by the mid-1970s, although management strategies continue today as part of the maintenance of the project. All of the plan goals were accomplished. Sediment reduction was achieved in Vernon Creek and Bennion and Dutch drainages. The quality, availability, and distribution of the irrigation water supply was improved. Floodwater damages were minimized and rangeland erosion was reduced. Farm incomes were improved and land and water resources were developed to higher and sustained productivity. The ranchers currently harvest up to four times more hay than they did before the project. Some of them began shipping hay out of the area during the winter, where they had shipped it in before the project (Soil Conservation Service, 1985; Natural Resources Conservation Service, 1997).

The Badger Creek Watershed project is estimated at 75% complete. Many of the plan goals have been realized. The acreage goal for application of proper grazing systems has been exceeded. Livestock distribution through stockwater development has resulted in improved riparian areas and increased grazing capacity. Fencing and erosion control structures have contributed to livestock distribution and reduced erosion. Monitoring continues to reflect water quality improvements and direct the partnership's activities. The demonstration site is showing how rest followed by proper grazing can result in a healthy riparian area (Wustrow, 1995a, 1995b, 1996).

The Muddy Creek Watershed project is estimated at well over 50% complete with over 80% of the conservation practices installed (Hicks, 1997). The plan goals have been or are being realized through land treatment practices and structural measures. Muddy Creek is being protected, enhanced, and conserved for wildlife, livestock, energy, and recreation uses, as identified in the partnership's mission statement. Improved rangeland health is being realized through water quality improvements, erosion and sediment reductions, and wildlife habitat improvements. The new grazing systems are resulting in compatibility between livestock and wildlife uses. Cooperation and trust has been developed within the partnership[10].

Vernon Creek Respondents' Perceptions and Definitions of Success. Almost ninety-two percent of the respondents were very satisfied with the partnership as a way to address the conservation needs in their watershed. The twelfth respondent was dissatisfied due to current problems with public use of the reservoir and surrounding area. Vandalism and littering are the primary problems. There is a lack of private control over the problems and a lack of help from public agencies.

Over 83% of the respondents would not change anything about the way the partnership operated. One respondent felt "government red tape" was a problem but offered

no specific solutions. The twelfth respondent suggested better contact from the parties in charge of the project.

Respondent satisfaction focused on the need and desire to have everyone agree with, and participate in, the project. "Everyone" included members of the watershed community and agencies and organizations with jurisdiction in the watershed. The respondents acknowledged a need for this diversity due to the complexity of land ownership and the scarcity of resources such as technical skills and money. Respondents were particularly satisfied with the sense of equality within the partnership. They specified the lack of "big brother down the landowners' throats" as a positive characteristic of this effort (Vernon Creek Interview, 1997).

The success of the Vernon Creek partnership was described by the respondents using both qualitative and quantitative factors. A variety of natural resource improvements, socioeconomic continuity, and recreational use by visitors from Salt Lake City were specifically identified as measures of success. A local leader in the partnership was credited as the key to project success by several respondents. Collectively, the respondents consider the project to be successful, however, they also recognize some shortcomings of the project, such as limited wildlife benefits and unanticipated vandalism. Several respondents believe the project could not be replicated today given the legislative changes that have occurred during the past thirty years.

Badger Creek Respondents' Perceptions and Definitions of Success. Over 93% of the respondents were very satisfied with the partnership as a way to address the conservation needs in their watershed. One respondent was dissatisfied due to a perceived lack of attention to the upper watershed.

Over 53% of the respondents would not change anything about the way the partnership operated. One respondent implied changes were needed but did not make specific recommendations. Six of the respondents identified three areas for improvements. They placed the most emphasis on more and better communication, including meetings. They expressed a desire for more consensus and more resource studies for resource management decision-making purposes.

Respondent satisfaction focused on the diversity of the partnership and working with that diversity. Agency personnel appreciated the opportunity to work with and learn from landowners and other agencies. Several respondents appreciated the opportunity to be involved in the (1) group process, (2) decision-making, and (3) sharing of new perspectives which resulted in a break from traditional budget and agency driven projects. Resource improvements were also identified as important to respondents' satisfaction.

Partnerships were perceived by the respondents as the best way to address the management and use of diverse resource areas. The respondents emphasized education and a high level of private sector involvement as necessary and desirable. Respondents observed

"dramatic changes in attitudes" as the partnership developed and identified this as a significant measure of success (Badger Creek Interview, 1997). The improvements to water quality and riparian areas as well as forage and livestock increases were identified as elements of project success. The increases and changes in wildlife populations were also interpreted as successes, however, the elk numbers were perceived as having exceeded the current carrying capacity. Respondents indicated that wildlife management strategies need closer attention and modification to maintain accomplishments and realize the remaining goals.

Muddy Creek Respondents' Perceptions and Definitions of Success. One hundred percent of the respondents were satisfied with the partnership as a way to address conservation needs in their watershed. Respondents focused on cooperation, consensus, and trust within their diverse group as contributing to their satisfaction. Respondents were also satisfied with the management change from government driven to locally-led. Sharing of resources and conservation treatments across land ownerships were identified as contributing to respondent satisfaction. Resource improvements, particularly related to water quality, were tangible elements of satisfaction.

Almost 43% of the respondents would not change anything about the way the partnership operated. Half of the respondents identified earlier involvement of more land owners as important to future efforts. Incentives for private land owner involvement were suggested. These included more recognition of private efforts, education of the public on behalf of private land owners, land exchanges, and game and fish licenses for private land use. Competing priorities within the agencies, vandalism, and public access problems were identified as areas for improvement.

Partnership efforts like Muddy Creek's are seen by the respondents as an effective way to ease tensions between livestock and wildlife interests. Education, communication, and training in the Coordinated Resource Management Planning process were identified as success elements that should be shared with other groups. The extensive development of wetlands, overlooking of political boundaries, restraint of personal differences, and efficient use of funds were also used to describe the success of this partnership.

Development of a Guide for Successful Public/Private Conservation Partnerships

The differences in characteristics of success between the success model and the case studies are attributed to the inclusion of private land owner perceptions. The results of the case studies, consequently, are considered to have broader applicability for a variety of public/private partnerships. The eight characteristics that were strongly and consistently present offer a basis for a revised guide to success (Table 9.). Two potential applications of this guide are as a developmental tool and/or an evaluation tool.

Table 9. A Guide to Successful Public/Private Conservation Partnerships.

1. Begin with **leadership**.
2. Recruit **active participation** from a wide variety and as many partners as possible.
3. Identify and secure **funding**.
4. Be **clear and consistent** with all **communications**.
5. Allow **adaptability and flexibility** throughout partnership functioning.
6. Establish **common goals** and
7. Build **trust**
8. Through **consensus decision-making**.

As a developmental tool, the characteristics of the guide can be viewed as building blocks beginning with leadership and active participation. The order of establishment of the remaining six characteristics would be determined by the partnership. This recommendation is based on the combined percentages of presence of the characteristics. Partnerships should be able to more effectively address conservation needs and problems when these eight characteristics are positively addressed.

As an evaluation tool, the characteristics of the guide can be compared to the current functioning of a partnership. Those characteristics found to be missing or weakly applied may offer insights into a partnership's weaknesses.

It is important to remember that there are more characteristics of success than the eight characteristics in the proposed guide. Sixty-five individual characteristics were originally identified as contributing to partnership success. Fifty-two of these characteristics were interpreted as having limited applicability since they were identified by three or fewer sources. This limitation reflects the differences in the natural and human resources that individualize each partnership. The eight characteristics of the proposed guide for success offer a sound starting point for partnerships, not a universal remedy for their problems. As partnerships test the proposed guide, they may find some of the other fifty-two characteristics useful to their particular efforts.

Measuring Success Qualitatively and Quantitatively

Six open-ended questions addressing qualitative issues were used during data collection (Appendix C). Assessments of qualitative measures were made on the basis of responses to these six questions. Respondents in all three case studies identified many qualitative aspects of success, particularly through explanations of their satisfaction with the partnerships. In all three case studies, respondents expressed desire for and satisfaction with working with other people and, particularly, with people having different perspectives and interests. Six of the eight characteristics identified as being strongly present in the combined results are also of a qualitative nature:

1. Existence of leadership
2. Active participation by a wide variety and large number of partners
3. Adaptable, flexible leadership/process
4. Trust
5. Clear, consistent communication
6. Consensus

These findings indicate that qualitative measures play a significant role in partnership success. A true measure of success should include these qualitative aspects. Using the qualitative and quantitative success measures previously identified in the second limitation of model development, the success of the three case studies can be defined quantitatively with the level of goal accomplishment and qualitatively with the presence of success characteristics and level of participant satisfaction. These measurements can be expressed in percentages that are combined and averaged for a comprehensive determination of success (Table 10.).

Additional measures of success may lie in the futures of the three projects. The experiences of the Vernon Creek partnership have given rise to the Clover Creek Watershed effort, located downstream of Vernon. The Badger Creek partnership is enthusiastic about finishing their project and participating in other such efforts. The Muddy Creek partnership is considering an expansion of their natural resource management that would incorporate new issues and new partners.

Table 10. Comprehensive measure of partnership success.

Measures of Partnership Success	Vernon	Badger	Muddy
% of model characteristics with strong presence	76.9%	61.5%	76.9%
% of plan accomplished	100%	75%	>50%
% participant satisfaction with partnership	91.7%	93.3%	100%
Estimated level of success	89.5%	76.6%	>75.6%

Conclusions

An initial model of the effectiveness of public/private conservation partnerships was derived from literature sources. The model described levels of effectiveness based on partnership functioning and conservation goals. The thirteen characteristics of the success model summarized multiple descriptions of successful partnerships. Failed partnerships, on the other hand, were summarized as those that could not achieve an effective, working relationship nor the desired conservation goals.

The success model was based on characteristics identified by agencies and organizations while the case study results combined individual private land owner perceptions

with those of agencies and organizations. The differences between the model and the case studies provided a way to broaden the applicability of the proposed guide to success.

The selection of watershed partnerships using different programmatic approaches was also intended to enhance applicability of the proposed guide. There are several limitations, however, to this study. First, the ages of the case studies potentially introduce some bias since recent legislation and increased public involvement have altered the historic composition of watershed partnerships. Second, the sample of the partnerships and case studies required judgmental selections. Ideally, all of the partners would have been interviewed and more partnerships would have been examined. In determining the composition of the samples and selecting the projects for study, an emphasis was placed on a level of diversity based on the authors' experience with the NRCS. A third limitation occurred in the development of the questionnaire. The decision to pre-test only with individuals associated with NRCS, CDs, and RC&Ds had the potential to bias the study results.

The results of this research revealed eight characteristics with the potential to contribute to partnership success in a variety of situations: (1) the existence of leadership; (2) active participation from a wide variety and large number of partners; (3) adequate and shared funding; (4) clear and consistent communication; (5) adaptable and flexible leadership; (6) common goals; (7) trust; and (8) consensus. These characteristics provide a starting point for partnerships; they do not provide a cure-all for partnership problems.

Several tantalizing directions of research were indicated by this study. It appears that private land owner involvement does affect the success of watershed partnerships. Qualitative measures may be very important in accurately determining the success of partnerships. Such measures should be given as much emphasis as quantitative measures during assessment. Within NRCS partnerships, differences between private and public perceptions can affect success but may have a lesser impact when the eight success characteristics identified by this research are strongly present. These eight characteristics appear to provide a basis for cooperation that may increase the success of conservation partnerships.

Additional research needs include field testing of the proposed success guidance by new and existing partnerships. The refinement of qualitative measures of success so that equitable consideration can be given to both qualitative and quantitative determinants during project assessment also offers research potential.

Public/private partnerships addressing conservation problems on a watershed scale are expected to continue increasing. Successful partnerships between the public and private sectors offer an effective and efficient method to achieve conservation goals. This research was done in order to provide a more concise method of forming successful public/private partnerships.

APPENDIX A.

SIXTY-FIVE CHARACTERISTICS OF SUCCESSFUL PARTNERSHIPS

PRIMARY CHARACTERISTICS:	**Frequency**	**# of Sources**
1. Active participation by a wide variety and large number of partners	29	17
2. Shared risks, rewards, credit	9	8
3. Commitment	7	5
4. A variety and number of people to do the work	10	8
5. Money, adequate and shared	9	6
6. Regular communication	8	8
7. Clear, consistent communication	6	5
8. Common goals	16	11
9. Consensus	14	12
10. Local authority	5	5
11. Trust	9	7
12. Adaptable, flexible leadership/process	13	10
13. Existence of leadership	4	4

SECONDARY CHARACTERISTICS:	**Frequency**	**# of Sources**
14. Available technology	3	3
15. Coordination of resources	3	3
16. Scale of project	3	3
17. Clear roles & responsibilities -	3	3
18. Positive public perception -	3	3
19. Education	3	3
20. Prioritize objectives	3	2
21. Attainable objectives	2	2
22. Clear objectives	3	2
23. Coordinated decisions	3	3
24. Written solutions to problems	3	3
25. Credibility	2	2
26. Build Relationships	4	2
27. Unbiased leadership	3	2
28. Leadership not turf-related	2	2
29. Local origin of leadership	2	2

TERTIARY CHARACTERISTICS:	**Frequency**	**# of Sources**
30. Planning team as small as practical	1	1
31. Use of work group, task force, etc.	1	1
32. Attitudes of enthusiasm, high expectations	1	1
33. Honest treatment of landowners	1	1
34. Reliability	1	1
35. Form networks of supporting institutions	1	1
36. Build public support	1	1
37. Transfer of technology	1	1
38. Focus on technological targets & constituencies	1	1
39. Practical resource plans	1	1
40. Tangible objectives	1	1
41. Viable vision	1	1
42. Specific objectives	1	1
43. Provide benefits to local people	1	1
44. Meet local needs	1	1
45. Effective actions and tangible results	1	1
46. Decisions recorded in plan	1	1
47. Consider advantage and disadvantages	1	1
48. Based on sound science	1	1
49. Emphasis on implementation from beginning	1	1
50. Process to prioritize watersheds	1	1
51. Plan holistically	1	1
52. Plan area as a system	1	1
53. Intelligent preserve selection and design	1	1
54. Based on sound conservation need	1	1
55. Conflicts dealt with openly	1	1
56. Problem-solving through public participation	1	1
57. Foster scientific research	1	1
58. Employ what you learn	1	1
59. Focus on individuals, hands-on activities	1	1
60. Regional agency as mediator	1	1
61. Shared leadership	1	1
62. Pragmatic leadership, no rigid ideology	1	1
63. Permanence of actions	1	1
64. Evaluate by more effective methods than "acres enhanced or restored"	1	1
65. Evaluate results against goals and alternatives	1	1

APPENDIX B.

THREE CASE STUDY PARTNERSHIPS

VERNON CREEK PARTNERSHIP	
Private Interests:	26 signed plans on private lands Vernon Soil Conservation District Vernon Irrigation Company
Public Interests:	5 Federal agencies 6 State agencies 1 County government
Total Interests:	40
30% Sample:	12
50/50:	6 private, 6 public
Sampled Private Interests:	4 private landowners Vernon Soil Conservation District Vernon Irrigation Company
Sampled Public Interests:	3 Federal agencies (SCS, USFS, BLM)* 2 State agencies (Wildlife, Water Resources)** Tooele County

* Soil Conservation Service (SCS)
U. S. Forest Service (USFS)
Bureau of Land Management (BLM)

**While there were more state than federal agencies involved, only two state agencies had anyone available who remembered the project.

BADGER CREEK PARTNERSHIP

Private Interests:	33 private landowners Fremont Soil Conservation District Teller Park Soil Conservation District Upper Arkansas Soil Conservation District Sangre de Cristo RC&D Council Colorado Trout Unlimited South East Colorado Water Conservancy District Upper Arkansas Council of Governments
Public Interests:	5 Federal agencies 4 State agencies 2 County governments
Total Interests:	51
30% Sample:	15
50/50:	8 private, 7 public*
Sampled Private Interests:	Fremont Soil Conservation District Sangre de Cristo RC&D Council Colorado Trout Unlimited 3 private landowners with conservation plans 2 private landowners without conservation plans
Sampled Public Interests:	Park County 3 Federal agencies (SCS, USFS, BLM)** 3 State agencies (Wildlife, Forest, Land Board)

*The odd sample number was weighted to private interests due to a perceived lack of private landowner representation in the literature.

** Soil Conservation Service (SCS)
U. S. Forest Service (USFS)
Bureau of Land Management (BLM)

MUDDY CREEK PARTNERSHIP

Private Interests:	13 private landowners with conservation plans 1 private landowner without a conservation plan Little Snake River Conservation District Saratoga-Encampment-Rawlins Conservation Dist. Wyoming Trout Unlimited Wyoming Chapter Sierra Club Water for Wildlife Rocky Mountain Elk Foundation Wyoming Natural Diversity Database (TNC) Wyoming Wildlife Federation Wyoming Outdoor Council Wyoming Riparian Association National Fish and Wildlife Foundation Ducks Unlimited
Public Interests:	7 Federal agencies 7 State agencies 2 University departments 1 County government 1 City government 1 Federal/State liaison
Total Interests:	45
30% Sample:	14
50/50:	7 private, 7 public
Sampled Private Interests:	Little Snake River Conservation District Rocky Mountain Elk Foundation Wyoming Outdoor Council 3 private landowners with conservation plans 1 private landowner without a conservation plan
Sampled Public Interests:	Carbon County 3 Federal agencies (NRCS, USEPA, BLM)* 2 State agencies (Game and Fish, Agriculture) City of Rawlins

* Natural Resources Conservation Service (NRCS)
U. S. Environmental Protection Agency (EPA)
Bureau of Land Management (BLM)

APPENDIX C.

INTERVIEW QUESTIONS

How long have you lived in the area?

How long have you been involved with agricultural or natural resource activities?

What was your interest in the project?

1. Everyone actively participated in the project.
   Agree Neutral Disagree

2. The partnership included everyone who was interested in the project
   Agree Neutral Disagree

3. The partnership had a variety of talents and skills to accomplish the project.
   Agree Neutral Disagree

4. The partnership was able to get complete agreement when making decisions.
   Agree Neutral Disagree

5. Everyone was involved in deciding what would be done on the project.
   Agree Neutral Disagree

6. Goals and objectives for the project were decided by everyone.
   Agree Neutral Disagree

7. Most of the work on the project was done by a few individuals.
   Agree Neutral Disagree

8. There were many problems to overcome in order to complete the project.
   Agree Neutral Disagree

9. The partnership tried a variety of ways to solve problems encountered on the project.
   Agree Neutral Disagree

10. The partnership met at least once a month to work on the project.
    Agree Neutral Disagree

11. I was always aware of project developments.
    Agree Neutral Disagree

12. Everyone contributed equitably to the project.
    Agree Neutral Disagree

13. Everyone was credited for the accomplishments of the project.
    Agree Neutral Disagree

14. I had serious concerns about the project.
    Agree Neutral Disagree

15. My concerns were addressed fairly by the partnership.
    Agree Neutral Disagree

16. The partnership had the ability locally to make all project decisions.
    Agree Neutral Disagree

17. There was adequate funding for the project.
    Agree Neutral Disagree

18. Funding was from public and private sources.
    Agree Neutral Disagree

19. Information was always provided in a clear and consistent manner.
    Agree Neutral Disagree

20. There was adequate leadership for the partnership.
    Agree Neutral Disagree

21. Leadership was well-coordinated.
    Agree Neutral Disagree

22. Leadership was facilitative.
    Agree Neutral Disagree

Are you satisfied with the partnership as a way to address conservation needs in this watershed? Why?

Would you change anything about the way the partnership operated? If yes, what?

Is there anything I haven't asked you about that you would like to add?

APPENDIX D.

AGREEMENT OF PRESENCE IN THREE NRCS WATERSHED PARTNERSHIPS

1. **Did everyone actively participate in the project?**

	Agree	Neutral	Disagree	%Agreed
Vernon	10	2	0	83.3%
Badger	9	2	4	60.0%
Muddy	10	0	4	71.4%
TOTAL	29	4	8	70.7%

2. **Did the partnership include everyone who was interested in the project?**

	Agree	Neutral	Disagree	%Agreed
Vernon	12	0	0	100.0%
Badger	15	0	0	100.0%
Muddy	14	0	0	100.0%
TOTAL	41	0	0	100.0%

3. **Did the partnership have a variety of talents and skills to accomplish the project?**

	Agree	Neutral	Disagree	%Agreed
Vernon	12	0	0	100.0%
Badger	15	0	0	100.0%
Muddy	14	0	0	100.0%
TOTAL	41	0	0	100.0%

4. **Was the partnership able to get complete agreement when making decisions?**

	Agree	Neutral	Disagree	%Agreed
Vernon	6	4	2	50.0%
Badger	5	4	6	33.3%
Muddy	10	2	2	71.4%
TOTAL	21	10	10	51.2%

5. Was everyone involved in deciding what would be done on the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	9	2	1	75.0%
Badger	10	3	2	66.7%
Muddy	10	3	1	71.4%
TOTAL	29	8	4	70.7%

6. Were goals and objectives for the project decided by everyone?

	Agree	Neutral	Disagree	%Agreed
Vernon	11	1	0	91.7%
Badger	12	2	1	80.0%
Muddy	13	1	0	92.9%
TOTAL	36	4	1	87.8%

7. Was most of the work on the project done by a few individuals?

	Agree	Neutral	Disagree	%Agreed
Vernon	6	3	3	50.0%
Badger	9	1	5	60.0%
Muddy	6	0	8	42.9%
TOTAL	21	4	16	51.2%

8. Were there many problems to overcome in order to complete the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	11	1	0	91.7%
Badger	9	2	4	60.0%
Muddy	8	2	4	57.1%
TOTAL	28	5	8	68.3%

9. Did the partnership try a variety of ways to solve problems encountered on the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	8	3	1	66.7%
Badger	14	0	1	93.3%
Muddy	12	2	0	85.7%
TOTAL	34	5	2	82.9%

10. Did the partnership meet at least once a month to work on the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	8	3	1	66.7%
Badger	2	1	12	13.3%
Muddy	8	3	3	57.1%
TOTAL	18	7	16	43.9%

11. Were you always aware of project developments?

	Agree	Neutral	Disagree	%Agreed
Vernon	10	1	1	83.3%
Badger	10	0	5	66.7%
Muddy	13	0	1	92.9%
TOTAL	33	1	7	80.5%

12. Did everyone contribute equitably to the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	8	2	2	66.7%
Badger	7	3	5	46.7%
Muddy	5	2	7	35.7%
TOTAL	20	7	14	48.8%

13. Was everyone credited for the accomplishments of the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	10	2	0	83.3%
Badger	14	1	0	93.3%
Muddy	12	2	0	85.7%
TOTAL	36	5	0	87.8%

14. Did you have serious concerns about the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	7	1	4	58.3%
Badger	7	0	8	46.7%
Muddy	7	0	7	50.0%
TOTAL	21	1	19	51.2%

15. Were your concerns addressed fairly by the partnership?

	Agree	Neutral	Disagree	%Agreed
Vernon	9	3	0	75.0%
Badger	11	3	1	73.3%
Muddy	13	1	0	92.9%
TOTAL	33	7	1	80.5%

16. Did the partnership have the ability locally to make all project decisions?

	Agree	Neutral	Disagree	%Agreed
Vernon	7	4	1	58.3%
Badger	10	2	3	66.7%
Muddy	9	2	3	64.3%
TOTAL	25	7	9	61.0%

17. Was there adequate funding for the project?

	Agree	Neutral	Disagree	%Agreed
Vernon	12	0	0	100.0%
Badger	12	2	1	80.0%
Muddy	13	0	1	92.9%
TOTAL	37	2	2	90.2%

18. Was funding from public and private sources?

	Agree	Neutral	Disagree	%Agreed
Vernon	9	2	1	75.0%
Badger	12	2	1	80.0%
Muddy	14	0	0	100.0%
TOTAL	35	4	2	85.4%

19. Was information always provided in a clear and consistent manner?

	Agree	Neutral	Disagree	%Agreed
Vernon	10	1	1	83.3%
Badger	14	1	0	93.3%
Muddy	13	0	1	92.9%
TOTAL	37	2	2	90.2%

20. Was there adequate leadership for the partnership?

	Agree	Neutral	Disagree	%Agreed
Vernon	12	0	0	100.0%
Badger	15	0	0	100.0%
Muddy	14	0	0	100.0%
TOTAL	41	0	0	100.0%

21. Was leadership well-coordinated?

	Agree	Neutral	Disagree	%Agreed
Vernon	11	1	0	91.7%
Badger	15	0	0	100.0%
Muddy	14	0	0	100.0%
TOTAL	40	1	0	97.6%

22. Was leadership faciliative?

	Agree	Neutral	Disagree	%Agreed
Vernon	7	5	0	58.3%
Badger	12	3	0	80.0%
Muddy	13	0	1	92.9%
TOTAL	32	8	1	78.0%

Notes

[1] Anderson and Baum, 1987; Anderson, 1990; Bendick, 1993; Brown, C. N., 1993; Brown, W. Lee., 1993; Cleary, 1988; Coyle, 1995; Daly, 1994; Davis, 1985; Dennis, 1993; Dudal, 1980; Endicott, 1993b; Endicott, 1993c; Gensemer and Yamaguchi, 1985; Graziano, Massengale, and Updike, 1993; Havercamp, Torell, and Evans, 1993; Hoban, 1992b; Hoban, et al., 1995; Hoffman, 1994; Huillet, et al., 1990; Journal of Soil & Water Conservation, 1982; Long and Arnold, 1995; McNeely, 1992; Moote, 1995; Murray, 1992; Poole, 1993; Thompson, 1993; Trauger, et al., 1995; Wanberg and Anderson, 1994; Zube, 1992

[2] Anderson and Baum, 1987; Anderson, 1990; Brown, C. N., 1993; Brown, W., 1993; Cleary, 1988; Coyle, 1995; Endicott, 1993b; Gensemer and Yamaguchi, 1985; Graziano, et al., 1993; Hoban, 1992b; Hoban, et al., 1995; Hoffman, 1994; Huillet, et al., 1990; Long and Arnold, 1995; Trauger, et al, 1995

[3] Anderson, 1990; Brown, W., 1993; Coyle, 1995; Endicott, 1993b; Graziano, et al., 1993; Hoban, 1992b; Hoban, et al., 1995; Hoffman, 1994; Huillet, et al., 1990; Long and Arnold, 1995; Poole, 1993; Thompson, 1993; Trauger, et al, 1995

[4] Anderson and Baum, 1987; Bendick, 1993; Brown, C. N., 1993; Brown, W., 1993; Cleary, 1988; Coyle, 1995; Dennis, 1993; Endicott, 1993b; Gensemer and Yamaguchi, 1985; Graziano, et al., 1993; Hoban, et al., 1995; Hoffman, 1994; Huillet, et al., 1990; Long and Arnold, 1995; Poole, 1993; Trauger, et al, 1995

[5] Anderson and Baum, 1987; Brown, C. N., 1993; Brown, W., 1993; Dennis, 1993; Endicott, 1993b; Graziano, et al., 1993; Hoban, 1992b; Hoban, et al., 1995; Huillet, et al., 1990; Long and Arnold, 1995; Thompson, 1993; Trauger, et al, 1995

[6] Anderson and Baum, 1987; Anderson, 1990; Bendick, 1993; Brown, C. N., 1993; Cleary, 1988; Coyle, 1995; Endicott, 1993b; Gensemer and Yamaguchi, 1985; Graziano, et al., 1993; Hoban, 1992b; Hoffman, 1994; Huillet, et al., 1990; Long and Arnold, 1995; Trauger, et al, 1995

[7] Anderson and Baum, 1987; Brown, W., 1993; Cleary, 1988; Endicott, 1993b; Gensemer and Yamaguchi, 1985; Graziano, et al., 1993; Hoban, 1992b; Hoffman, 1994; Long and Arnold, 1995; Thompson, 1993; Trauger, et al, 1995

[8] Anderson and Baum, 1987; Anderson, 1990; Coyle, 1995; Endicott, 1993b; Gensemer and Yamaguchi, 1985; Hoban, 1992b; Huillet, et al., 1990; Long and Arnold, 1995; Trauger, et al, 1995

[9] American Farmland Trust, 1984; Bennett, 1939, 1946; Durban, 1987, 1988; Helms, 1985, 1992; Johnson, 1995; Journal of Soil and Water Conservation, 1981, 1994; Last, 1981;

Merrill, 1983; Nacht, 1981; Nowak, 1985; Sampson, 1981; Scaling, 1985; Shea, 1995; Simms, 1970; Stoddard, 1987

[10] Hicks, L., 1996; Hicks, L., Warren, Hicks, C., 1996; Little Snake River Conservation District and Bureau of Land Management, 1995

References

Anderson, E. William, and Robert C. Baum. 1987. "Coordinated resource management planning: Does it work?" Journal of Soil and Water Conservation, Vol. 42, No. 3, pp. 161-166.

Anderson, E. William. 1990. "Tips on Initiating a Coordinated Plan." Rangelands, Vol. 12, No. 5, pp. 262-263.

American Farmland Trust. 1984. *Soil Conservation in America: What do we have to lose?* Specialty Binding and Printing Co., Shepherdstown, WV. 133 pp.

Badger Creek Interview, 1997. Personal communication.

Badger, D. D., W. W. Payne, and N. R. Cook. 1966. "Community Benefits in the Upper Wildhorse Creek Watershed." Journal of Soil and Water Conservation, Vol. 21, No. 2, pp. 45-46.

Bendick, Robert L., Jr. 1993. "State Partnerships to Preserve Open Space: Lessons from Rhode Island and New York." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 149-171.

Bennett, Hugh H. 1939. *Soil Conservation.* McGraw-Hill Book Co., New York, NY. 993 pp.

Bennett, Hugh H. 1946. "A National Program of Soil Conservation." Journal of Soil and Water Conservation, Vol. 1, No. 1, pp. 21-43.

Bhattacharyya, Gouri K. and Richard A. Johnson, 1977. *Statistical Concepts and Methods.* John Wiley and Sons, New York, NY. 639 pp.

Bouchard, Carl E., et al. 1997. "Sustainable Rural Development and Natural Resource Land Use: A Model for Effective Change." National Rural Development Partnership Report, unpublished, 4 pp.

Brown, Christopher N. 1993. "National Park Service Partnerships Beyond the National Parks." in *Land Conservation Through Public/Private Partnerships,* ed. Eve Endicott, Island Press, Washington, D. C., pp. 129-146.

Brown, Warren. 1993. "Public/Private Land Conservation Partnerships in and Around National Parks." in *Land Conservation Through Public/Private Partnerships*, ed. Eve Endicott, Island Press, Washington, D. C., pp. 104-128.

Cleary, C. Rex. 1988. "Coordinated resource management: A planning process that works." Journal of Soil and Water Conservation, Vol. 43, No. 2, pp. 138-139.

Clements, Kathryn, Emily Green, and Jim Kleinschmit. 1997. "Farmer-Led Watershed Initiatives: Success Stories." in *Report from the Second Annual Farmer-Led Watershed Initiatives Conference, 1997.* Institute for Agriculture and Trade Policy, Minneapolis, MN. 30 pp.

Coyle, Kevin. 1995. "Watershed Conservation in America: The Swift River Principles." River Voices, Vol. 6, No. 3, pp. 4-5.

Daly, Sean. 1994. "Watersheds: A Look at the Big Picture." Erosion Control, Vol. 1, No. 5, pp. 32-37.

Davis, R. M. 1985. "Conservation: A matter of motivation." Journal of Soil and Water Conservation, Vol. 40, No. 5, pp. 400-402.

Dennis, Pamela M. 1993. "A State Program to Preserve Land and Provide Housing: Vermont's Housing and Conservation Trust Fund." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 172-194.

Dudal, R. 1980. "An Evaluation of Conservation Needs." in *Soil Conservation: Problems and Prospects.* edited by R. P. C. Morgan. John Wiley & Sons, New York, NY. 576 pp.

Durban, Clarence. 1988. "Conservation planning: A local perspective." Journal of Soil and Water Conservation, Vol. 43, No. 1, pp. 44-47.

Durban, Clarence. 1987. "Meeting the challenge." Journal of Soil and Water Conservation, Vol. 42, No. 2, pp. 70-71.

Endicott, Eve. 1993a. "Introduction." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 3-11.

Endicott, Eve. 1993b. "Preserving Natural Areas: The Nature Conservancy and Its Partners." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 17-42.

Foddy, William. 1993. *Constructing Questions for Interviews and Questionnaires: Theory and Practice in Social Research.* Cambridge University Press, New York, NY. 228 pp.

Fowler, Floyd J., Jr. 1984. *Survey Research Methods.* Sage Publications, Beverly Hills, CA. 159 pp.

Gensemer, Miriam Koral and Marianne Yamaguchi. 1985. "Successful water quality planning: An area-wide perspective." Journal of Soil and Water Conservation, Vol. 40, No. 1, pp. 76-78.

Gimblett, H. R., 1997. *Simulating Recreation Behaviour in Complex Wilderness Landscapes Using Spatially-Explicit Autonomous Agents.* Unpublished Ph.D. dissertation, University of Melbourne, Parkville, Victoria, 3052 Australia.

Graziano, Angela, Tom Massengale, and Jerry Updike. 1993. "Preserving Wildlife Habitat: The U. S. Fish and Wildlife Service and the North American Waterfowl Management Plan." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 85-103.

Hatfield, Doc and Connie. 1986. "Conflicts - Let's Try to Understand Them." Rangelands, Vol. 8, No. 1, pp. 5-7.

Havercamp, Michael J., David J. Torell, and William P. Evans. 1993. "Using PGA for consensus building in public land disputes." Journal of Soil and Water Conservation, Vol. 48, No. 2, pp. 90-93.

Heady, Earl O. 1951. "Efficiency in Public Soil-Conservation Programs." Journal of Political Economy, Vol. LIX, No. 2, pp. 47-60.

Helms, Douglas. 1985. "The Civilian Conservation Corps: Demonstrating the value of soil conservation." Journal of Soil and Water Conservation, Vol. 40, No. 2, pp. 184-188.

Helms, Douglas. 1992. *Readings in the History of the Soil Conservation Service.* Washington, D.C., 174 pp.

Hicks, L., 1996. *Muddy Creek CRM Winter Minutes.* Little Snake River Conservation District, Baggs, WY. 3 pp.

Hicks, Larry, 1997. Personal communication.

Hicks, Larry, Andy Warren, and Cheryl Hicks, 1996. "Upper Muddy Creek CRM." in *Sharing Common Ground on Western Rangelands: Proceedings of a Livestock/Big Game Symposium.* Comp. Keith Evans. U. S. Department of Agriculture, Odgen, UT. pp. 12-14.

Hoban, Thomas J., IV, et al. 1995. *Building Local Partnerships: A Guide for Watershed Partnerships.* Conservation Technology Information Center, W. Lafayette, IN. 12 pp.

Hoban, Thomas J., IV. 1992. "Strategies for building a conservation team." Journal of Soil and Water Conservation, Vol. 47, No. 4, pp. 294-297.

Hoffman, Chuck. 1994. "Does Anybody Really Do Watershed Management?" River Voices, Vol. 5, No. 2, pp. 10-13.

Houghton, Ruth M. 1979. "The PEOPLE of a Nevada Grazing District." Rangelands, Vol. 1, No. 2, pp. 47-48.

Huillet, Christian, Pieter Van Dijk, and Theodore Alter. 1990. *Partnerships for Rural Development.* Organisation for Economic Co-operation and Development, Paris, France. 156 pp.

Johnson, Paul. 1995. "The Watershed Approach in the Natural Resources Conservation Service." in *Opening the Toolbox: Strategies for Successful Watershed Management - Proceedings of the Fourth National Watershed Conference.* National Watershed Coalition, Lakewood, CO. pp. 113-116.

Journal of Soil and Water Conservation. 1981. "Soil conservation problems and practices: A farmer view." Journal of Soil and Water Conservation, Vol. 36, No. 4, pp. 186-193.

Journal of Soil and Water Conservation. 1982. "The politics of making conservation happen, a panel discussion." Journal of Soil and Water Conservation, Vol.37, No. 5, pp. 259-268.

Journal of Soil and Water Conservation. 1994. "Interview with Paul Johnson." Journal of Soil and Water Conservation, Vol. 49, No. 6, pp. 518-520.

Keidel, Jeff, 1994. "Badger Creek Tour." in *The Colorado Conservator*, August, p. 6.

Last, Donald G. 1981. "Urban erosion control: The conservation district role in Wisconsin." Journal of Soil and Water Conservation, Vol. 36, No. 5, pp. 270-274.

Lavigne, Peter. 1995. "Watershed Approaches: What Have We Learned?" River Voices, Vol. 6, No. 3, pp. 1, 5-7.

Little Snake River Conservation District and Bureau of Land Management, 1995. *Muddy Creek CRM: Seeking Common Ground (video).* National Applied Resource Sciences Center.

Long, Frederick J. and Matthew B. Arnold. 1995. *The Power of Environmental Partnerships.* Dryden Press - Harcourt Brace College Publishers, Orlando, FL. 338 pp.

MacGaffey, Neil. 1985. *The Long-Term Effectiveness of Soil Conservation Efforts on Three Wisconsin P. L. 566 Projects.* Master of Science Thesis, University of Wisconsin-Madison. 67 pp.

McNeely, J. A., 1992. "Partnerships for Conservation: An Introduction." in *Expanding Partnerships in Conservation.* Ed. J.A. McNeely. Island Press, Washington, D. C. pp. 1-10.

Merrill, John L. 1983. "Grazing Land Stewardship - Our Performance and Our Image." Rangelands, Vol. 5, No. 3, pp. 109-111.

Mitchell, Myrl D. 1988. "Implementing conservation compliance and sodbuster: A private view." Journal of Soil and Water Conservation, Vol. 43, No. 1, p. 26.

Moote, Ann. 1995. *Changing Models of Administrative Decision-Making: Public Participation in Public Land Planning.* Masters Thesis, University of Arizona, Tucson, AZ. 129 pp.

Murray, Will, 1992. "Lessons from 35 Years of Private Preserve Management in the USA: The Preserve System of the Nature Conservancy." in *Expanding Partnerships in Conservation.* Ed. J.A. McNeely. Island Press, Washington, D. C. pp. 197-205.

Nacht, Steve J. 1981. "New uses of old tools to conserve soil." Journal of Soil and Water Conservation, Vol. 36, No. 2, pp. 60-61.

Napier, Ted L., Sam E. McCarter, and Julia R. McCarter. 1995. "Willingness of Ohio land owner-operators to participate in a wetlands trading system." Journal of Soil and Water Conservation, Vol. 50, No. 6, pp. 648-656.

Natural Resources Conservation Service, 1997. Tooele Field Office Reports, Tooele, UT.

Nowak, Peter J. 1985. "The leadership crisis in conservation districts." Journal of Soil and Water Conservation, Vol. 40, No. 5, pp. 420-425.

Nowak, Pete. 1992. "Of what value are values in resource management?" Journal of Soil and Water Conservation, Vol. 47, No. 4, pp. 356-359.

Poole, William. 1993. "Preserving Urban and Suburban Gardens and Parks: The Trust for Public Land and Its Partners." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 61-82.

Richardson, Kimberly J. and Mark W. Brunson. 1997. "Perceived Fairness and Effectiveness of Rangeland Collaborative Partnerships." Paper presented at the 50th Annual Meeting of the Society for Range Management, Rapid City, SD. 2 pp.

Romm, Jeff. 1995. "Tension between the science and the management of watersheds: The need for a public science." in *Watersheds '94: Proceedings of the Fifth Biennial Watershed Management Conference,* University of California, Davis, CA. pp. 83-85.

Sampson, R. Neil. 1981. *Farmland or Wasteland - A Time to Choose.* Rodale Press, Emmaus, PA. 422 pp.

Sampson, R. Neil. 1992. "Achieving public values on private land." Journal of Soil and Water Conservation, Vol. 47, No. 5, pp. 360-364.

Sampson, R. Neil. 1997. "Living in YOUR Watershed." Keynote address, Fifth National Watershed Conference, Reno, NV. 6 pp.

Sangre de Cristo RC&D Council, 1990. *Badger Creek Watershed Project Implementation Plan.* U.S.D.A., Pueblo, CO. 49 pp.

Scaling, Wilson. 1985. "A continuing commitment to conservation service." Journal of Soil and Water Conservation, Vol. 40, No. 5, p. 399.

Shea, Ernest C. 1995. "Soil Conservation Districts in the Watershed Movement." in *Opening the Toolbox: Strategies for Successful Watershed Management - Proceedings of the Fourth National Watershed Conference.* National Watershed Coalition, Lakewood, CO. pp. 65-68.

Simms, D. Harper. 1970. *The Soil Conservation Service.* Praeger Publishers, New York, NY. 238 pp.

Soil Conservation Service, 1985. *The Vernon Watershed Story (video).* Video For Keeps, Salt Lake City, UT. 9.5 minutes.

Sokal, Robert R. and F. James Rohlf, 1981. *Biometry, 2nd Edition.* W. H. Freeman and Company, New York, NY. 859 pp.

Steiner, Frederick R. 1990. *Soil Conservation in the United States - Policy and Planning.* Johns Hopkins University Press, Baltimore, MD. 249 pp.

Stoddard, Glenn M. 1987. "Implementing the conservation title of the Food Security Act: The unfinished agenda." Journal of Soil and Water Conservation, Vol. 42, No. 2, pp. 93-94.

Thompson, Edward, Jr. 1993. "Preserving Farmland: The American Farmland Trust and Its Partners." in *Land Conservation Through Public/Private Partnerships.* Eve Endicott, editor. Island Press, Washington, D. C., pp. 43-60.

Toupal, Rebecca S., 1997. *The Effectiveness of Public/Private Conservation Partnerships As Measured By Common Characteristics of Success.* Unpublished M.L.A. thesis, University of Arizona, Tucson, AZ.

Trauger, David L., et al. 1995. "Partnerships: Innovative strategies for wildlife conservation." Wildlife Society Bulletin, Vol. 23, No. 1, pp. 114-119.

Valentine, John and John Carochi, 1993. "Making a difference: Agencies can, will, do work together to solve nonpoint source pollution problems." Journal of Soil and Water Conservation, Vol. 48, No. 4, pp. 401-406.

Vernon Creek Interview, 1997. Personal communication.

Vernon Soil Conservation District, 1967. *Vernon Watershed - Watershed Work Plan.* Soil Conservation Service, Tooele, UT. 76 pp.

Wanberg, David J. and Paul F. Anderson. 1994. "Coalition building for conservation : the Iowa REAP program. (Iowa Resource Enhancement and Protection)" Journal of Soil and Water Conservation, Vol. 49, No. 4, pp. 343-347.

Wustrow, Jane, 1995a. *Sangre de Cristo RC&D Quarterly Report, April.* Pueblo, CO.

Wustrow, Jane, 1995b. *Sangre de Cristo RC&D Quarterly Report, September.* Pueblo, CO.

Wustrow, Jane, 1996. *Sangre de Cristo RC&D Quarterly Report, February.* Pueblo, CO.

Zube, E. H., 1991. "Partnerships in Parks: History, Policies, and Practices." (unpublished paper). Tucson, AZ

Zube, E. H., 1992. "No Park Is an Island." in *Expanding Partnerships in Conservation.* Ed. J.A. McNeely. Island Press, Washington, D. C. pp. 169-177.