

**Meeting Notes for the Sustainable Rangelands Roundtable (SRR)**  
**San Diego, CA– October 29-30, 2002**  
**Facilitated by Lou Romero, DeLaPorte & Associates, Inc.**

**Welcome Remarks – Tom Bartlett, Roundtable Host/Convener**

Thank you for the level of support and participation you have shown by your attendance at this and previous meetings. During this meeting we hope to complete whole group review of all indicators within the context of the completed 6-Point Framework, finalize the list of potential external reviewers, including contact information, finalize the report outline and agree upon writing assignments and continue working on data set identification and acquisition

**Participant self-introductions – led by Lou Romero, Roundtable Facilitator**

Welcome to the new participants. Participants introduced themselves, answering the following questions:

- Name, organization, position?
- Familiarity with subject matter?
- Familiarity with Roundtable's Progress

*A list of participants can be found in Appendix A.*

**SRR Overview – Tom Bartlett (See Appendix B)**

**Working Group Activity Reports:**

**Scale and Definitions Working Group Reports – Paul Geissler**

Paul presented scale issues to be considered by Criterion Groups while evaluating indicators and data. See Appendix C.)

There will be a Final Review Workshop on the National Report on Sustainable Forests on November 21, 2002. SRR representatives will attend and report back. The report they are presenting is more advanced than the report we plan to produce in 2003.

**Coordination Working Group Report – Duncan Patten**

Duncan described some other indicator efforts that we should consider coordinating with. Coordination team also includes Eric Hyatt, Ted Heintz, Robert Washington-Allen. See Appendix D.

**Outreach Working Group Report and Communication Plan– Lori Hidinger**

Mark Brunson gave a report of the workshop he and Deb Shields put on at the International Meeting for the Association for the Society for Natural Resources. (See Appendix E.)

Lori Hidinger handed out a draft outline of the Communication Plan for review (Appendix F). Feedback due end of November. Input especially needed on Appendices A and B. Volunteers to speak at meetings, conferences, etc. are encouraged and welcomed. December 18 the group will meet to work on this plan.

The SRR Workshop was held at the ESA conference August 4 and, like Marks review, was not detailed enough in many cases. It does give us a clearer idea of how our indicators are perceived.

Dennis Thompson (NRCS) presented to the NACD Public Lands Committee. They wish to be kept informed.

Deen Boe (SRM) presented to Department of Defense. They do not think the process is relevant to them.

### **Description of Whole Group Indicator Review Process – Lou Romero**

#### **Criterion Groups meet for Whole Group Indicator Review**

Legal/Institutional group reviewed Social and Economic Group indicator write up.

Social and economic group reviewed Legal/Institutional indicator write up.

Health and Diversity group reviewed Productive Capacity indicator write up.

Productive Capacity group reviewed Soil and Water indicator write up.

Soil and Water group reviewed Health and Diversity indicator write up.

#### **Lunch Meeting on SRR Report Working Group – John Mitchell**

#### **Whole Group Indicator Review (*Whole group discussion*) – See Appendix G**

#### **Special Session on Name of Ecosystem Health and Diversity Criterion Group –Linda Joyce and Lou Romero**

##### **Linda Joyce presented the issue:**

Why the concern about the term “health”?

1. Reaction at ESA workshop
  - Most of the time was spent on processes that were covered by other groups
  - Bottom line seemed to be that the definition of health is not adequately covered in this group
2. In the RSF equivalent criterion group – indicators 15-17 cover processes, agents, biological components, air pollutants. These issues are not covered by SRR Ecological Health and diversity group.
  - Soil covered in soil/water, nutrients (somewhat covered in Soil/water), recovery mechanisms -?
3. In an ESA report on soil and water and conservation of diversity authors did not use term “health”
4. Health is for humans - difficult to define
5. Dr. Bill Lauenroth in his review of the first manuscript ... did not think the science had coalesced to define the definition of health.

*Those who wished to stay debated the matter. The group has changed its name to Conservation and Maintenance of Plant and Animal Resources on Rangelands.*

#### **Wednesday, October 30, 2002**

#### **Continue Whole Group Indicator Review Process**

#### **Report on Data Matrix Delphi Results – Helen Rowe Appendix H**

**Criterion Groups met to integrate comments from Whole Group Review; FREEZE indicator list in preparation for report writing; finalize writing assignments**

**Lunch Meeting of those involved in SRM Casper Workshop – Bartlett & Rowe**

**Presentation and Discussion on Finalized Report Outline, including detailed chapter outline – John Mitchell and Lou Romero**

*See Appendix I for the report outline.*

**Schedule for writing:**

October 31 – Format finalized

Jan. 14 – Draft report ready for editing

Feb. 14 – Within group review complete

March 1 - Cross group review complete

March 17 - Final version of chapters

March 19 - April 11 external review

April 11 - May 2 – Revise

May 5 - Executive Summary written

May 19 – Rollout of Executive summary

June 1 – Reports submitted to a journal

Materials appropriate for outreach community: brochure, 1 page fact sheet, referred journals special issue of referred journals, books, popular articles, proceedings, outreach groups, (politicians, policy analysts, bureaucrats, agency staffs, scientists, NGOs)

Group input: No ten pager- go with another 4 pager. When is the best time to bring it out for the budget cycle? (What is the objective?)

What are we hoping for with this outreach to the public? –We want to engage policy makers. SRR will discuss this further at the December planning meeting.

**Report on External Reviewer Delphi Results – Helen Rowe (Appendix J)**

**Discussion on Criterion Group Products (Appendix K)**

**Washington D.C. Roundtable Network Meeting – Kristie Maczko**

1. MOU will be up for review; it may be an opportunity to expand to include Rangelands.
2. A link will be made to the new world summit website from our website.
3. SRR is invited to participate in a joint roll out next meeting in August 2003 with RSF – we will decide at the December meeting.
4. Next RN meeting will be in January after the SRR Florida meeting.

Comments:

- MOU will help a more intensive effort for data acquisition; it may allow for a similar institutionalization of data efforts for all roundtables.

- Conversation on how to move forward is congruent between RN and SRR.

**Criterion Groups met for brief discussion and then reported out:**

**Social and Economic Group: John Tanaka**

- Integration of review writing assignments preparations for report writing: done
- How frozen are the indicators? Deleted 1, added 1, combined 2
- General alignment with timeline: assignments have been made, will progress with internal review
- Data set acquisition: data sets assigned as indicator write ups
- Reviewers: Tom Quigley (USFS research), Neil Rimbey (U of Idaho), Ray Rasker (Sonoran Institute), Pam Jakes (USFS)
- Alternates: Wendy Favinger (BLM; alt for Quigley), Larry Van Tassell (U of Idaho; alt for Rimbey), Lori Hunter (Colorado University; alt for Jakes)

**Plants and Animals: Linda Joyce**

- Integration of review writing assignments preparations for report writing: done
- How frozen are the indicators? 10 indicators
- Data set acquisition: will do
- General alignment with timeline:

Dec. 16 Text revision/database identification

Jan 14 Indicator 6 point write ups and data matrix finalized

Feb 2 Internal review complete

Feb 14 Revision complete

Feb15 Cross group review

March 1 Review complete

March 18 Revision complete

- Reviewers: Al Steuter, Stephen Talbot, Winne Kessler
- Recommended Johanna Wald and Neil West for overall reviews

**Soil and Water: David Pyke**

- Integration of review writing assignments preparations for report writing - incorporated
- How frozen are the indicators? Writing assignments have been allocated.
- Data set acquisition – Hope to finish by January for those already framed.
- General alignment with timeline - Similar to Plant/Animal except for those indicators not already framed.
- Reviewers: Soil: Steven Leonard, Dave Breshears; Water: Terry Reese (USGS, Carson City), Karl Gebhart (BLM, Boise)
- Alternates: Soil: Jeff Herrick; Water: Robert Goo (EPA, Washington DC)

**Productive Capacity: Gary Evans**

- Integration of review writing assignments preparations for report writing: integrated
- How frozen are the indicators? Assignments made.
- Data set acquisition: know what needs to be done
- General alignment with timeline: far behind, but know are headed in the right direction
- Reviewers: Johnson, James Bartoleme, Stubbendich, Dick Hart

- Alternates: Steve Archer, McMahon

### **Legal Institutional Framework – Tom Lustig**

- Integration of review writing assignments preparations for report writing – began, but more to do
- General alignment with timeline – shooting for the general goal of framing the 6-point by January
- Data set acquisition – not that far along yet
- Reviewers: Ray Huffaker (Washington State University [huffaker@wsu.edu](mailto:huffaker@wsu.edu)), Jon Erickson (University of Vermont), Deb Donahue (University of Wyoming), Dr. Jay O’Laughlin (University of Idaho Policy Analysis Group)
- Alternates: Dr Thad Box (emeritus, Logan, Utah), Dr. JoAnna Endeter-Wada (Utah State)

### **How well have we met our objectives? Lou Romero**

1. Complete review of indicators within context of 6 point framework
2. Finalize list of external reviewers
3. Finalize report outline; writing assignments
4. Continue working on data set identification and acquisition

Good and engaging way to cover whole group review

Regarding #3, David Pyke provided the following synthesis of steps to finish a report by May 2003:

#### **Status Report and Data Gaps for May 2003 Rollout**

- Prepare 6-point framework for each indicator so that reviewers can answer the questions associated with each framework point
- Internal and External Reviewers will be asked to evaluate the 6-point framework write-ups and data matrices
- Rewrite the frameworks based on reviewer comments
- Compile the revised 6-point frameworks with data matrices for available datasets
- May status report will be a compilation of the 6-point frameworks under each criterion + Introduction + Data Availability/Data Gaps
- Prepare 4-pager for policymakers

### **David Pyke also provided the following questions to evaluate indicators:**

1. Do the current indicators describe the Criterion?
2. Is there a critical indicator that is necessary to describe this criterion, i.e., are we missing something?
3. Have we adequately captured the importance of this indicator to the criterion?
4. Have we adequately described how this indicator is meaningful at different geographic regions?
5. Have we adequately described how this indicator is meaningful at different spatial and temporal scales?
6. Have we adequately described the level of data availability for this indicator?

- a. The four choices were:
  - i. Methods and procedures for data collecting and reporting; and data sets of useable quality exist at the regional-national level
  - ii. Standardized methods and procedures for data collecting and reporting exist at the regional-national level, but useable data set(s) do not exist at the regional-national level.
  - iii. Some data set(s) exist at the regional-national level, but methods and procedures are not standardized at the regional-national level.
  - iv. Conceptually feasible or initially promising, but no regional-national methods, procedures or data sets currently exist.
7. Have we adequately described the understanding of this indicator by stakeholders?

**Next Steps – Lou Romero and Tom Bartlett**

*See Appendix L for the draft agenda for next SRR meeting to be held January 14-16 , 2003.*

*See Appendix M for the Steering Committee and criterion group leadership planning meeting draft agenda.*

## **Appendix A**

### **San Diego Participants**

1. Barbara Allen-Diaz, UC Berkeley
2. Tom Bartlett, Colorado State University
3. Steve Borchard, DOI-Bureau of Land Management
4. Mark Brunson, Utah State University
5. Larry Bryant, USDA-Forest Service
6. Larry Butler, USDA-NRCS
7. Jim Cash, USDA-ERS
8. Charles Curtin, Malpai Borderlands Group
9. Jim Cropper, USDA-NRCS
10. Brian Czech, U.S. Fish and Wildlife Service
11. Gary Evans, se4 consulting, inc.
12. Bill Fox, Texas A&M University
13. Paul Geissler, USGS
14. Stan Hamilton, National Association of State Foresters (NASF)
15. H. Theodore Heintz, Jr., U.S. Department of the Interior
16. Lori Hiding, Ecological Society of America
17. Nelroy Jackson, Invasive Species Advisory Committee
18. Linda Joyce, USDA-Forest Service
19. Sherm Karl, DOI-Bureau of Land Management
20. Linn Kincannon, Idaho Conservation League
21. Matthew Loeser, University of Northern Arizona
22. Dick Loper, Wyoming State Grazing Board & National Public Lands Council
23. Tom Lustig, National Wildlife Federation
24. Kristie Maczko, Colorado State University
25. Dan McCollum, USDA-FS
26. John Mitchell, USDA Forest Service, Rocky Mountain Research Station
27. Tischa Munoz, University of Northern Arizona
28. Arnold Norman, USDA-NRCS
29. Duncan Patten, Montana State University
30. George Peacock, USDA-NRCS
31. David Pyke, USGS
32. Tom Roberts, DOI-Bureau of Land Management
33. Lou Romero, DeLaPorte and Associates
34. Helen Rowe, Colorado State University
35. Pat Shaver, USDA-NRCS
36. Philip Sims, Southern Plains Range Research Station
37. Ken Spaeth, USDA-NRCS
38. John Spence, National Park Service
39. Lawrence Strong, Northern Prairie Wildlife Research Center
40. Lou Swanson, Colorado State University
41. John Tanaka, Eastern Oregon Agricultural Research Center
42. Dennis Thompson, NRCS
43. Allen Torell, New Mexico State University
44. Paul Tueller, University of Nevada

## **Appendix B**

### **SRR Overview - Tom Bartlett**

The purpose of the Sustainable Rangelands Roundtable (SRR) is to identify indicators for sustainable rangelands. These C&I should provide a common framework for monitoring and assessing progress towards sustainable rangeland management, expand the understanding of rangeland sustainability, and enhance the quality of debate about rangeland management issues. We hope that the C&I will improve the coordination, efficiency and quality of monitoring and data collection on our nation's rangelands. SRR gains from links with other indicator efforts, such as the Heinz Report, Roundtable on Sustainable Forests, Sustainable Minerals Roundtable, and others. The process values and respects all opinions and contributions of members and is intended to be open, positive, future focused, and dynamic.

The SRR has held 9 meetings to date since 2001. We have over 100 members from Federal state and local agencies, representatives from 16 universities, non-governmental groups & organizations. In addition to our broad membership, the SRR has worked hard to get outside feedback on our work through symposia (SRM annual meeting, 2002) and workshops (ESA 2002, Society for Natural Resources International meeting 2002). The SRR will publish a report on US Sustainable Rangelands in Spring 2003. .

#### Time line:

Jan. 14-16 - First draft of report chapters ready for editing

Feb. 3-5 – SRM Workshop

Feb. 15 – Chapters ready for SRR internal review

March 1 – SRR internal review completed

March 18-19 – Revised chapters completed. Submit to external reviewers.

April 11 – Receive external reviews and incorporate changes

May 2, 2003 – Deadline for final chapters

May 5-9 – Create Executive Summary (Briefing Document) and prepare report

May – SRR Briefing in Washington, DC

December – submit chapters to journal and complete technical edits

## Appendix C

### Importance Of Scale For Indicators Of Sustainable Rangelands

It is very important for each indicator to consider scale because many aspects of the indicators change with spatial and temporal scale.

- **Natural Systems.** For example, consider species assemblages. On a small scale, rangeland species are often negatively associated because different species are unlikely to occur in the same small plot. On a large geographic scale that includes both rangeland and forest areas, rangeland species would have a positive correlation because rangeland species would occur together when compared to forest species. Paleoecological studies have shown that some of the plant and animal assemblages that exist today may not have existed in the past.
- **Management Issues.** For example with invasive species, at the allotment level, managers are concerned with what invasives are present and where they are located so that they can be controlled. At the regional and national spatial scales, managers are concerned with how serious and widespread the problem is and with how to allocate resources to solve the problem.
- **Stakeholders and Audience.** State and local organizations want information on their areas, whereas Congress and national organizations want regional and national information.
- **Measurements:** The statistical reliability of the estimates depends on the number of observations. Consequently, national and regional surveys provide good information at the national and regional scale, but only poor information is available at the local scales. Intensive studies at the local scales are typically initiated because of local problems and are not representative of larger areas and cannot be used to make inferences for larger areas.
- **Applicability.** Some indicators are not applicable at all scales. For example, indicator 86 on the development of scientific understanding of range ecosystem is not applicable at the allotment level. However, most indicators measured at small or local spatial scales can be aggregated to the regional and national levels by using appropriate measures. For example, we could aggregate the percent of land by functional condition categories, although we may not be able to aggregate specific conditions. It is essential to use common indicators and protocols to allow aggregation where possible.
- **Interactions.** Indicators and the phenomena they measure interact in many ways, affecting each other and sustainability. These interactions occur at the local level, and evidence of both interactions and effects may not be apparent in national estimates because they are averaged out. Investigation of effects and interactions is best conducted at local scales and then the results aggregated. To be useful, most indicators should be meaningful at the local, state, regional and national scales. We need to understand how processes and issues change with scale and to operate effectively at all scales.

The interpretation of the indicators is limited by the grain and extent of observations. The grain refers to the smallest size of the observational unit and reflects the resolution of the information. The effect of grain is evident with a wristwatch where the smallest temporal grain or resolution is a second or with remotely sensed information, where the smallest spatial resolution is the size of a pixel. The observational units for national surveys are often small plots, but there may be so few plots at the county or state level that the statistical reliability is so low that the survey is not useful at that scale. Annual observations may not be frequent enough to detect changes within a season. The extent refers to the total area or time over which observations are made. Conclusions are limited to the range of the observations, because conditions are likely to be different outside that range.

Although it is important to be aware of the effects of scale, scale issues will not be a problem for most indicators. For example, consider our first indicator - percent of available rangeland that is grazed by livestock. This indicator can be easily aggregated to the state, regional and national levels, and it will be applicable at all scales. A large proportion of the quality rangeland will be grazed, but a much smaller proportion of the Nation. Restricting the indicator to available rangeland instead of all land reduces this effect. Thus, the interpretation of the percentage depends on the area considered. Management issues, stakeholders and audience will all change with the scale from the allotment to the national level, with broader policy issues being considered at larger scales. Good information is probably available at small scales from administrative records, but for other indicators such as 3 (presence and density of important obligate wildlife species) depend on survey estimates. Here the grain is important, because sample sizes may not be sufficient to provide reliable estimates at the allotment level, although they probably will be at the state level. The extent is also important, as there may be areas for which no data are available.

**Appendix D**  
**Identification of Ecosystem Indicator Programs, Projects and Reports for Possible  
Coordination with the Sustainable Rangeland Roundtable**

**Roundtables**

Roundtable on Sustainable Forests – Workshop November 21, 2002 to review final draft.

Sustainable Minerals Roundtable – report by mid-2003.

Sustainable Water Resources Roundtable – First meeting December 10, 2002.

**Other Government Programs, Projects and Reports**

**Office of Science and Technology Policy:** considering ways to promote Science for Sustainability through Federal Programs. **CEQ** also organizing effort to bring more coordination to these various efforts.

**USDA/ARS.**

Indicators of Great Basin Rangeland Health

Application of indicators of rangeland health developed for the Chihuahuan Desert (a warm desert) to the Great Basin (a cold desert). Use of mean size of bare patches at a site as a surrogate for ecosystem condition. Several indicators including percent cover by vegetation, percent cover by shrubs, percent cover by sagebrush, and percent cover by resilient species were related to mean bare patch size.

**US Forest Service**

National Projections of Forest and Rangeland Condition Indicators (Hof et al. 1999)

**EPA**

Environmental Monitoring and Assessment Program (EMAP). Evaluation of the nation's ecosystems.

Evaluation Guidelines for Ecological Indicators (Jackson et al. 2000).

State of the Environment. Nearly complete. Also development of plans for an ongoing Indicator initiative

**NRCS**

Interpreting Indicators of Rangeland Health: Version 3. (Pellant et al. 2000).

Rangeland Soil Quality – Indicators for Assessment and Monitoring. 2001.

National Resource Inventory (NRI)

**NPS**

Vital Signs Program. Identification of indicators for long-term evaluation of status of the parks.

## **USFWS**

National Wetland Inventory (NWI)

## **NAS/NRC**

Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands. 1994.

Emphasis on soils and watershed, integrity of nutrient cycles and energy flow, and functioning of ecological processes that enable rangelands to recover from damage.

Ecological Indicators for the Nation. 2000.

## **Non-Profit Programs and Reports**

### **Heinz Center for Science, Economics, and the Environment**

The State of the Nation's Ecosystems: Measuring the Lands, Waters, and Living Resources of the United States. Working Group on Grassland/Shrubland Indicators. 2002.

### **NaturServe**

A searchable database with more than 50,000 plants, animals, and ecological communities.

## **State Programs (examples)**

California Legacy Project: Resource Health and Condition Assessment (effort to find key indicator data within regions (draft due July 2002).

## **International Indicator Program (examples)**

**Montreal Process.** Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. 1995.

### **Rangeland Desertification. International Workshop, Iceland September 16-19, 1997.**

Selected comments: degradation of rangelands needs to be evaluated based on their ecological properties, and methods designed for croplands are generally not applicable. The understanding of ecosystem function is vital, for assessment, management objectives and counter measures. Management of rangeland needs to be based on understanding of ecosystems (plant, soil and animal) function and the role external driving forces have in dictating ecosystem behavior.

Ecosystem response to extreme events can more important than the mean conditions in determining the long-term trend.

Indicators functionally relevant at one scale can lose their meaning when upscaled to larger areas. When rangeland are analyzed at the landscape level, individual patches are found to be spatially interconnected with significant fluxes of matter from one landscape unit to the next. Processes need to be studied at the spatial and temporal scales management decisions are made at.

Rangeland are degraded when the functional integrity of the system is damaged thus leading to reduced productive capacity and loss of resiliency.

### **National Land and Water Resources Audit, Australia.**

The Audit will focus primarily on information needs of Commonwealth and State governments on issues of land and water resource management.

#### Scientific Outputs:

Scientific assessments of the status of, and where possible recent changes in, the nation's land, vegetation and water resources to assist decision-makers achieve ecological sustainability. The assessments are also to serve as a baseline or benchmark for future trend analysis.

Reports on the economic, environmental and social dimensions of land and water resources change, including land cover and remedial actions.

Integrated, nationally-compatible datasets.

National water resources assessment.

Links between the Audit and the State of the Environment reporting process, the Indicators for Sustainable Agriculture and other relevant activities at the State and Commonwealth level.

Audit Products in progress. Rangeland socio-economic indicators.

Sustainability of Terrestrial Ecosystems – National State of the Environment Report – South Africa. 1999.

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Working Group on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests. 1995. Sustaining the world's forests: the Santiago Agreement. *Journal of Forestry* 93 (4):18-21.

**Appendix E**  
**Workshop on Indicators of Social and Economic Sustainability**  
La Maddalena, Sardinia, Italy  
October 12, 2002

Convenors: Mark Brunson, Sustainable Rangelands Roundtable  
and Deborah Shields, Sustainable Minerals Roundtable

The workshop was sparsely attended, with an average of 10-12 persons in the room during the two-hour period. Three presentations of roughly 20 minutes each opened the workshop: one on sustainability, the criteria/indicator concept, and the overall roundtable process (presented by Brunson); one on the Sustainable Minerals Roundtable and its social and economic indicators (Shields); and one on the Sustainable Rangelands Roundtable and its social and economic indicators. Discussion followed which focused primarily on the roundtable process or on rangelands indicators. Here are the key points:

- The social and economic indicator process as both roundtables have undertaken it (but especially the Sustainable Rangelands Roundtable) is much too ambitious.
  - We appear to be trying to look at how everything is connected to everything else.
  - Indicators should be related to use – if the indicator isn't about the management of minerals or rangelands, let others worry about it (e.g., U.S. Department of Health and Human Services)
  - The indicators are large-scale yet the primary actions that would need to be taken are place-specific – can these indicators (especially the social ones) tell us anything at a scale where it's possible to make a difference?
- Indicators without evaluative standards may be meaningless. If you measure change but don't know what you should be moving toward (or away from), your measure has little utility.
  - Why aren't we measuring things that allow us to consider tradeoffs?
  - We have chosen not to measure public values (i.e., to maintain some sort of measure of attitudes/preferences with respect to rangelands); this is a mistake – not only would we get information about the standards against which indicators are to be compared, but it would provide us with visions of desired conditions 30 years into the future (30 years is far enough in the future that people would be likely to think beyond their own generation.)
  - How can we account for non-use values of rangeland products if we fail to measure societal values or desires?
- Is a large metropolitan county a “rangeland county”? Probably not in any meaningful sense of the word.
  - Activities in economic or social sectors unrelated to rangelands would be likely to dominate the calculation of indicators. The lands themselves have been replaced by another category of land (urban/developed). It might be better simply to set a minimum threshold of range dependency and to only measure indicators for counties exceeding that threshold.

- There was some debate about whether counties are the appropriate unit of measurement. This discussion focused on two main points:
  - Ecological sustainability is best measured in other units, so would it not be possible to aggregate county data to ecologically relevant scales?
  - Counties are where most land use decisions are made, so that is the best unit of measure (and potentially the only truly relevant one).

**Appendix F**  
**Draft Outline for SRR Communications Plan**  
**October 25, 2002**

- I. Introduction and Background on Sustainable Rangelands Roundtable  
*Including Inter-relationship of SRR to other efforts—rangeland inventory and monitoring, GRPA, etc. how feed into*
- II. Communication Plan Goals and Objectives
  - a. Make key constituencies aware of SRR and the report
  - b. Profile target audiences
  - c. Identify most effect forms of communication to reach each audience
  - d. Describe communication materials to be created and used to make the contents of the report accessible to a diversity of users and applications
  - e. Assess effectiveness of outreach efforts
  - f. Challenges
    - i. Finding the time and resources to design and deliver communication and outreach tools
    - ii. Reaching ranchers and other stakeholders and garnering their support
- III. Overview of Plan (see Appendix B)
  - a. To reach Congress
  - b. To reach Agency Leadership
  - c. To reach Agency line staff
  - d. To reach public rangeland managers
  - e. To reach private rangeland managers
  - f. To reach scientific societies
  - g. To reach environmental organizations
  - h. To reach industry groups
  - i. Benefits to SRR of communicating with each group
- IV. Message (what SRR can do for audience and what want audience to do for us)  
**More discussion needed: Steering Committee and Outreach Working Group input**
- V. Materials, Products and Activities
  - a. Presentations
  - b. Briefings
  - c. Hill Visits
  - d. Slick Executive Summary as stand alone document (*by mid-May*)
  - e. Report
  - f. News releases
  - g. Website (<http://sustainableangelands.cnr.colostate.edu/>)
  - h. Peer-reviewed publication
  - i. Journal articles
- VI. Research and Evaluation
  - a. Success of communication plan
  - b. How to assess
- VII. Proposed Budget
  - a. Overall
  - b. By Audience
  - c. By Material/Product/Activity

Appendix A: Past Accomplishments and Potential Commitments (will be integrated into Plan)

Completed:

SRM Symposium– February 2002 – background  
DC Briefing I – May 2002 – Agency and NGO leadership - background  
NCBA Federal Lands Committee – July 2002 - background  
ESA Workshop – August 4, 2002 – background and feedback on indicators  
NACD Meeting – August 2002 (Dennis T.) – background  
Department of Defense's Conservation Committee - October 8, 2002 (Deen Boe) – background  
Society and Natural Resource Management – October 2002 (Mark Brunson) – background and feedback on indicators

Committed:

SRM workshop – February 2-6, 2003 (Casper, WY) – background and feedback on indicators  
ICAST April 2003 (Bill Fox) – presentation on SRR in context of Bill's symposium – background  
DC Briefing II – spring 2003 – Congress, agencies, NGOs  
IRC – July 26 – Aug 1, 2003 (Durbin) – background

Potential:

American Farm Bureau – January 18-28, 2003 (Tampa FL) – background  
NACD – February 9-13 (Orlando) – background  
NCBA PLC – April 9-12 (DC)  
Society for Conservation Biology – June 28-July2, 2003 (Duluth, MN); workshop proposals due November 30, abstracts due Jan 10.  
NCBA Summer Meeting – July 20-26, 2003 (Dallas)  
SWCS – July 27-30, 2003 (Spokane) – background on indicators of soil and water sustainability  
ESA – August 3-9, 2003 (Savannah) – rollout and evening discussion session  
GLCI Conference – December 7-10, 2003 (Nashville) – background (Feb 1<sup>st</sup> abstract deadline)

Appendix B Potential Organizations to Target

Federal Agencies:

Office of Science and Technology Policy  
US Department of Agriculture  
Agricultural Research Service  
Cooperative State Research, Education, and Economics Service  
Economic Research Service  
Forest Service  
National Agricultural Statistics Service  
Natural Resources Conservation Service  
Sustainable Development Office  
US Department of Interior  
Bureau of Indian Affairs  
Bureau of Land Management  
National Park Service

US Fish and Wildlife Service  
US Geological Survey  
Environmental Protection Agency  
Department of Defense  
Department of Energy  
Department of Transportation  
National Ocean and Atmospheric Administration  
State Department

Congress:

Senate Appropriations Committee, Subcommittee on Interior and Related Agencies  
House Appropriations Committee, Subcommittee on Interior and Related Agencies  
House Subcommittee on Environment, Technology, and Standards  
Senate Subcommittee on Environment, Technology, and Standards  
Specific members?

Scientific Societies:

Ecological Society of America – On-line Bulletin, Ecolog, Frontiers?  
Society for Range Management – Trail Boss, Rangelands?  
American Fisheries Society  
American Institute of Biological Sciences  
George Wright Society  
Natural Areas Association  
Society and Natural Resource Management  
Society for Conservation Biology  
Society for Ecological Restoration  
Society of American Foresters  
Soil and Water Conservation Society  
The Wildlife Society  
Tri-Societies (ASA/CSSA/SSA)  
Weed Science Society

Industry:

National Cattlemen's Beef Association  
American Farm Bureau  
American Sheep Association

Environmental NGOs:

Defenders of Wildlife  
Gray Ranch and Malpai Borderlands Group  
Idaho Conservation League  
National Association of State Foresters  
National Audubon Society  
National Wildlife Federation  
NatureServe  
The Nature Conservancy  
The Wilderness Society  
Tread Lightly

Other:

Grazing Lands Conservation Initiative

Heinz Center for Science, Economics, and the Environment  
International Association of Fish and Wildlife Agencies  
Izaak Walton League of America  
National Associations of Conservation Districts  
National Fish and Wildlife Foundation  
National Wilderness Institute  
Public Lands Foundation  
U.S. Conference of Mayors  
Water Environment Federation  
Western Land Commissioners Association  
Western Organization of Resource Councils  
Wildlife Management Institute

State, Tribal, and Local Governments

National Association of Counties  
National Governors Association  
Associations of State agencies?

Social Science groups?

Economic groups?

Is there some tribal natural resources organization?

**PLEASE SEND ANY COMMENTS/IDEAS/SUGGESTIONS/THOUGHTS**

**By DECEMBER 1**

**TO LORI AT [lori@esa.org](mailto:lori@esa.org)**

## Appendix G Whole Group Indicator Review

### Social and economic

1. Remote expenditures would be attributed to rangelands.
2. Positive or negative indicator
3. What will have an impact- it has to be clear what it all means. What is a sustainable society? 32, 42, 44, 45, 46,
4. 47-48 --something missing?
5. 48- special values protections- BLM is open for all uses, therefore special leasing/designations may not be a good way of indicating changes, is not a sensitive indicator of protected status.
6. 32-educational attainment- quality vs. quantity
7. Land conversion is the crux – what’s it being converted to? In health and diversity group- but they do not track what it is tracking what it is converted to. It may be tracked by sustainable development working group to cover all land types.
8. NAICS?
9. 51. Capturing values of some rangeland products (how to compare with ecological values – scenic value, open space, etc. - that have no market value)
10. Community well-being – valance- positive/negative indicator of sustainability – clear interpretation 51, 54, 55a, 57 [The SRR assigns no values to these indicators because these will be open to the interpretation of the public/decision makers. This should be clear in every section of our group/in report. We should have public statements to convey the message that there will be some indicators that will directly pertain to the issue of sustainability. Other indicators may be abstractly related and will require further interpretation.]
11. These indicators should show the capacity to produce these benefits over time, instead these concentrate on income. Does not seem to be a good indicator of capacity for sustainability.
12. 55b. Rangeland production vs. livestock production seems valid. Dependence on livestock prices.
13. 57. valance; restoration dollars, and time? How to interpret increasing expenditures on restoration.
14. General: Information overload; need to be more concise

### General:

Livestock vs domestic livestock should be defined across group.

Will discussion of dropping an indicator come back to the whole group?

### Legal/Institutional

1. Qualitative data – values? Temporal changes? Extent vs are there. Enforcement (are they enforced?)
2. Indicators vs. sub indicators.
3. 96-97-different scales and mixed sets of laws and institutional jurisdiction
4. 96-98 similar structures – support or impede revise words for describing impediments

5. 97- quality of input - opinion or science based; is there good long-term data, is it at the right scale? Use scale guidelines.
6. Structure of institutions – institutional response to legal framework
7. 96-97 Indicator of monetary flow (total) is there a change?
8. 96c public participation- NEPA, etc.
9. 98 – focus on agriculture, scale question
10. General - International interactions? Has a process been exported to another country?
11. Data collection – would the data be a listing of laws? Current state of laws? Then updates of new laws or changes to law or case law. Is there a framework that deals with this?
12. General – indicators are written as questions. 20 indicators very dense, hard to understand. Wanted to write it in plain English to simplify.

### Ecological Health and Diversity

1. Extent of land area: neutral indicator – no understanding of how changes in land base are tied to criterion/sustainability. Thinks it's ok to have a value. Backbone. Maybe explain in importance section: What are the potential implications?
  - a. How does this indicator contribute to maintaining this criterion? In importance section.
  - b. Each indicator should stand alone, but also have a collective importance
  - c. Interpreting the data is important
  - d. If there is not enough rangeland, then that will come out in the other indicators
  - e. Inappropriate to assign value. Ok to think of examples in importance section. Different interpretations.
  - f. Should at least point out the obvious values.
  - g. Interpretation of data not of value.
2. Natural fire regime – North America vs. US – typo
3. National fire plan has risk assessment might provide helpful information as another data source. Haven't identified how the indicator will be monitored more specifics needed.
4. PFC- should consider in data matrix to articulate problems as well as usefulness. Which vegetation attributes are important? Connect watershed to the vegetation condition. Need more explanation in write-up.
5. Wetland abundance – NRI dataset is available
6. Area by vegetation type - Actual community vegetation types must be expressed in terms of some measure of potential vegetation.
7. Fragmentation-needs better definition of the fragmentation metrics to be used. Scale is important. Some areas are too homogenous more fragmentation needed.
8. Human use – how will data be interpreted, categorization of roads and buildings, ORV's- useful over time (what kind of use); needs more thought.
9. Invasive species – good indicator
10. Species communities of concern – limitations of existing data (looks like all information have been collected in write up)
11. Level distribution representative species-- keystone – need more information on the variables and their parameters: examples; lacking plant population data animal populations have more data available or look at abundance. How to identify keystone species.
12. Road density- open road density should be used -- use intensity.

## Productive Capacity

1. Other indicators of production not plant biomass related water (soil and water? Wetlands?) Landscape and open space values. Links to other groups?
2. I1. Primary and secondary production, other products, perception of land type vs. use.
  - a. Non ungulate secondary production—insects, grasshoppers, soil organisms. There are a lot of other grazers.
  - b. Hard to interpret numerator and denominator amount grazed/amount available.
  - c. What is available? Geographically, institutionally, biologically, draught, theoretical, seasonal, net...
  - d. Visual counts are difficult in some rangelands.
3. General: struggling against being constrain measuring productive capacity by dollars
4. I2. Data none exist- needs to be coordinated organized and teased out. Indicator needs to be rewritten to clarify argument for good or bad indicator.
5. I2. NASS- clarify using private and federal data for compiling data.
6. I3. Grazers – trade offs between wildlife and livestock. Utility of common metric of wildlife and livestock-density
7. I4. This indicator is nearly impossible for data. How to measure? Volume? Some becoming rare through collection. Poaching. Scale report missing. Species can be concern for a number of reasons.
8. General: What is an adequate text length?
9. I5-6 Combined or should they be separated out? What direction to go? Production or productivity? Above and below ground.
10. What is capacity? Do we deal with potential? Carrying capacity? Reference?

## Soil and Water

1. Describe site with standardized class system before change can be assessed; relate to soil classification system. Ecological site description can be tied to soils.
2. Basic inventory unit related to rangelands is needed.
3. Data is related to century model for soil carbon? Listed only analytical sources. Consider models for prediction.
4. Look at trend; change over time; temporal relationship for compaction.
5. Temporal trend tied to ecosystem site for aggregate stability needed.
6. Biological organisms. Relation of biological activity to soil organic Carbon.
7. Relation to ecoregions, site agency other than NRCS. Include public lands.
8. Aquatic biological diversity. Not much here.
9. Ground water and aquatic biota – Mandated TMDLs might be included.
10. General – How much will be covered by the Water Resources Roundtable? Are some of the indicators too comprehensive?
11. Groundwater – water availability differentiate between ground water that affects vegetation and water below root zone. Impact of communities. Emphasize riparian issue.
12. Greenline is a valuable procedure, but it is not the same as channel geometry.
13. Intermittent streams – change catchment to watershed? Site specific? It will be a point measurement from USGS stream gauging stations.
14. Intermittent streams – Consider climate and vegetation change, scale issue?

15. Outside of superfund sites what does this say? Should salinity be considered a toxic?  
High phosphorus? From RSF indicator, but haven't worked with it. Looking at if there are increases or decreases of this kind of toxic land?
16. General – redundancy area and percent of accelerated soil erosion with significant change of bare ground. Can these be combined?

## Appendix H: Data Matrix

Instructions: In the evaluation of each indicator, criterion groups will begin by using the 6-point framework and continue by filling out one data matrix for each indicator. The group should respond to each matrix question in a manner that will enable a reviewer to understand the relative merits of each data set. Short answers should be fit into the matrix (which can be put into excel) and longer responses can be footnoted. A glossary for the matrix is provided below the table.

### Data Matrix for Indicator #\_\_\_

	Data Set # 1	Data set # 2	Data set # 3	Data set # 4
Response from #5 of 6-point evaluation framework (A-D)				
Brief Title for Data Set:				
Contact Person/Agency/Group (email, phone, address):				
Citation (if published):				
Website (if available):				
Additional information on data set:				
For what years are data available and how often are data collected?				
In what format is the data set available? (map only, data point, ...)				
Are data nominal, ordinal, continuous, or interval?				
What will be the approximate cost of collecting data?				
What barrier(s) prohibit access or use of data? (Restricted use, exorbitant cost, technical or legal barriers, confidentiality barriers, etc.?) Or are data easily accessible?				
What is the spatial grain of the data?				
What is the spatial extent of the data?				
At what spatial scales can these data be aggregated and reported?				
What is the temporal grain of the data?				
What is the temporal extent of the data?				
At what temporal scales can these data be aggregated and reported?				
Quality: can data be adequately reported over time in a consistent form? (Consistent methodology.)				

Quality: how repeatable are existing data? (Include p value of differences in estimates of independent observers if available)				
Quality: how biased are the sampling methods?				
Quality: how precise are existing data? (Give standard error, if available)				
Quality: how valid are existing data?				
Quality: how responsive are existing data?				
Quality: how much statistical power to detect change does this data set have?				
Quality: how well does this data set meet the data needs for this indicator?				
Other comments: (Include any other relevant aspects of the data set that should be included.)				

**Matrix glossary:**

**Nominal scale:** Observations that fall into mutually exclusive, collectively exhaustive categories, like male-female and burned-unburned, and cannot be ranked.

**Ordinal scale:** Observations that are not only different from category to category, but can be ranked according to some criteria; e.g., poor, fair, good, excellent range condition classes.

**Interval scale:** A scale consisting of equal-sized units. On an interval scale the distance between any two positions is of known size.

**Grain:** Size of the observational units. Grain sets the fineness of the distinctions that can be made from the observations.

**Extent:** Size of the sampling universe. Inferences cannot be beyond the range of the observations.

**Repeatable:** Independent observers would obtain similar results.

**Bias:** The sampling population differs from the true population.

**Valid:** The indicator measures what is intended.

**Precise:** Replicate observations have similar values (low variance).

**Responsive:** relates to the ability of the measurements to detect changes in the phenomena.

Measurements are not responsive if they show little change when the phenomena changes or if changes in the measurement lag changes in the phenomena. We want leading not lagging indicators. For example, I do not think the number of endangered species is responsive, because the species are already in serious trouble before the problem is reflected in the data. Population levels or recruitment would be more responsive. We will probably want to include some data that are not responsive such as the number of endangered species, but we should be aware of their limitations and also include more responsive measures.

**Appendix I: PROPOSED FORMAT FOR 2003 REPORT**  
John E. Mitchell

Our plan is to publish the report as a special issue of a refereed journal. Each chapter will be a separate paper. SRR participants in each respective criteria group will author the chapter on their criterion. The following chapters (papers) are proposed:

**Indicators of Sustainable Rangelands: Executive Summary** (Mitchell and Bartlett)

**Indicators of Sustainable Rangelands: Introduction** (Authored by steering committee)

- Description, extent, and importance of U.S. rangelands
- History of sustainable development concept
- History, organization, objectives, and operation of the SRR. Why work is important.
  - Criterion groups
  - Working groups
  - Outreach program
- Definitions: Rangeland, sustainable management, sustainability, criteria, indicators, scale.
- Delphi process
- Use of C&I for assessing sustainability at different scales
  - Scale: National (our work), regional, local. Concepts, how they interact and differ.
  - Description, importance of criteria
  - How selected
  - 6-point evaluation framework
- Relationship with other programs to appraise rangeland sustainability
  - Heinz Center Report
  - LUCID C&I
  - EMAP
  - Protocols to assess rangeland health
- Appendices: Guiding Principles, Meetings, Participants

**Indicators of Sustainable Rangelands: Productive Capacity**

- Introduction.
  - Description and overview of the criterion
  - Brief description of how the criterion group selected the indicators
  - Relationship to Montreal Process and Minerals indicators (if applicable)
- Indicator 1 (Note: Report will follow format of 6-point evaluation framework)
  - Description of indicator
  - What it measures and why it is important
  - Geographic variation: Pertinence in different regions of U.S.
  - Scale: Utility of indicator at different spatial and temporal scales

Data availability and needs (both existing data and proposed data)

Data source #1 (Overview. Details will be in data matrix)

Kind and availability (A-D)

Quality (accurate, reliable, repeatable), long-term relevance

Cost of procuring data, if not available

Adequacy over time of nominal or ordinal data

Grain and extent of the data, if known

If finer grain, ability to aggregate to national level

Coverage of the data

Applicable to regional and national level

Access to raw data

Data source #2

.....

Indicator 2

.....

Discussion and Conclusions

Literature Cited

Appendice: Data Matrix

### **Indicators of Sustainable Rangelands: Ecological Health and Diversity**

### **Indicators of Sustainable Rangelands: Soil and Water Resources**

### **Indicators of Sustainable Rangelands: Multiple Economic and Social Benefits**

### **Indicators of Sustainable Rangelands: Legal, Institutional and Economic Framework**

### **Indicators of Sustainable Rangelands: Summary and Future Direction**

Authored by Steering Committee?

Relevance of these C&I for assessing the U.S. present and future rangeland situation

Protocols for synthesizing the C&I

No "GNP." Those with different values will emphasize different criteria

The validity of including bio-physical, economic and social indicators

Future directions for achieving sustainability on U.S. rangelands and other lands

**Appendix J**  
**List of potential reviewers**

Criterion Group	Reviewer name, affiliation, contact information
Ecological health and diversity	<p>Dr. Paul Angermeier Department of Fisheries and Wildlife Mail Code 0321 Virginia Tech Blacksburg, VA 24061-0321 540-231-4501                      biota@vt.edu</p> <p>Steve Archer University of Arizona School of Renewable Natural Resources 520-626-8791</p> <p>Dr. Ann Bartuska, Director, Invasive Species Program, Nature Conservancy at Morgantown, PA (?) -- (Ecologist, formerly the director of forest and rangeland management for the U.S. Forest Service)</p> <p><b>Mario Biondini, U NE</b></p> <p><b>Bob Costanza</b></p> <p><b>ESA's Rangeland Ecology Section</b></p> <p>Laura Huenneke New Mexico State University PO Box 30001 Las Cruces, NM 88003-8001 505-646-3933 <a href="mailto:lhuennek@nmsu.edu">lhuennek@nmsu.edu</a></p> <p>Carolyn Hull Sieg US Forest Service Rocky Mountain Research Station Southwest Forest Science Complex 2500 South Pine Knoll Drive Flagstaff, AZ 86001 520-556-2151 <a href="mailto:csieg@fs.fed.us">csieg@fs.fed.us</a></p> <p>Dr. Steve Knick, USGS, Snake River Field Station, 970 Lusk Street, Boise, ID 83706; Phone 208-426-5208 (Has extensive experience in landscape metrics and landscape ecology, applied to rangelands)</p>

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Project Leader for an EPA Forest Indicators Research Project --conducted research to identify above- and belowground indicators that were sensitive to the status and condition of western forests. Led the soils component of this work

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Productive capacity	<p>Dr. Steve Archer  School of Renewable Natural Resources, Univ. of Arizona,  Tucson, AZ 85721  Phone: 520-626-8791  e-mail: <a href="mailto:sarcher@ag.arizona.edu">sarcher@ag.arizona.edu</a></p> <p>Dr. Derek Bailey  <a href="mailto:Dbailey@montana.edu">Dbailey@montana.edu</a></p> <p>Dr. Scott Collins, Ecology Program Director, NSF. 703-292-8481.  &lt;<a href="mailto:scollins@nsf.gov">scollins@nsf.gov</a>&gt;. Ask to have someone on NSF staff review it if he cannot.</p> <p>Dr. Richard Hart, 7132 Cordova, Cheyenne, WY 82009 307-632-6114</p> <p>Dr. Bill Lauenroth, Colorado State University.</p> <p><b>Dr. Tony Lesperance, Rangeland Consultant, Paradise Valley, Nevada</b></p> <p>Dr. Fred Provenza  <a href="mailto:Stan@cc.usu.edu">Stan@cc.usu.edu</a></p> <p>Society for Range Management, Rangeland Assessment and Monitoring Committee, Dr. Phil Sims, Chair.</p> <p><b>Dr. Jim Young, ARS in Reno, Nevada</b></p>
Social and economic	<p>Dr. David Cameron <a href="mailto:Davidtanya@attbi.com">Davidtanya@attbi.com</a></p> <p>Richard Conner, Texas A&amp;M, <a href="mailto:jrc@tamu.edu">jrc@tamu.edu</a></p> <p><b>Bob Costanza</b></p> <p>Joshua Farley  Gund Institute of Ecological Economics  The University of Vermont  590 Main Street  Burlington, VT 05405-1708</p>

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<p>Legal institutional</p>	<p>Sen. John Cobb  PO Box 388  Augusta, Mt, 59410  406-562-3670  John Cobb is a lawyer, raised on and manages the family ranch. Both of these individuals have been active Montana legislators and have been involved in many of the land use issues along the Rocky Mountain Front interface in Montana.</p> <p>Jon Erickson  School of Natural Resources  344 Aiken Center  University of Vermont  Burlington, VT 05405  (802) 656-3328   <a href="mailto:jdericks@zoo.uvm.edu">jdericks@zoo.uvm.edu</a></p> <p><b>Heinz Center</b></p> <p>Mr. Chase Hibbard lawyer  <a href="mailto:Ctbard@in-tch.com">Ctbard@in-tch.com</a></p> <p>Dr. Jay O’Laughlin, Director, Idaho Forest, Wildlife and Range Policy Analysis Group, University of Idaho – 208-885-5776</p> <p><b>Julian Smith, Attorney, Carson City Nevada</b> has represented many ranchers especially on public land issues.</p>

## **Appendix K**

### **Discussion on publication and report**

*Following the discussion on the reviewers, the group had the following discussion to clarify products.*

Are we on the right track for developing the final papers? Shoot for five stand-alone papers that can withstand peer review.

None of these papers would be stand alone papers. Indicators cross boundaries.

The papers would reference each other.

What needs to be decided?

External review needs to be decided based on content.

How do we get consistency and balance in how we write the indicators?

If we push for May, we cannot get a referred paper by then. Shoot for writing proceedings document or CSU or Rocky mountain station paper. Content is influenced by outlet. Review in March.

Upgrading indicators, have document with six points and another paper that's condensed. Don't we need two papers? One with all the information and then one for publication?

Technical report and journal paper- are they separate papers?

Monograph length for each criterion is possible.

Interaction between papers must occur possibly with an extra chapter that addresses the connections.

25-30 page length maximum.

IPCC document or UN biodiversity document – referenced textbook. Can be referenced. One product with all chapters and references. Each indicator could have many references supporting each indicator. Does not preclude journal articles.

Double publication issue?

Not analogous to 1997 forest report. Closer to the 2003 forest report, with the exception of a chapter of interpreting the linkages. Should SRM or BLM publish? Grey literature, though. No science based process review.

New process. We can choose to publish in a book. Thought we had chosen journal publication. Independent stand alone criteria -- reviewers would make sure all points to the criterion are in there. Need preface and synthesis chapters. Reviewer would have to receive all other papers to see it as a set.

Goal to produce document by may that is more comprehensive than 4 pager for congressional staff.

How to review is not resolved.

Journal will do final review?

Special issue- 20 pages per criteria. Each group has to work out a balance for number of pages. How much literature and supporting references will we use? Or do we just use key references. We need consistency. The more references the better, so that people use the document. But it is a lot more work. Without references you open yourself up to all sorts of criticism. Reference other indicator papers. Reviewers will tell you if you have not adequately cited your paper. Estimate 20 pages per group.

Summary chapter can discuss the linkages (also introduced).

Consensus to do this journal. Write in a rigorous manner it will take a year. How can John produce something in May?

Put together information on indicators, where we are at, and have it reviewed. Review document of what we have done for May. We have sufficient material for review. If we have information, provide the citations. Allow reviewers to critique sufficiency of information, indicator sets, gaps in information. Identify those indicators that have adequate information at a national or regional levels and we can provide appendix of data matrix that we do have.

Serves as starting point for full-blown chapters for the publication. Hope to have rewrites done by Jan. 2 months of review. Preliminary report, summary, status reports by May. Executive summary will also be put together to outline points.

Do we still need to identify external reviewers? Yes.

**Appendix L**  
Sustainable Rangelands Roundtable  
Preliminary Draft Agenda  
Fort Myers, Florida  
January 14, 15, and 16, 2003

**Objectives:**

1. Complete draft chapters for each criterion in preparation for internal intergroup review
2. Finalize report outline, timeline, and writing assignments
3. Continue working on data set identification and acquisition

**Tuesday, January 14, 2003**

Technical Site Visit – location to be determined

**Wednesday, January 15, 2003**

8:00 am Welcome and self-introductions – **Tom Bartlett and Lou Romero**  
8:20 am SRR Overview – **Tom Bartlett**  
8:40 am *Working Group Activity Reports:*  
Coordination Working Group Report – **Duncan Patten**  
Outreach Working Group Report – **Lori Hiding**  
9:00 am Report on December 2002 SRR Future Planning Meeting – **Tom Bartlett**  
9:30 am **Break**  
10:00 am Revisit and review to reach consensus on report format and writing guidelines –  
**Tom Bartlett and Lou Romero**  
11:00 am Criterion groups work on indicator write-ups and chapters (includes lunch and  
break)  
12:00 pm Lunch  
1:00 pm SRM Workshop Planning – led by Tom Bartlett  
2:00 pm *Break*  
2:30pm Criterion groups continue work on indicator write-ups and chapters  
3:30 pm Reconvene for status reports and clarification of format/content/consistency  
questions – **led by Lou Romero**  
5:00 pm **Adjourn Day 1**

**Thursday, January 16, 2002**

8:00 am Draft Communication Plan Overview and Discussion – **Lori Hiding**  
8:30 am NRCS State and Transition Models for Ecological Sites – **Dennis Thompson**  
9:00 am Criterion groups work on indicator write-ups and chapters (*includes break*)  
12:00 pm **Lunch**  
1:00 pm Reconvene for status reports and clarification of format/content/consistency  
questions – **led by Lou Romero**  
2:00 pm Criterion groups integrate indicator write-ups and finalize chapters (*includes*  
*break*)  
3:30 pm Reconvene for criterion group chapter exchange and presentation on chapter  
organization and content  
4:30 pm Next Steps – **Lou Romero and Tom Bartlett**  
5:00 pm **Adjourn Day 2**

Appendix M  
SRR Future Planning Session  
Preliminary Draft Agenda  
Phoenix, Arizona  
December 17 and 18, 2002

**SRR Vision**

We envision a future where we have widely accepted criteria and indicators for monitoring and assessing the economic, social and ecological sustainability of rangelands.

**Session Purpose/Objectives**

1. Determine principal outcomes to be produced by SRR between 2003 and 2005.
2. Identify organizational commitments necessary to produce outcomes discussed in the first objective.
3. Develop an action plan to actualize organizational commitments.
4. Develop an action plan continue evolution of indicator work for prioritized topics.

**Tuesday, December 17, 2002**

*Phase 1: Strategic – Short term strategies and Goals*

1. What new relationships and/or partnerships must be developed to further SRR initiatives?
2. What does the 2005 report or product look like?
3. Explore international efforts to expand criterion indicator efforts beyond the U.S.?
4. What areas of concentration must be enhanced or developed to move from current situation to desired 2005 position? I.e., interpretation.

8:00 to 8:30 am	Welcome and Meeting Overview
8:30 to 9:15 am	Consider short-term goals and strategies. What do we want the SRR to accomplish in the long term?
9:15 to 9:30 am	Cluster similar goals; break into small groups to continue focused discussion.
9:30 to 11:00 am	Continue strategic discussion ( <i>including break</i> )
11:00 to 12:00 pm	Small group presentations and large group discussions
12:00 to 1:00 pm	<i>Lunch</i>

## Phase 2: Operational Commitments and Decisions.

1. Which indicators can be populated with data by 2005?
2. Of those indicators, how will efforts be prioritized?
3. For which indicators without data should research protocols be developed?
4. Development or expansion of MOU for sustainable rangelands?
5. Firm organizational commitments; funding, personnel? Effects of changes in administration, budgets, etc.

*1:00 to 2:30 pm*      *Consider necessary operational commitments and decisions. Which organizations must invest in the process, and what commitments and collaborative agreements must be actualized?*

*2:30 to 2:45 p.m.*      Cluster similar goals; break into small groups to continue focused discussion.

*2:45 to 3:15 pm*      *Break*

*3:15 to 4:00 pm*      Small groups continue to discuss operational plans

*4:00 to 5:00 pm*      Small group presentations and large group discussion

*5:00 to 5:30 pm*      Review accomplishments and outline plans for Day 2.

## **Wednesday, December 18, 2002**

*Phase 3: Tactical Considerations; processes for data population, interpretation guidelines, obtaining funding; marketing and promotion.*

1. What actions are necessary to fulfill expectations outlined above?
2. What is the timeline for these actions?
3. What funding is required, and what are the potential sources of funding?
4. What is the organizational process for these activities?

*8:00 to 11:00 am*      Creation of Tactical Action Plan - What specific tasks must be accomplished to actualize operational decisions and commitments? How will these tasks be accomplished?

*11:00 to 12:00 pm*      Review of Accomplishments and Next Steps.

*12:00 pm*      Adjourn