6-30-2008


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Executive Summary

- Bound copies of the proceedings of the natural resources management workshop held on September 13, 2007 have been provided to the Interagency Science and Research Team, the document was also distributed to workshop participants in early April and posted to GroveSite.
- A graphic summary sheet explaining the components of the SNAP Science and Research Strategy has been approved by the Interagency Science and Research Team and is now under review by the SNAP visual arts office.
- The major focus this quarter has been on drafting the SNAP Science and Research Strategy. The draft preface and seven draft chapters were delivered to the Interagency Science and Research Team on June 22, 2008 for review and discussion. A special meeting was held on June 25-26, 2008 focusing on these chapters.

Summary of Attachments

- Team meeting agenda and notes.
- Science and Research Team summary sheet.

Program Activities

Interagency Science and Research Team Facilitation

Two regular team meetings were held during this quarter on April 14 and May 15, 2008. On June 25 and 26, 2008, a special two-day meeting was held to work toward completion of the SNAP Science and Research Strategy document. Prior to each of the meetings, a draft agenda was prepared for review by the team lead. The final agenda was then distributed to team members. Following each meeting, minutes were summarized, distributed to members, and posted to the team’s Grovesite (www.grovesite.com) page.
Science Steering Committee

At the May 15 Interagency Science and Research Team meeting (see attached minutes), Craig Palmer (Project Manager) presented a review of role for science advisory committees. The S&R Team agreed to give this sub-group the formal name “SNAP Science Panel.” The duties of the future SNAP Science Panel are documented in the draft Chapter 2 of the SNAP Science and Research Strategy. Dr. Palmer will assemble a separate review panel to provide a peer review of the first edition of the SNAP Science and Research Strategy.

Partnerships

Dr. Palmer attended a science meeting entitled “The Climate and Deserts Workshop: Adaptive Management of Desert Ecosystems in a Changing Climate” held in Laughlin, Nevada from April 9-11, 2008. This workshop offered an opportunity to identify emerging science needs in Mojave Desert ecosystems and to identify potential research partners to address SNAP science priorities.

SNAP Science and Research Strategy

Proceedings of the natural resources management workshop (September 13, 2007) were distributed electronically this quarter (April 7, 2007) to workshop participants. Printed and bound copies were provided to members of the Interagency Science and Research Team, and additional copies are available at the Public Lands Institute. The document has also been posted to GroveSite (www.grovesite.com). This workshop resulted in finalization of the SNAP Science and Research Strategy’s natural resource goal (Goal 1), the four natural resources sub-goals -- Fire, Invasive Species, Watersheds and Landscapes, and Biodiversity -- and their associated science questions and contributing questions. The full text of this goal is documented in draft Chapter 4 of the SNAP Science and Research Strategy.

At the request of the SNAP Board, a one-page graphical representation (see attached) of the overall SNAP Science and Research Strategy was prepared over the course of the last two quarters. The design and content of the summary sheet has been approved by the S&R Team, and it was submitted to the SNAP visual arts office for final review (May 19, 2008). Upon approval, this summary sheet will be used in a variety of future outreach efforts. Discussions centered around the development of this document also provided a framework for finalization of the SNAP Science and Research Strategy’s operational approach goal (Goal 3). The full text of this goal is documented in draft Chapter 4 of the SNAP Science and Research Strategy.

A major focus this quarter has been on preparing chapters of the SNAP Science and Research Strategy document. The draft chapters listed below were provided to Mr. Turner (ATR) and the other members of the S&R Team on June 22, 2008 and made available on GroveSite (www.grovesite.com) as a 97-page document.

Draft Preface
Chapter 1 - Introduction
Chapter 2 - Organization and Responsibilities
Chapter 4 - SNAP Science Needs and Priorities
Chapter 5 - Solicitation, Review and Selection of Science Proposals
Chapter 6 - Current Research Activities Support SNAP Science needs
Chapter 7 - Outreach Strategy
Chapter 10 - Funding and Timelines

A two-day meeting (May 25-26, 2008; see attached minutes) was held specifically to review these chapters and discuss a timeline for completing the entire document. Although all members will participate in the review of the
SNAP Science and Research Strategy document, individual S&R Team members have selected specific chapters on which to focus effort, (see attached minutes for specific assignments) and will work with Drs. Miller and Palmer accordingly.

Cooperative Agreement Modification

A modification (Mod 5) to the current cooperative agreement was completed and signed. This modification includes a no-cost extension with a new end date of April 1, 2009. The new due date for the completed SNAP Science and Research Strategy is October 1, 2009.

Margaret N. Rees,           July 1, 2008
Principal Investigator       Date
Attachments
AGENDA
Science & Research Team Meeting
Interagency Building, 4701 N. Torrey Pines Drive

Date: Wednesday, April 16, 2008
Time: 9:00 a.m. – 2:00 p.m.
Attendees: S&R Team members

| 9:00 – 9:10 | Topic: Review of draft agenda  
Presenter: Kent Turner  
Desired Outcome: Team will review and revise (as needed) this draft agenda |
Presenter: Jennell Miller  
Desired Outcome: Team will review S&R Strategy summary sheet for use by the S&R team and the SNAP Board. |
| 9:20 – 11:00 | Topic: S&R Team Presentation to BLM PLMA staff (Apr. 18)  
Presenter: Kent Turner and Jennell Miller  
Desired Outcome: Team will review S&R Strategy PowerPoint for use on Apr. 18 conference call with BLM PLMA staff interested in Round 9 proposal of the S&R team |
| 11:00 – 11:45 | Topic: Goal 3 of Science Strategy  
Presenter: Jennell Miller  
Desired Outcome: Team will review Goal 3 subgoals and discuss tasks for these subgoals |
| 11:45 – 1:00 | Lunch |
| 1:00 – 1:30 | Topic: Land Use Sub-goal Science Questions  
Presenter: Craig Palmer, Carrie Ronning, and Jennell Miller  
Desired Outcome: Team will review and edit proposed land use science questions developed at the March 24 meeting of the ad hoc Land Use team. |
| 1:30 – 1:45 | Topic: Update on Science Strategy Development  
Presenter: Jennell Miller and Craig Palmer  
Desired Outcome: Team will review overall progress of the science strategy including recently completed Peer Review chapter. |
| 1:45 – 2:00 | Topic: Wrap-up  
Presenters: Kent Turner  
Desired Outcome: Confirm next meeting date. Review assignments. |
AGENDA
Science & Research Team Meeting
Interagency Building, 4701 N. Torrey Pines Drive

Date:    Thursday, May 15, 2008
Time:    9:00 a.m. – 2:00 p.m.
Attendees:  S&R Team members, Don Harper & Sarah Peterson

<table>
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<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
<th>Desired Outcome</th>
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<tbody>
<tr>
<td>9:00 – 9:10</td>
<td><strong>Topic: S&amp;R Strategy Summary Sheet</strong></td>
<td>Jennell Miller</td>
<td>Team will review recent updates to the S&amp;R Strategy summary sheet for use by the S&amp;R team and the SNAP Board.</td>
</tr>
<tr>
<td>9:10 – 10:00</td>
<td><strong>Topic: Discussion of Round 9 Proposal</strong></td>
<td>Kent Turner</td>
<td>Federal members of team will review discussions with BLM PLMA staff interested in Round 9 proposal of the S&amp;R team.</td>
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<tr>
<td>10:00 – 10:30</td>
<td><strong>Topic: Science Advisory Board</strong></td>
<td>Craig Palmer</td>
<td>Craig will provide a review of the use of science advisory boards in regional science strategies. The role of a similar group to assist with the SNAP Science Strategy will be discussed.</td>
</tr>
<tr>
<td>10:30 – 11:45</td>
<td><strong>Topic: Land Use Sub-goal Science Questions</strong></td>
<td>S&amp;R Team Members</td>
<td>Team will review proposed Land Use science questions as edited during the past month by team members.</td>
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<tr>
<td>11:45 – 1:00</td>
<td>Lunch</td>
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<tr>
<td>1:00 – 1:30</td>
<td><strong>Topic: Vegetation Mapping for Clark County</strong></td>
<td>Don Harper (GIS Team Leader) and Sarah Peterson</td>
<td>Team will be updated on several proposed or ongoing vegetation mapping initiatives in Clark County. The GIS team will gain an understanding of the S&amp;R Team’s priority needs for vegetation mapping in the County.</td>
</tr>
<tr>
<td>1:30 – 1:45</td>
<td><strong>Topic: Update on Science Strategy Development</strong></td>
<td>Jennell Miller and Craig Palmer</td>
<td>Team will review an updated outline of the science strategy.</td>
</tr>
<tr>
<td>1:45 – 2:00</td>
<td><strong>Topic: Wrap-up</strong></td>
<td>Kent Turner</td>
<td>Confirm next meeting date (June 25 &amp; 26). Review assignments.</td>
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## AGENDA
Science & Research Team Meeting
USGS, Las Vegas Field Station
160 N Stephanie, Henderson, NV 89074

**Dates:** Wednesday, June 25 and Thursday, June 26, 2008  
**Time:** 9:00 a.m. – 4:00 p.m. (Wed.), 8 a.m. – 12:30 p.m (Thurs.)  
**Attendees:** S&R Team members

### Wednesday, June 25

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter(s)</th>
<th>Desired Outcome</th>
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<tbody>
<tr>
<td>9:00 - 9:30</td>
<td><strong>Overview of Science Strategy Development</strong></td>
<td>Jennell Miller and Craig Palmer</td>
<td>Team will review status of each of the chapters. Timeline will be developed for completion of next drafts of chapters and associated team reviews.</td>
</tr>
<tr>
<td>9:30 - 10:30</td>
<td><strong>Process for annual prioritization of research needs</strong></td>
<td>Craig Palmer</td>
<td>Team will develop a process that can be used in the future to prioritize research needs on an annual basis.</td>
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<tr>
<td>10:30 - 10:45</td>
<td><strong>Break</strong></td>
<td></td>
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<tr>
<td>10:45 - 11:45</td>
<td><strong>Prioritization of research needs for FY09</strong></td>
<td>Kent Turner</td>
<td>Team will pilot the newly developed prioritization process by selecting priority research needs for SNPLMA Round 10 from Goal 1 (Natural Resources) science questions.</td>
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<tr>
<td>11:45 - 1:00</td>
<td><strong>Lunch</strong></td>
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<tr>
<td>1:00 - 1:30</td>
<td><strong>Land Use Research Priorities</strong></td>
<td>Craig Palmer</td>
<td>Team will finalize land use research questions</td>
</tr>
<tr>
<td>1:30 - 2:45</td>
<td><strong>Cultural Team Research Priorities</strong></td>
<td>Craig Palmer</td>
<td>Team will review and finalize research questions from the Cultural Resources Team.</td>
</tr>
<tr>
<td>2:45 - 3:00</td>
<td><strong>Break</strong></td>
<td></td>
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<tr>
<td>3:00 - 3:15</td>
<td><strong>Education Research Priorities</strong></td>
<td>Craig Palmer</td>
<td>Team discusses a process for identifying an Education sub-goal and associated science questions.</td>
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<tr>
<td>Time</td>
<td>Topic</td>
<td>Presenter</td>
<td>Desired Outcome</td>
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<tr>
<td>3:15 – 4:30</td>
<td><strong>Recreation Team Research Priorities</strong>&lt;br&gt;Presenter: Craig Palmer&lt;br&gt;Desired Outcome: Team will review and finalize research questions from the Rec. Team.</td>
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<td>8:00 – 8:30</td>
<td><strong>Prioritization of research needs for FY09</strong>&lt;br&gt;Presenter: Kent Turner&lt;br&gt;Desired Outcome: Team will pilot the newly developed prioritization process by selecting priority research needs for SNPLMA Round 10 from Goal 2 (Human Interaction) science questions.</td>
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<td>8:30 – 9:45</td>
<td><strong>Chapter 2 Organization and Responsibilities</strong>&lt;br&gt;Presenter: Jennell Miller&lt;br&gt;Desired Outcome: Team will review proposed organizational charts for Chapter 2 along with associated responsibilities.</td>
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<tr>
<td>9:45 – 10:00</td>
<td><strong>Planning for next meeting</strong>&lt;br&gt;Presenters: Kent Turner&lt;br&gt;Desired Outcome: Confirm next meeting date. Review assignments.</td>
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<tr>
<td>10:00 – 10:55</td>
<td><strong>Break</strong> (Craig &amp; Jennell will be excused from remainder of meeting)</td>
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<tr>
<td>10:15 – 12:30</td>
<td><strong>Finalization of Round 9 Proposal</strong>&lt;br&gt;Presenter: Kent Turner&lt;br&gt;Desired Outcome: Federal members of team will discuss final edits to SNPLMA Round 9 proposal.</td>
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Interagency Science and Research Team Meeting

Participants

Interagency Science and Research Team:
  Kent Turner, NPS (Team Lead)
  Carrie Ronning, BLM
  Amy LaVoie, USFWS
  Randy Sharp, USFS
  Craig Palmer, UNLV PLI (Project Manager)
  Jennell Miller, UNLV PLI

Upcoming Meetings

  May 15, 2008    |  9am to 3pm  |  Interagency Building FWS Conference Room
  June 25 & 26, 2007  |  9am to 5pm  |  Location TBD

Science and Research Team Action Items

Please note: For organization due to the large number of action items required in the upcoming weeks, actions are listed after each discussion topic of the meeting.

Meeting Summary

1. Interagency Science and Research Strategy Summary Sheet
   Jennell presented the revised draft SNAP Science and Research Strategy graphic summary sheet to the Interagency Science and Research Team (S&R Team). The general design was agreed upon, and thus it was decided that the place-holder photos be replaced with final photos and that the circle arrow graphic -- demonstrating the cyclical nature of Goal 3 Approach -- be made into a “watermark” and placed behind the text.

   ▶ Team members will e-mail photos to Jennell.
   ▶ Jennell will continue to refine the placement of text in the section dedicated to Goal 3 and make the adjustments to the circle arrow graphic.
2. **S&R Team presentation to BLM SNPLMA staff on April 18** The Federal members of the S&R Team were requested to meet on April 18, 2008 with BLM SNPLMA staff, including, among others:

- Jane Freeman, Special Legislation Program Manager, BLM Nevada State Office
- Nora DeVoe, CESU Coordinator, BLM Nevada State Director’s Office
- Nancy Christ, SNPLMA Conservation Initiative Project Specialist, BLM Las Vegas Field Office
- Kenda Tucker, Chief of Contracting, BLM Nevada State Office

The S&R Team will provide background information about the SNAP Science and Research Strategy and the Round 9 Conservation Initiatives proposal. Kent led an activity (during this portion of today’s meeting) to revise and update the S&R Team PowerPoint, which has been presented in various forums over the last year, including to the SNAP Board on January 25, 2008. All Federal S&R Team members will be available to co-present the resulting updated PowerPoint on April 18; members also discussed which portion of the presentation each would deliver. Craig Palmer provided a synopsis of the informational research conducted regarding efforts of other strategies, which contributed to the SNAP Science and Research Strategy. Jennell updated the PowerPoint as the S&R Team directed and transferred the file to Carrie’s and Amy’s USB flash drives.

► Carrie or Amy will bring the presentation file, along with a laptop computer and projector to the April 18 meeting.

3. **Goal 3 of the SNAP Science and Research Strategy**

The S&R Team reviewed Goal 3 sub-goals and suggested draft tasks for each. The results of this discussion are shown below.

**Goal 3**

*Promote scientifically informed and integrated approaches to effective, efficient, and adaptive management*

3.1 **Develop and maintain a science strategy to guide and facilitate Southern Nevada resource management decisions to achieve SNAP Science and Research goals 1 and 2.**

**Tasks**

- Provide adequate funding to maintain the strategy
- Maintain the S&R Team for staffing and coordination of the program and any other workgroups or boards needed to operate the strategy
- Convene a science advisory board
• Review and update the strategy as necessary, sub-goals and science questions every five years, and prioritize needs annually prior to annual budget decisions
• Analyze information and recommend additional needs and/or management actions

3.2 Establish a transparent process for interagency and interdisciplinary analysis and assessment of SNAP Science and research proposals, projects, and products.

Tasks
• Publish results (require submission to journals and presentations at conferences in contracts and we should publish the results as well – in greater detail than quarterly reports – this could be on the projects web sites)
• Implement an annual peer review for all science proposals independent of funding source that would tier off of annual prioritization
• Develop a web site for the strategy
• Establish a procedure for review of results and findings for recommendations and produce an annual prioritization work plan

3.3 Ensure effective dissemination of knowledge and sharing of data, results, data collection and management systems, staff, and resources among SNAP agencies, its teams, and partners.

Tasks
• Share data and knowledge through meetings, workshops, and symposia
• Annual reports, five-year reports (mechanism to certify, receive, and analyze/synthesize/interpret data.)
• Facilitate delivery of agency and cooperator data and information to inform SNAP Science and Research Strategy goals

3.4 Engage the broader scientific community through outreach and partnership participation and by seeking their input and resources to meet priority research needs.

Tasks
• Science Advisory Board
• Publish an annual needs assessment
• Host workshops and symposia
• Collaborate with other organizations with similar goals and interests (DMG, Mojave Initiative, etc) and participate in their symposia and workshops
• Develop and implement a marketing strategy to engage the broader scientific community (Web-page, fact sheet, pamphlet, etc)
3.5 Implement an adaptive management process to synthesize Southern Nevada science and research findings that inform and improve future management decisions and actions.

Tasks
- Fill gaps
- Identify measurable short and long-term indices of success
- Contract for state-of-the-science analysis every five years or find organizations already do this regularly (so we can use them)
- Hold regular meetings with the SNAP board targeting discussions on synthesis findings and management implications
- Synthesize findings

A suggested task under sub-goal 3.1 is to convene a science advisory board. The question was raised, “Under which sub-goal does the advisory board fit?” The S&R Team felt the board could fit under various sub-goals, but ultimately decided that as part of the programmatic organizational structure, 3.1 made the most sense. Craig asked the team to consider the role for the board. The results of this discussion, which will be re-visited at a future meeting, are listed below.

SNAP Science and Research Strategy Advisory Board:
- should be invited from UNR, UNLV, USGS, DRI, and agency research stations;
- will provide input in conflict-of-interest issues and should have no conflict of interest, themselves, in serving on the board;
- will provide scientific and technical expertise;
- will assist in finding opportunities to leverage institutional research, resources, dollars;
- will provide a peer review of the SNAP Science and Research Strategy; and
- Will provide credibility to the strategy and SNAP Science and Research projects.

Craig will review the roles of Science Advisory Boards in other regional science strategies and present these findings at the next team meeting on May 15.

4. Goal 2 Land use sub-goal
Craig, Jennell, and Carrie met with the ad hoc land use committee on March 24, 2008. The committee brainstormed science and research questions and distilled their results into science questions and contributing questions (see below), with the understanding that the S&R Team would further refine their results. Each team member chose a science question to work on.
Draft Science Question: What are the impacts of authorized land uses and how do we best mitigate them? (Amy to edit)

- What are the impacts of habitat fragmentation on wildlife?
- What impacts result from linear disturbance?
- For some of the uses that generate noise and light pollution, what are the impacts on species?
- What is the history of invasion of exotic species along rights of way? How has that contributed to invasion?
- What happens if you have an island of disturbance (e.g., inholding) within a natural area?
- Which stipulations are most ecologically effective and cost effective for minimizing impacts? (e.g., flood control and tortoise fence vs. on-site specialist/biological monitor)
- Will the use encourage other uses (e.g., power line corridors might encourage OHV uses or dumping)?
- What is the impact of introducing towers (e.g., power lines, cell) into an otherwise low-shrub community (e.g., Paiute Valley)?
- What is a good, economical, and practical way of controlling soil erosion without impacting sensitive plants and animals?
- Where can we situate solar energy/wind energy projects for the least impact? What is the impact of the shadows from the panels?
- Regarding access roads into mines, what is the impact of paving the road vs. watering three times per day on air quality?
- How much disturbance can plant and animal communities tolerate (i.e., Where would you put the power line if you knew)? Which plant and animal communities are more tolerant to disturbance?
- How do you design roads to minimize impact on desert bighorn sheep? How can it be required that roads are designed accordingly (also appropriate under policy)?

Draft Science Question: How do we effectively monitor during land use and monitor, restore, and reclaim post land use? (Kent to edit)

- Regarding long-term mining projects, does salvaging yucca and cactus actually work?
- What is the most effective way for reclaiming an area after use?
- Salvaging top soil for long-term mining projects, what percentage of what we salvage actually survives over time?
- Does re-seeding work to restore a site? What are best practices for successful re-vegetation?

Draft Science Question: How can we understand and respond to local and visiting populations’ needs on public lands related to authorized land uses (Randy to edit)

- How can we incorporate respect for and understanding of the uniqueness of the landscape and build relationships with and awareness of special areas? Land ethic
- How can we develop connectivity between the urban population and their natural surroundings?
• What is the expected future need for land use in southern Nevada? Have we planned for it?
• To maximize opportunities for viewpoints, interpretation, etc., how can we coordinate disturbances with interpretation and other positive land uses?
• How can we understand resident/visitor needs and expectations related to land use?
• Social science questions

Draft Science Question: What processes and policies affect sustainable land-use planning and decision-making?
(Carrie to edit)
• How do we know the 20+ stipulations we put in our SOPs are successful, what is success? Who monitors it?
• How do we increase capacity of rights of way without making corridors wider?
• How can we collaborate with agencies to protect special areas in advance of land sales?
• How can science help our politicians write better special legislation? (e.g., moving the corridor?) How can the public be more involved?
• How can potential applicants/land-developers consider science as part of their decision-making processes?

Other
• What distance from urban areas can sand and gravel operations exist, how far is too far? What is the economic impact?
• “How do we use science to know when to care?” What are the best uses of various parcels?

▶ Each team member will provide suggested edits to their assigned land use science questions at the next team meeting on May 15.

5. Update on Science and Research Strategy Development
Craig reviewed the progress of the strategy. Jennell provided the draft peer-review chapter for the team’s review. The team quickly reviewed the document and provided comments on the background section of the chapter.

▶ Jennell will make the discussed changes to the background section and e-mail it to the team tomorrow.

Meeting adjourned at 5:15 pm
Interagency Science and Research Team Meeting

Participants

Interagency Science and Research Team:
  Kent Turner, NPS (Team Lead)
  Carrie Ronning, BLM
  Amy LaVoie, USFWS
  Randy Sharp, USFS
  Craig Palmer, UNLV PLI (Project Manager)
  Jennell Miller, UNLV PLI

Guests: Don Harper (GIS Team Lead) and Sara Peterson (BLM Hydrologist)

Upcoming Meetings

Interagency Science and Research Team Meetings:
  June 25 and 26 │ 9am to 4pm │ Water Safety Building (to be confirmed by Kent)

Science and Research Team Action Items

Please note: Actions are listed after each discussion topic of the meeting.

Meeting Summary

1. **Interagency Science and Research Strategy Summary Sheet**
   Jennell presented the revised draft SNAP Science and Research Strategy graphic summary sheet to the Interagency Science and Research Team (S&R Team). The new version reflected the following changes: The place-holder photos had been replaced with final photos; the circle graphic demonstrating the cyclical nature of Goal 3 approach had been made into a watermark and placed behind the text, which was shifted and re-laid out accordingly; the words “Contributing Questions” were removed from each sub-goal; and a draft summary sentence was placed under the title to provide context for the document. Within the summary sentence, Carrie suggested that the word “cross-boundary” be replaced with “interagency” to be consistent with the wording of the S&R Team mission. The other members agreed that with the completion of this change, the graphic summary sheet would be considered finalized.

   ➤ Jennell will replace the word “cross boundary” with “interagency.”

2. **Advisory Board**
   Craig presented information about the similarities and differences among the key roles of science advisory boards described within other science strategies, including the Northwest Forest Plan, Comprehensive Everglades Restoration Plan/South Florida, Chesapeake Bay

May 15, 2008
9:00am to 2:00 pm
Interagency Building
Forest Service Conference Room
4701 N. Torrey Pines Drive
Las Vegas Nevada 89130

Quarterly Progress Report ● Interagency Science and Research Strategy
Science Plan, Grand Canyon AMP, Lower Colorado MSHCP, Contra Costa County Habitat Conservation Plan, US Commission on Ocean Policy, and others. Craig then provided a list of the common attributes and/or duties of the science boards he studied. Science (advisory) boards are:

- Independent;
- Make review processes and other activities scientifically defensible;
- Assist in or conduct peer-review of proposals to competitive grants (i.e., may select the reviewers or do it themselves);
- Synthesize reviews;
- Make funding recommendations;
- Review reports, synthesis reports, plans, any other product (e.g., recovery plans, intermediate products leading to recovery plans);
- Some conduct programmatic reviews (e.g., oyster research program);
- Prioritize activities (e.g., provide an annual list of topics, emerging science needs, and annual needs assessment);
- Facilitate or are involved in the planning of technical conferences or workshops;
- Develop white papers (syntheses), technical reports (e.g., Northwest Forest Plan, South Florida, Chesapeake Bay);
- Scope out the above documents;
- If specific issues arise, they can provide support (e.g., perform a general advising role on science issues – providing a broader view and independent advice).

Kent noted that the S&R Strategy Science Board would be helpful in possibly setting priorities for the Southern Nevada Restoration Team (SNRT) in helping to define tracking and evaluation tools as well as priorities for weed management.

Kent also encouraged the S&R Team to consider a role for the Science Board in trying to promote and leverage funding; for example, the board associated with the Desert Managers Group actively looks for funding. This board has the potential to form collaborations with the broader research community and to seek joint funding outside of SNPLMA.

Carrie reminded the team that if non-government scientists such as those from universities are representatives inside the process, their participation would give them an unfair advantage. She posed the question: “In that case, would the university no longer be available to participate?” It was also added that the people most intimately involved in the process would be those best suited to describe the process, participate in grant writing (to outside funding sources), and then complete the projects. Conflict of interest is a very important and complex issue that the S&R Team will have to work through. Randy recommended that the team decide on a role for the board before they settle on a structure for how the board should operate.
It was noted that the team has no funding to pay outside scientists to serve on the board. Presently, participants will have to pay for their own time. Additionally, there may need to be more than one board or panel to complete the various activities. Kent pointed out that similar to the case of representatives on non-profit board, a university dean is not going to write synthesis reports but may be very helpful in identifying and leveraging funds. It should also be emphasized that while the future board will provide suggestions and advice, the S&R Team is responsible for interpreting the advice and taking action. All information is balanced with management needs and, ultimately, management makes the decisions.

At Randy’s suggestion, the S&R Team listed what they would like to see in the SNAP S&R Advisory Board. This information will form the basis for the roles and responsibilities chapter in the strategy. The S&R Team agreed that the board should be called the “SNAP Science Panel” and its activities and roles were brainstormed as follows:

a. Conduct peer review or identify suitable peer reviewers;

b. Assist in prioritization of needs, emerging issues, and next steps;

c. Provide needed information;

d. Review the strategy itself – especially prioritization and next steps;

e. Review future strategy updates;

f. Review synthesis documents;

g. Serve as or identify ad hoc groups for advice available at any time (e.g., How can the strategy help with quagga mussels, for example? Does the strategy need to be updated to accommodate an emerging need? etc.);

h. Leverage existing and find new resources (note: this would possibly be a different panel);

i. Helps the S&R Team every year in looking at SNAP needs assessment;

j. Provide scientific review of various programs (e.g., what is the effectiveness of education, restoration, etc.) The process of synthesis shows the gaps in your process so it can be amended. (Note: This service could be contracted out at the time of need because it would take more work than a panel could provide, but the panel could review the resulting products. Perhaps agency staff could be found to perform a programmatic review. The team considered the possibility of forming an interagency group, wherein experts from each agency could be brought in from other geographical areas.)

k. Assist in the organization of symposia or workshops on specific topics of interest.

Carrie also noted that having a FACA-compliant group is not necessarily a problem, if that is how the panel is defined from the start. FACA stipulates that a group be open to the public for a comment period. This way, the public can see what the strategy is about. Note, however, that meetings would then have to be listed on the Federal Register of Meetings.
Jennell will create a table of tasks and responsibilities similar to the sample e shown below for all the responsibilities related to the activities discussed and provide it electronically to the team for comment and editing.

Team will review the table and respond with edits within two weeks.

<table>
<thead>
<tr>
<th>Task</th>
<th>S&amp;R Team</th>
<th>SNAP Science Panel(s)</th>
<th>SNAP Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesis Document</td>
<td>Team sets priorities for development of synthesis reports</td>
<td>Panel reviews the Synthesis Report</td>
<td>Review and approve</td>
</tr>
</tbody>
</table>

3. Land Use Sub-goal Science Questions
The team noted that this sub-goal tended to be very repetitive or redundant with natural resource sub-goals. They narrowed the purpose of this sub-goal down to addressing “What is the science of land use?” They decided to take the following actions:

a. Combine the first two questions to reflect: What are the impacts, how do we mitigate them, and how do we monitor them?
b. Take out all recreation-related questions and move them to the recreation sub-goal.
c. Redefine the science questions as:

1) What are the impacts of authorized land uses?
   - How do you monitor?
   - How do you mitigate/minimize?

2) What are the demands for resources on public lands?

Contributing questions will be moved under the appropriate science question. Some questions may have to be cross-walked with other sub-goals. It is important to maintain the emphasis that some questions are applicable to several disciplines.

Team members will edit and place contributing land-use questions under the new science questions (above) for the next meeting. Kent and Amy will work on the questions related to impacts and Randy and Carrie will work on the questions related to demand.

4. Special Topic: Conceptual Models
Kent asked the team to consider the use of conceptual models. Where do conceptual models fit within the strategy? Conceptual models are often included in most monitoring plans.
Craig suggested that perhaps a chapter should be developed that describes the role of conceptual models and the existing, relevant models (e.g., those developed for the NPS vital signs, Clark County’s ecosystem models, and Cultural Resource Team’s historic context models). Kent did not feel that the current strategy outline should be changed, but that some discussion of conceptual models should be included. He emphasized that it is important to say how SNAP science and research activities might interact with these models in the future or how they should be considered for proposal development. Kent reflected that we may have skipped this step…we have monitoring and research questions arrived at from the agency specialists who know the models. The assumption was that those people brought their understanding of ecological models to the table. When the participated in forming the questions.

Regarding synthesis reports, Kent added, there was a lot of good detail that came out of the May workshop about the state of information in Clark County within the appendices of the Desert Research Institute (DRI) product. These documents should be referred to again in the preparation of synthesis documents.

Regarding the Agency Capabilities chapter, Carrie added that there are research capabilities within the SNAP-participating land management agencies. For example, it will be important to describe the Lake Mead NRA greenhouse and the BLM-owned desert tortoise research center.

5. **Special Topic: Round 9 Proposal**
   The Federal members of the S&R Team held a special session over lunch to discuss the Round 9 proposal and the results of their presentation to the BLM Nevada State Office.

4. **Vegetation Mapping for Clark County**
   Don Harper (GIS Team Lead) and Sara Peterson (BLM Hydrologist) updated the S&R Team on several proposed or ongoing vegetation mapping initiatives in Clark County. Sara stated that a QuickBird Conservation Initiative project titled, “High-resolution Satellite-imagery Technology to Advance Natural Resource Management” was funded for $2.8 million in SNPLMA Round 5. Don and Sara asked that the S&R Team apprise them of priority needs for vegetation mapping in Clark County based upon the Science and Research Strategy.

Sara and Don reported that other entities are working on similar mapping projects. For example, the University of Nevada, Reno (UNR) has submitted a MSHCP proposal for approximately $1.2 million. The question was raised, “Should this be part of the adaptive management program?” A priority question is whether mitigation is working on the landscape, in other words, what is the health of the landscape? It was noted that QuickBird imagery obtained through the Round 5 funds has already been given to UNR (i.e., Jill Heaton). Other projects include vegetation and habitat mapping along the Virgin River for the purposes of Tamarisk removal by SNRT. The
USGS is mapping at Gold Butte. If each of these projects use the same standards, Don explained, the work could be put together. Don met with Lee Bice and Matt Hamilton of Clark County to discuss the UNR proposal and how these projects might work together. Lee and Matt said the County is open to working with UNR and participating in a coordinated effort. Don also noted that David Charlet (CCSN) has been hired to do some of the on-the-ground work for vegetation mapping for the QuickBird Project. This is an indicators project, which overlaps with DRIs conceptual models. In another project, SNWA is mapping the Muddy and Virgin Rivers at the Lake Mead confluence using their own protocols for hydrology and phreatophyte consumptive water use.

Don stated that the USBR Denver office personnel who have done mapping for NPS estimate that it costs $1 per acre to complete vegetation mapping at 1:24,000 scale, and there is approximately $1 million left in QuickBird Project.

Sara stated that the project started at Red Rock NCA; this work will be finished in a month or so. She now needs to have a list of which other areas are important to the S&R Team and for what purpose. At their last meeting, the SNAP GIS team recommended that S&R Team provide these priorities based on the S&R Strategy goals.

Randy asked Sara and Don why the Red Rock site was chosen and for what purpose the mapping done. He explained that before $2 million more is spent on this, the project needs to be scoped out with the right people. For example, the Forest Service may be interested in having the Spring Mountains re-mapped or having their existing maps refined. Randy suggested that Joann Baggs weigh in on this.

Craig emphasized the importance of providing the GIS Team with a list of priorities so that they can obtain the correct images at the correct resolution. He suggested that the team highlight the questions in the science strategy to which QuickBird imagery would be relevant. Craig also suggested that the Red Rock NCA imagery be used as a pilot to see if the questions that the S&R Team wants answered can be answered by what has been obtained, before moving on to the next area.

Kent reflected that it is going to be hard to re-capture all the potential questions that COULD be answered. Kent agreed with Craig’s idea to use the Red Rock imagery as a pilot to see which of the existing strategy questions (e.g., habitat or vegetation) can be answered with the existing protocol. The next question to ask will be, "Does the protocol have the potential to provide information for contributing questions?" This needs to be done before extending outward to some other priority area. We need to get the appropriate technical staff together: to determine imagery needs for soil indicators, a workshop should be conducted with the appropriate agency specialists. What are the questions, what are the available technologies? It would be nice to see what USGS has been able to accomplish so far.
Randy concurred providing questions: What are the sensitive species, what are their key habitat requirements? If we knew that, we would know what to map (e.g., understory, grasses are important to fire). Amy agreed and suggested that the S&R Team identify science questions and contributing questions that could help them to know what it is that we want out of the mapping, level of detail, and where to put their effort.

Meanwhile, the S&R Team will create a list of priority geographical areas. At the present, it seems like these areas will be the Spring Mountains and ACECs, also critical habitats on the Gold Butte or along the River Mountains around ACECs.

▶ Sara will provide the S&R Team with a clip of the product from the USGS so team members can show it to their specialists.
▶ Don and Sara will check with Clark County to see what they are doing and not doing.
▶ S&R Team will arrange a meeting with technical people to review what we have, for this the following should be considered:
   a.) S&R Team will identify and distill relevant questions
   b.) S&R Team will create a very specific list (the more specific, the better) of areas to map
   c.) If she has the specific list, Sara could go back and ask for money from SNPLMA;
   d.) Lee and Matt are not going to prioritize because they are waiting to see what GIS Team comes up with then fill in the holes;
   e.) A meeting with the USGS and appropriate agency people will likely be needed.

▶ Amy and Randy will talk with Joanne Baggs and get back with Don and Sara; Joanne will be in the area on the 22nd.

Don and Sara summed up by stating that none of the agencies can map all of the areas due to time and funding constraints; this is why it is so important to set priorities.

-- Meeting adjourned at 2:00 pm.
Interagency Science and Research Team Meeting
-- DRAFT --

Participants

Interagency Science and Research Team:
	Kent Turner, NPS (Team Lead)
	Carrie Ronning, BLM
	Amy LaVoie, USFWS
	Randy Sharp, USFS
	Craig Palmer, UNLV PLI (Project Manager)
	Jennell Miller, UNLV PLI

Upcoming Meetings

Interagency Science and Research Team Meetings:

July 21, 2008 | T.B.D. | Kent and Carrie will meet to work on the “contributing directives” section of the strategy. Team members must review and add to Carrie’s draft list prior to July 21. Location T.B.D.

July 28, 2008 | 8:30 am to 5 pm | S&R Team Meeting to finalize Chapter 5 and priorities. The team will also begin preparation of their presentation to the SNAP Board. Kent will arrange use of the USGS conference room with Dan Bright.

Aug. 18, 2008 | T.B.D. | S&R Team Meeting to finalize presentation to SNAP Board. Location T.B.D. (Possibly Webinar)


Science and Research Team Action Items

Actions are listed after each discussion topic of the meeting and are indicated by the ➤ symbol.

Meeting Summary

Topic: Modification Announcement

Kent announced that a modification (no-cost extension) to the CESU task agreement between NPS and UNLV for the Interagency Science and Research Strategy has been approved. The new
end date for the agreement is April 1, 2009 and the completed SNAP Science and Research Strategy is due October 1, 2008.

**Topic: Overview of Science Strategy Development**

On June 22, 2008, Jennell e-mailed members of the Interagency Science and Research Team (S&R Team) a PDF compilation of the available draft chapters. Corresponding Word documents were distributed on CD at today’s meeting. The S&R Team provided broad feedback on their impressions, which are captured below:

- It is appropriate to retain succinct background information in some chapters, however much of the background and rationale content should be moved to an appendix that can be referenced to as needed. This will improve the document’s usability.
- Replace “University of Nevada, Las Vegas,” and “UNLV” with “science and research cooperator.” All entity-identifying terms should be made as generic as possible.
- Replace capital letters in “Interagency Science and Research Strategy” with lowercase letters throughout the document.
- Find appropriate replacements for the terms “collaborate, collaborative, and collaborator” where possible.
- Rewrite to shift focus to the future and decrease emphasis on past and current activities.

In addition, Kent recommended that 4-5 pages of content be prepared to describe the body of knowledge (beyond the agency, interagency, and management goals) that has gone into the development of the SNAP Science and Research Strategy’s goals, sub-goals, science questions, and contributing questions. This section of the strategy should distill and synthesize the results of the ecological health workshops and the UNLV workshop. It will also acknowledge efforts, processes, and directives such as the USGS conceptual models, the workshops for the Tortoise Recover Plan, the Biannual Adaptive Management Reports (BAMR), Colorado Recovery Plans, Conservation Management Strategies, Habitat Management Plans, the Conservation Agreement for the Spring Mountains, landscape assessments, and others. Awareness of and participation in these efforts by S&R Team members has informed the team in identifying important science and research needs; it is important to document this knowledge and demonstrate that the strategy is well-informed from a variety of angles.

This new section should emphasize that this is a management-driven strategy and is to be developed according to the following outline:

A. Citation List
B. Summary of directives, lessons learned, and key information
C. A very brief summary of key regional documents (e.g., CMAs and BAMRs)
D. A brief highlight summary of our own workshops with key findings

- Carrie will pull together a list of documents that she knows of and e-mail it to the team ASAP. Other members will review and add to the list by July 21.
Carrie and Kent will meet on July 21 to develop this section.

Chapters 3, 8, 9, and 11 are not yet available in draft form. Craig stated that these chapters would be ready for review by the next meeting. The team agreed that the best approach for completing and finalizing the chapters is for all members to review all chapters. Then individual members will choose specific chapters on which to focus, and will be responsible for working with Craig and/or Jennell on their selected chapters.

The team agreed to the following chapter assignments:

<table>
<thead>
<tr>
<th>Chapters</th>
<th>Members and notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduction</td>
<td>all – final review</td>
</tr>
<tr>
<td>2 Organization and Responsibilities</td>
<td>Jennell will rework this chapter followed by a final review by all team members</td>
</tr>
<tr>
<td>3 Adaptive Management</td>
<td>Carrie + Craig</td>
</tr>
<tr>
<td>4 SNAP Science Needs and Priorities</td>
<td>Amy + Jennell Information is still outstanding for the two cultural resources sub-goals; Tami Lucero will be invited to assist in coordination with the CRT; Amy will prepare the “dirty dozen” list of key species</td>
</tr>
<tr>
<td>5 Solicitation, Review, and Selection of Science Projects</td>
<td>Team needs to select a member to work with Jennell</td>
</tr>
<tr>
<td>6 Current Research Activities</td>
<td>Kent + Jennell</td>
</tr>
<tr>
<td>7 Outreach</td>
<td>Randy + Jennell</td>
</tr>
<tr>
<td>8 Quality Assurance</td>
<td>Carrie + Craig Craig will draft this chapter, however, he will need assistance with the issue of how to implement quality assurance</td>
</tr>
<tr>
<td>9 Science Coordination</td>
<td>Kent + Craig and Jennell</td>
</tr>
<tr>
<td>10 Funding and Timelines</td>
<td>Amy + Jennell</td>
</tr>
<tr>
<td>11 Continual Improvement</td>
<td>Randy + Craig</td>
</tr>
<tr>
<td>Appendices</td>
<td>• Need to move rationale content from chapters into an appendix • Need to create an appendix describing the history and development of the science and research strategy • Complete glossary</td>
</tr>
</tbody>
</table>

The S&R Team discussed dates for completing the next drafts of the various chapters and their associated reviews. BLM staff is required to submit CI concept proposals in mid-July; only concepts submitted during July may be developed into full proposals.

Following discussion, the S&R Team set a target date of mid-August to have the near final version of Chapter 5 ready for presentation to the SNAP Board, who will be meeting on August 22. However, the S&R Team does not wish to have this chapter peer reviewed separately from the rest of the strategy; so the draft presented to the SNAP Board will have not yet been peer reviewed.
reviewed. Along with Chapter 5, the team will also present the strategy’s first year priorities and ask for the SNAP Board’s approval.

- Kent will arrange use of the USGS conference room with Dan Bright for an S&R Team meeting on July 28, 2008 (8:30 am to 5:00 pm) to finalize Chapter 5 and first year priorities. At this meeting, the team will also begin to draft their presentation to the SNAP Board.
- Jennell will arrange for a conference call and Webinar to take place on August 18, 2008. The purpose of this meeting is for the S&R Team to prepare their presentation to the SNAP Board. If Jennell is unable to arrange for the Webinar, Carrie will assist in setting it up.
- Kent will contact Tami to request time on the agenda of the SNAP Board’s August 22, 2008 meeting for an S&R Team presentation.

**Topic: Process for Annual Prioritization of Research Needs**

The S&R Team discussed the future process to prioritize research needs on an annual basis. The S&R Team considered the key decision dates of the USGS and BLM, and factored that information into the resulting timeline for annual prioritization.

- USGS Concept Proposals for small, internally funded project work are due every June 30.
- BLM Concept papers for SNPLMA nominations are due in mid-July.
- Clark County sets direction in August.

Therefore, the SNAP Needs Assessment needs to be completed in April and rolled out in May. The S&R Team emphasized that the annual needs assessment allows SNAP to not only solicit interest from other researchers, but also enables SNAP-participating agencies to guide internal programs and gives focus to the type of projects staff should apply for funding to support.

The annual needs assessment involves four major groups:

1. SNAP Board
2. SNAP Science Team
3. Remaining SNAP Teams
4. SNAP Science Panel

The S&R Team envisioned developing the annual needs assessment as follows: The S&R Team (or other future interagency team serving in this role) oversees the process with full disclosure and recommendation to the SNAP Board. The S&R Team requests priorities from SNAP Teams and the SNAP Board (for interagency programs that do not have teams). The S&R Team develops this information into a briefing paper, which it presents at a meeting with the SNAP Science Panel. This meeting results in recommendations. The S&R Team provides the managerial context for the recommendation. A key feature of this process is that input from the SNAP Science Panel flows into the process; it does not drive the process. The SNAP Science Panel can operate
independently, but it reports to the S&R Team. The information flows through the S&R Team to the SNAP Board. The product is a final work plan, which is the annual needs assessment. The list provides a focus of what agencies will need for next year to three years. The S&R Team coordinates the outreach efforts to disseminate the annual needs assessment.

Important considerations:

- Recognize that although the S&R Team prioritizes needs annually, some projects will take 3-5 years to generate data, results, and knowledge. Certain questions can be answered in a shorter timeframe, but others will take years.
- The S&R Team recommends that a more comprehensive, single-sheet template be developed for concept papers. The idea is to provide context and importance for the conceptualized project. By including the annual needs and priority focus areas with 1-page concept papers, the S&R Team, the SNAP Panel, and external researchers will have a better understanding of where needs lie and will be more likely to select such project to work on.
- In the future, the briefing report will include interpretive reports and synthesis documents.
- The SNAP Science Panel includes people who are knowledgeable of the current literature, but are not involved in the daily management perspective. The panel helps inform the S&R Team recommendations of what is important. The combined perspective of the S&R Team and the SNAP Science panel gives the overall context.
- The joint annual meeting between the S&R Team and the SNAP Science Panel should include a state-of-the-science mini-symposium.
- The fairness of how the priorities are ranked by the SNAP Science Panel depends on getting people with broad perspectives. Because the process is qualitative, the S&R Team will have to ensure checks and balances. The roles and responsibilities of members of the SNAP Science Panel have to be clearly defined.
- The needs assessment will be peer reviewed.
- A key difference between the Tahoe program and the SNAP science and research program is that Tahoe’s program is research driven, whereas for the SNAP program, management is driving the process with advice from the scientific community.

The S&R Team also gave some thought to refining the role of the SNAP Science Panel in developing the Annual Needs Assessment (see notes below). This information is covered in Chapter 2 of the SNAP Science and Research Strategy, which was also edited during the course of this discussion.

In preparation of the Annual Needs Assessment the SNAP Science Panel will:

A. Answer the following questions:

   (1) Do we have the right priorities? If not what should they be?
   (2) Are there other priorities we should be working on?
B. Rank the priorities as high, medium, and low.

The S&R Team considered Conflict of Interest as it applies to the future SNAP Science Panel. The question was posed, “How does serving on the SNAP Science Panel affect an individual’s or organization’s ability to work on SNAP projects?” The team concluded that the SNAP Science Panel needs to have external scientists and agency scientists on it. They agreed that developing recommendations for priorities is not the same as reviewing and selecting a project for funding.

Kent: Develop a section of the strategy that defines a conflict-of-interest policy; the section on the role of the panel refers to this section. Conflict of interest comes in when reviewing proposals.

Following substantial discussion, the S&R Team decided that it would invite individuals from the organizations listed below to serve as SNAP Science Panel members:

1. US Forest Service Rocky Mountain Research Station
2. US Geological Survey
3. US EPA – Landscape Ecology (chair)
4. Argonne National Labs

Academic representation from universities participating in CESUs:

5. California University Representative
6. Arizona University Representative
7. Desert Research Institute
8. University of Nevada, Las Vegas
9. University of Nevada, Reno

The Team agreed that the EPA member should serve as Panel Chair.

► Craig will assemble a panel of peer reviewers for the first edition of the SNAP Science and Research Strategy; Carrie and Amy will float the strategy internally with their regional science people; Kent will have scientists from the USGS and the Great Basin CESU Coordinator review the document.

**Topic: Prioritization of Research Needs for FY09**

The S&R Team views setting priorities for FY09 as a “beta test.” For the first year, the team prioritized adherence to the timeline (shown below) over breadth of scope and the potential ability of all teams to participate.

1.) January: SNAP Teams meet. Other interagency staff interact with the SNAP Board. These teams feed information into draft needs assessment (completed by January 30)
2.) February: Draft Annual Needs Assessment

3.) March: Science Panel convenes independently and interactively with the S&R Team, this includes a state-of-the-science symposium and recommendations

4.) April: S&R team makes its final recommendations for draft needs assessment

5.) May: Final Needs Assessment and launching of outreach activities

The S&R Team agreed that although the SNAP Science and Research Strategy is not complete, the SNAP Board is expecting to see some priorities this summer. Within this first report, which will be prepared as a letter to the SNAP Board, the team will discuss priorities for 2009 and express how in the future the team will be able to provide a comprehensive needs assessment.

Within the letter, the team will list the “A-level” science questions listed under each sub-goal. They will also include the rationale for the prioritization. The letter will be a separate document (i.e., not part of the strategy and not an appendix).

It is also important to recognize that the strategy does not provide prioritization across sub-goals. How can anyone say which is more important between, for example, invasive species vs. landscape dynamics? However, in Chapter 10 of the SNAP Science and Research Strategy, it would be possible to expand the funding list to include all funding sources (not just SNPLMA CIs). This would allow one to see which topic areas are under represented in terms of funding.

**Topic: Land Use Research Priorities**

The S&R Team reviewed, edited, and finalized the land-use sub-goal, science questions, and contributing questions as shown below. The science questions are shown in priority order.

**Sub-goal 2.3**
Manage current and future authorized southern Nevada land uses in a manner that balances public need and ecosystem sustainability.

**Science Questions:**

a. What are the impacts of authorized land uses and effective actions to minimize impact?
   - What impacts result from linear disturbance?
   - For some of the uses that generate noise and light pollution, what are the impacts on species?
   - How do authorized land uses contribute to the invasion by exotic species? How can we minimize that contribution?
• How do authorized land uses such as inholdings and site type rights of way affect the quality of surrounding areas?
• Which stipulations are most ecologically effective and cost effective for minimizing impacts? (e.g., flood control and tortoise fence vs. on-site specialist/biological monitor, salvaging yucca and cactus, salvaging topsoil, and reseeding)
• How do existing authorized land uses encourage other unintended or illegal land uses (e.g., power line corridors might encourage OHV uses or dumping)?
• What is the impact of introducing towers (e.g., power lines, cell) into an otherwise low-shrub community (e.g., Piute Valley)?
• What are feasible and effective ways of controlling soil erosion without impacting sensitive plants and animals?
• What are the impacts (e.g., on soil erosion, underground water resources, and species) of installing renewable energy plants? What are the best designs, techniques, and technologies to minimize these impacts?
• How do you design roads to maintain wildlife corridors (e.g., for desert bighorn sheep and tortoise)?
• What are effective road maintenance techniques that minimize resource impacts (e.g., to air/soil/water quality, user safety, and species)?
• How much disturbance can plant and animal communities tolerate (i.e., Where would you put the power line if you knew)? Which plant and animal communities are more tolerant to disturbance?
• What is the most effective way for reclaiming an area after use?

b. What are the demands for resources on public lands?
• How do we increase capacity of rights of way without making corridors wider?
• Where is the potential for future land-use demands (e.g., energy development, transportation, mineral extraction, etc)?
• How do we meet future land-use demands while providing land for other uses (e.g., recreation, species habitat, clean water and air, etc)?
• Where are there demands for sand and gravel operations and how far away from urban areas can they be located to remain cost effective?
• How do we provide for federal land disposals and maintain resource values and areas?

Topic: Cultural Team Research Priorities
To date, no additional information has been received from the Cultural Resources Team following the meeting with group on 10/31/2007. The S&R Team agreed that the next step is to ask Tami Lucero to contact the Cultural Resources Team and request their revised sub-goals (2.1 and 2.2) and the prioritized science questions and contributing questions.

Topic: Education Research Priorities
The S&R Team discussed a process for finalizing the education sub-goal and its associated science questions and contributing questions. The team agreed that Jennell and Craig should set up a meeting with Jennifer Haley to finalize the sub-goal and distill the information below as well as the information generated at the DRI-hosted workshops into focused science questions that can inform management. Kent will participate in this meeting if he is available. Following the development of science questions and contributing questions for this sub-goal, the document will be made available for review and prioritization (not word-smithing) by individuals such as Kathy August, Bob Lowden, Allison Brody, and others as Jennifer suggests.

**Sub-Goal 2.5 (as it currently reads)**

*Establish and maintain an effective public outreach program to improve Southern Nevada resource management.*

Considerations and questions voiced by the S&R Team are captured below:

- What are the most effective ways to conduct outreach and foster stewardship? Are the existing agency programs effective by these standards?
- What messages, outreach methods, and target audiences are needed to reach management goals?
- What are the key components of a comprehensive environmental education plan? What is an effective way of implementing those components?
  1. What are the messages, themes, and ideas to get across?
  2. What are the best ways to get them across? Consider audiences and changing demographics.
  3. How do we measure effectiveness? What are the measurements of success?

Specific questions, which were previously listed under the recreation sub-goal:
- What outreach methods are needed for recreation?
- What types of promotional materials should be developed to increase eco-tourism in Southern Nevada?
- What are our key messages regarding recreation?
- How do we effectively reach non-public land users, specifically children with our messages?
- How do we effectively reach transient residents or short-term visitors with our messages?
- How can we incorporate respect for and understanding of the uniqueness of the landscape and build relationships with and awareness of special areas (land ethic)?

Jennell will set a meeting with Jennifer Haley followed with coordination with other staff who will review and rank priorities, and possibly add additional contributing questions.

**Topic: Recreation Sub-Goal**
Craig, Jennell, and Carrie met with the Recreation Team on 3/24/2008. On 4/23/2008, Deborah sent Craig draft science and contributing questions related to recreation for the SNAP Science and Research Strategy. The S&R Team reviewed the document and edited the sub-goal and its associated science questions and contributing questions as shown below. The science questions are shown in the S&R Team’s priority order.

**Sub-goal 2.4**

Provide for appropriate (type and location), quality, and diverse recreational experiences, resulting in responsible visitor use on federal lands in Southern Nevada.

**a. What are the market demands and trends for recreation on public lands?**

- What is the projected increase in visitation over time?
- What types of use will increase over time?
- What are the likely locations of visitor-use in the future?
- What is the “niche” for each federal agency?
- Where are the opportunities for shared facilities or resources?
- What are effective recreation strategies to meet future demand and trends?

**b. How can the federal agencies meet recreational needs and provide quality recreational experiences without compromising resources?**

- What are the use limits of the resource – identify high and low capacity areas?
  What are impacts of use limits on visitor experience?
- What are ecosystem values for residents and visitors?
- What activities pose impacts to resources or threats to resource integrity?
- How are resources distributed across the landscape in relation to activities that may impact resources or threaten resource integrity?
- What forms of recreation are compatible with sensitive species/habitats in the refuges?
- What is visitor carrying capacity for recreation activities on SNAP lands in relation to sensitive endemic species?
- What human activities occur on SNAP lands and how do they impact the resource and other visitors?
- What activities at what locations pose a higher safety risk?
- What effect does fire have on recreation and the urban interface?

**c. What are current visitor-use patterns and characteristics?**

- What are the cultural differences and trends in hard-to-observe activities such as gathering?
- What is visitor satisfaction with SNAP land areas, including transportation, quality of experience, recreation opportunities, etc.?
- What values are commonly held and what values may conflict?
- What do local and non-local visitors, tribes, adjacent property owners value about SNAP lands and what are their “special places?”
- Who is using public lands in southern Nevada, which locations are most sought after for which uses, and what benefits do they obtain from those lands?

Craig will send the revised sub-goal to Deborah Reardon. The S&R Team invites the Recreation Team to review and respond with comments within a week. If that is not possible, Craig and Jennell will ask to attend the next Recreation Team meeting where the team will review and approve by consensus the revised sub-goal, science questions, contributing questions, and prioritization.

The S&R Team also worked to edit Chapter 2 of the SNAP Science and Research Strategy; Jennell captured the Team’s edits within the actual document. Jennell used information from the S&R Team Charter to describe the role of the S&R Team. The Team noted that some of this information is outdated and needs to be updated in the charter document.

-- Day one of this two-day meeting adjourned at 5:00 pm. On day two, Craig and Jennell were excused at 11:45 am and the S&R Team continued a closed-door discussion about how to revise their Round 9 SNPLMA Conservation Initiative proposal.
SNAP Science & Research Strategy

Creating a consistent, integrated, interagency science and research program to meet shared resource management goals on Southern Nevada public lands.

Goal 1: Natural Resources
- Fire
- Invasive Species
- Watersheds & Landscapes
- Biodiversity

Goal 2: Human Interaction
- Cultural Resources
- Historic Context
- Recreation
- Land Use
- Education

Goal 3: Approach

develop and maintain a science strategy to guide and facilitate Southern Nevada resource management decisions to meet SNAP Science and Research Goals 1 and 2.

Strategic Proposal Solicitation
Circulate annual needs assessment and encourage submission of proposals to meet science and research needs identified within the strategy.

Effective Linkages
Ensure effective dissemination of knowledge and sharing of data, results, data collection and management systems, staff, and resources among SNAP agencies, its teams, and partners.

Synthesis
Implement an adaptive management process to synthesize Southern Nevada science and research findings to inform future management decisions and actions.

Draft 5/15/2008