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Interagency Science and Research: Final Project Report

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FINAL Project Report

Interagency Science and Research Strategy

Cooperative Agreement Number H8R07010001
Task Agreement Number J8R070050004

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This project was funded by the Southern Nevada Public Lands Management Act and delivered by the Public Lands Institute at the University of Nevada, Las Vegas on behalf of and in cooperation with the Bureau of Land Management, National Park Service, U.S. Fish & Wildlife Service, and the U.S. Forest Service.
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Executive Summary and
Concise Statement of Accomplishments

Interagency Science and Research Strategy was a Round 4 Southern Nevada Public Land Management Act (SNPLMA)-funded project administered through the Southern Nevada Agency Partnership (SNAP): the Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the U.S. Forest Service.

The major accomplishment of this project was the development of the SNAP Science and Research Strategy: an 11-chapter document designed to integrate and coordinate scientific research programs in Southern Nevada and improve the efficiency and effectiveness of these programs. The Strategy is intended to inform and guide SNAP agencies in identifying and articulating highest priority science and research needs, sharing resources and funds from other sources, and eliminating redundancy between research programs within their focus areas. The major focus areas of the Strategy are Fire, Invasive Species, Watersheds and Landscapes, Biodiversity, Cultural Resources, Historic Content, Recreation, Land Use, and Education. The Strategy was approved by the SNAP Board in March 2009.

Development of the Strategy also encompassed the following activities:

- Documentation of common science and research goals, sub-goals, and questions that both meet and further the collective needs of each agency and various SNAP Teams through workshops and small meetings.
- Establishment of a timeline and process to identify, evaluate, document, and communicate SNAP’s science and research needs and priorities annually and to synthesize and incorporate completed work on a regular basis.
- Development and use of a two-part review process for proposals, projects, and products related to the SNAP Science and Research Strategy.
- Outreach to potential partners and creation of PowerPoint slides and graphic summary sheet to be used for outreach purposes.

Dr. Craig J. Palmer and Dr. Jennell M. Miller (University of Nevada, Las Vegas; UNLV), on behalf of and in cooperation with SNAP, coordinated this project, facilitated the process, created products, and documented outcomes. Agency members of the interagency science and research team during the course of this task agreement were Kent Turner (Chair; National Park Service), Carolyn Ronning (Bureau of Land Management), Amy M. LaVoie (U.S. Fish and Wildlife Service), and Randall M. Sharp (U.S. Forest Service). A Great Basin Cooperative Ecosystem Study Unit Task Agreement between the National Park Service and at the UNLV Public Lands Institute (UNLV-PLI) established the cooperative relationship, deliverables, and funding mechanism to create the Interagency Science and Research Strategy.
History and Background

SNAP is a four-agency partnership of the Bureau of Land Management (BLM), National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), and U.S. Forest Service (USFS). Through SNAP, these agencies work with each other, the local community, and partners to conserve and enhance the federal lands of Southern Nevada for current and future generations. Since 1999, these agencies have been working together to develop joint programs and projects that provide additional services to the public, improve stewardship of the federal lands, and increase the efficiency and effectiveness of their management activities. To address issues and management projects within key focus areas, the agencies formed interagency teams, one of which is the interagency science and research team. The SNAP interagency science and research team has been organized to develop and implement an interagency science program to inform management decision regarding natural resources, cultural resources and human use of public lands. Agency team members active during the course of this task agreement were Kent Turner (Chair; NPS), Carolyn Ronning (BLM), Randall M. Sharp (USFS), and Amy M. LaVoie (USFWS). This team has worked for several years with agency resource specialists and invited science partners to develop an interagency science and research strategy.

Resource managers face a growing list of increasingly complex issues that affect natural resources as well as cultural and heritage resources. This reality is no more obvious than in Southern Nevada where unprecedented growth and increased visitation dramatically impacts the seven million acres of federally managed lands in the area. Science and research projects and products can help inform consistent and cross-boundary management decisions. The SNAP Science and Research Strategy has drawn upon the goals of all four federal agencies to develop a set of common goals, sub-goals, and priority science and research questions in the areas of Natural Resources, Human Connection, and Strategy Operations and Approach. A cooperatively created strategy helps increase efficiencies and allows for interagency decision-making.

Southern Nevada federal land managers recognized the need to create and subsequently implement an interagency science and research strategy to functionally integrate and coordinate scientific research programs in Southern Nevada and to improve the efficiency and effectiveness of these programs and overall land management. Science and research needs are addressed more efficiently and effectively by (1) conducting research on an ecosystem basis, rather than traditional localized administrative-unit approaches, (2) leveraging limited funding to address common issues, (3) exchanging and sharing data and results, (4) minimizing redundant research efforts and focusing effort on prioritized land-management needs, and (5) establishing uniform study protocols. In addition, the SNAP Science and Research Strategy will provide a much-needed opportunity to allow priority management needs to drive requests for science and research activities with a mechanism to evaluate the quality and appropriateness of resulting proposals, projects, and products.
Detailed Accomplishments

Products

Bulleted items, indicated throughout this document with the ▶ symbol are included within the three-year Interagency Science and Research Strategy Compendium Volume.

SNAP Science and Research Strategy

The major accomplishment of this cooperative project is the SNAP Science and Research Strategy: a document that contains a coordinated framework of interagency goals, sub-goals, science questions, contributing questions, and tasks/objectives. The topics addressed in the Strategy were selected after an extensive review of other regional science plans and review of existing Southern Nevada agency management documents. The overall goal of this long-term strategy is to integrate and coordinate scientific research programs in Southern Nevada and improve the efficiency and effectiveness of these programs. It will inform and guide SNAP agencies in identifying and articulating highest priority science and research needs, sharing resources and funds from other sources, and eliminating redundancy between research programs within their focus areas. The SNAP Science and Research Strategy was approved by the SNAP Board in early March 2009. The following individuals reviewed the Strategy and provided comments, which were incorporated at the team’s discretion (see SNAP Science and Research Strategy Reconciliation Memo).

Lee DeCola, Scientist, U.S. Geological Survey, Reston, VA
Nora DeVoe, Western Region Science Coordinator, Bureau of Land Management, Reno, NV
John Hammill, Chief, U.S. Geological Survey, Grand Canyon Monitoring and Research Center, AZ
Ron Huntsinger, National Science Coordinator, Bureau of Land Management, Washington, D.C.
Barry Mulder, Retired, U.S. Fish and Wildlife Service, Portland, OR

▶ 2009 SNAP Science and Research Strategy
▶ 2009 SNAP Science and Research Strategy Reconciliation Memo

A short synopsis of each of the chapters within the SNAP Science and Research Strategy is presented below. The primary science questions that respond to interagency goals established during the development of the Strategy are described in Chapter 4 of the Strategy. The remaining sections primarily discuss processes to implement a fully successful science and research strategy.

Chapter 1 Introduction
A description of the Southern Nevada Agency Partnership is provided, including its vision, mission and geographic scope. An overview of the 11 ecosystems of Southern Nevada is given, including a listing of species of management concern. The purpose and objectives of the Strategy are described.
Chapter 2 Organization and Responsibilities
The roles and responsibilities of the individuals and groups who share in administering and implementing the SNAP Science and Research Strategy are presented. These groups include the SNAP Board, the interagency science and research team, and the SNAP Science Panel. This panel would be established with independent experts to provide input and advice.

Chapter 3 Adaptive Management
A conceptual model is presented that integrates science and research activities into the standard adaptive management framework. The role of science in adaptive management is explained. The processes for the synthesis of science findings and incorporation of new knowledge in planning and decision-making are also described.

Chapter 4 SNAP Science and Research Needs and Priorities
A framework for science needs is presented based upon the following three interagency goals, developed within the context of agency missions:

Goal 1: Restore, sustain, and enhance Southern Nevada’s ecosystems.
Goal 2: Provide for responsible use of Southern Nevada’s lands in a manner that preserves heritage resources and promotes an understanding of human interaction with the landscape.
Goal 3: Promote scientifically informed and integrated approaches to effective, efficient, and adaptive management.

Sub-goals and associated science questions or tasks are described for each of these goals.

Chapter 5 Developing and Updating the SNAP Science and Research Needs Assessment
The prioritization of SNAP science and research needs is an ongoing process. The Strategy recommends that an annual Needs Assessment document be prepared. The process to prepare this document would begin with the call for concept papers, annual work plans for SNAP agencies, and the identification of SNAP species of management concern. A final Needs Assessment would be prepared by the interagency science and research team with assistance from the SNAP Science Panel, and review by the SNAP Board. The annual Needs Assessment document communicates SNAP’s science and research needs to the broader scientific research community and to potential research partners.

Chapter 6 Synthesis
An important component of the Strategy is the synthesis of science findings with a goal of identifying potential implications to resource management in Southern Nevada. The first synthesis report would be prepared during the first years of the implementation of the Strategy. This synthesis report will take the form of specific reviews addressing priority science questions for Strategy sub-goals for the topics of fire, invasive species, landscapes and watersheds, biodiversity, cultural resources, historic content, recreation, land uses, and education. A synthesis team would be selected to narrow priorities, create a database, collect information, undertake data synthesis activities and prepare the synthesis report. Future synthesis reports should be prepared every five years.
Chapter 7 Outreach Strategy
The purpose of outreach is to inform external research organizations about the science and research needs for Southern Nevada public lands and encourage them to participate in addressing these needs. Outreach materials will include a web presence, single page graphic summary sheets, Needs Assessment publications, electronic visual presentations and a welcome/introduction packet for researchers.

Chapter 8 Quality Assurance
This chapter details a recommended quality assurance program for science and research occurring on public lands managed by SNAP agencies. The SNAP quality assurance program plan includes a process for standardizing data collection protocols over time. A key quality assurance component of the SNAP Science and Research Strategy is its review process.

Chapter 9 Science Coordination and Information Sharing
An important goal of the Strategy is to ensure effective linkages for the dissemination of knowledge and sharing of data, results, data collection/management systems, staff and resources. Coordination activities need to include the SNAP Board, SNAP teams, the interagency science and research team, agency staff, and the broader scientific community. Included are mechanisms to increase the exchange of data and information, reduce the duplication of efforts, and encourage science and monitoring efforts both within SNAP agencies and with other entities in the Mojave Desert region.

Chapter 10 Funding Needs and Sources
The SNAP-participating agencies are committed to providing a consistent scientific approach across agency boundaries and the SNAP Science and Research Strategy is a key mechanism for achieving that goal. Besides agency commitment, consistent funding is also necessary to successfully implement the SNAP Science and Research Strategy. This chapter discusses funding needs for components of the Strategy, and reviews potential sources of funding for SNAP science and research projects.

Chapter 11 Strategy Evaluation
A component often overlooked in the development of science strategies is a process to continually improve and increase the effectiveness of the Strategy over time. The key components of this continual improvement process are three separate reports, which include (1) an annual report of the interagency science and research team, (2) an annual Needs Assessment document (see Chapter 5), and (3) a periodic synthesis report (see Chapter 6). Based upon the information contained in these reports, the current Science and Research Strategy may be updated or refined. The first update to the Strategy will be in 2011.

Peer-Review Process
Documented within the Strategy is a two-part SNAP Peer-Review process as a means to evaluate and recommend science and research proposals, projects, and products relevant to the SNAP Science and
Research Strategy (see SNAP Science and Research Strategy: Chapter 8). Materials developed in association with this peer review include a sample letter of invitation to reviewers, methods for reviewer selection, a conflict-of-interest policy and certification forms, electronic review worksheets, reviewer tracking forms, and tabular results templates.

The SNAP Peer-Review process was beta tested and refined during SNPLMA Rounds 7, 8, 9, and 10 on Conservation Initiative nominations deemed relevant to the SNAP Science and Research Strategy. Review activities that took place during Rounds 9 and 10 resulted in recommendations reports to the SNAP Board. Round 7 Conservation Initiative nominations relevant to the SNAP Science and Research Strategy were used to test the draft worksheets developed (i.e., to conduct a peer review of the peer review process); the results of this review are also provided. Contact information for potential reviewers within the subject areas covered, was stored in a contact sheet organized by speciality.

- Round 8 External Reviews
- Round 9 Recommendations Report to the SNAP Board
- Round 10 Recommendations Report to the SNAP Board
- Review of the External Review Worksheets used in the SNAP Peer Review Process
- SNAP Peer Review -- External Experts Contact Sheet

Within the task agreement for this project, the review process is connected to methods for proposal solicitation. However, during the course of this task agreement, it was determined that solicitation of proposals is beyond the scope of the interagency science and research team at the current time.

**SNAP Science Panel**

Described within the original task agreement between the National Park Service, Lake Mead National Recreation Area and the University of Nevada, Las Vegas for the Round 4 Conservation Initiative nomination, “Inter/Intra-Science and Research Strategy,” was the provision that a “steering committee” was to be established, consisting of federal agency personnel and local science providers to work with the University of Nevada, and the Interagency Science and Research Liaison as part of the development of a short and long-term science strategy. However, over the course of the project, the interagency science and research team and the SNAP Board refined the role for this component, which it named the SNAP Science Panel. The SNAP Board and the interagency science and research team made a determination to establish and engage the SNAP Science Panel during the implementation phase of the Strategy. Academic and agency scientific expertise was input into the Strategy itself through a series of workshops, meetings, and its peer review.

The interagency science and research team will select experts from the extramural research community to form the SNAP Science Panel (See SNAP Science and Research Strategy Chapter 2 and Report: Recommended Approach for Identifying Members of the SNAP Science Panel).

- Report: Recommended Approach for Identifying Members of the SNAP Science Panel
Meeting Facilitation

Project staff scheduled, facilitated, participated in, and documented interagency science and research team meetings over the course of this project. Agendas were prepared prior to each meeting and minutes were posted to GroveSite (except in the case of meetings and conference calls focused on editing portions of the Strategy or preparing presentations).

- Agendas and Meeting Minutes

SNAP Board Briefings

The SNAP Board was briefed on the status of the SNAP Science and Research Strategy and the progress of the project through quarterly reports, invitation to and attendance at the Workshop (see Workshop page 8), standing monthly meetings between UNLV-PLI project staff and the SNAP Board Executive Director, and finally through formal presentations at meetings of the SNAP Board on the following dates for the purposes noted:

May 15, 2007  Key Topics Covered: Project Background and Overview; Team Mission, Vision, and Charter Goals; Suggested Peer Review Process for SNPLMA Conservation Initiative Proposals Relevant to the SNAP Science and Research Strategy; Mojave Desert Ecosystem Health Assessment Workshops; Development of a Science Strategy / Survey of Existing Science Delivery Strategies; Draft SNAP Science and Research Strategy Goals; Project Timeline; SNAP Board Involvement; and Invitation to the September 13, 2007 Natural Resources Management Workshop.


April 18, 2008  Key Topics Covered: Refined SNAP Science and Research Goals; Progress on Sub-goals, Questions, and Tasks, including presentation of Sub-goals, Science Questions, and Contributing Questions for Goal 1 and Sub-goals for Goal 3; SNAP Science and Research Strategy Components and Chapter Outline; Details and Clarifications of the Components of “Science and Research Strategy Implementation (Peer Review, Outreach, and Synthesis)” ; and Submission of a Draft Single-page Graphic Outreach Sheet Featuring the SNAP Science and Research Strategy.
Key Topics Covered: SNAP Science and Research Strategy Overview; Presentation, Review, and Approval of all Goals, Sub-Goals, and Science Questions; SNAP Science and Research Annual Needs Assessment; Adaptive Management Process; and Timeline for Completion.

The interagency science and research team presented members of the SNAP Board with spiral bound, penultimate drafts of the SNAP Science and Research Strategy for their review and discussion. Also discussed were the Strategy’s peer review, its results, and how the comments were incorporated or otherwise addressed. Finally, necessary agency commitment to implementation of the Strategy was outlined.

Feedback given by the SNAP Board at each of these meetings was incorporated into the Strategy as requested. For each of these meetings, Dr. Miller created presentations, which were edited, approved, and delivered by the interagency science and research team. A large selection of the PowerPoint slides designed for these and other presentations of the interagency science and research team have been distilled and compiled into a single file (see Outreach Tools, page 11).

Workshop

On September 13, 2007, the interagency science and research team convened a Natural Resources Management Workshop to assist in the development of the SNAP Science and Research Strategy. The workshop provided the opportunity for agency staff to (1) review the Strategy’s three overall goals and validate the sub-goals under Goal 1, which pertains to natural resources; (2) review, rank, and prioritize science questions and their associated contributing questions under the Goal 1 sub-goals; (3) identify gaps and provide additional information. The workshop was coordinated by UNLV-PLI and took place on the campus of UNLV: Approximately 50 individuals attended.

Two previous ecological health workshops titled “Research Needs for the 21st Century” and hosted by the Desert Research Institute in May and August of 2006 were the source of content associated with this goal. Prior to the Natural Resource Workshop, conducted for this task agreement, the interagency science and research team selected, refined, and synthesized related statements and questions from the proceedings of the previous two workshops and distilled them into draft sub-goals, questions, and contributing questions.

The workshop featured a lecture component with context provided by the interagency science and research team and the SNAP Board. Rebecca Gravenmier, Science Coordinator for the U.S. Forest Service’s Pacific Northwest Research Station (Portland, OR) delivered the keynote address on the history, development, and lessons learned from the Northwest Forest Plan. The Northwest Forest Plan is a model effort, among others, upon which the SNAP Science and Research Strategy is based. The SNAP Board had the opportunity to confer privately with Ms. Gravenmier over a luncheon meeting. The second half of the workshop consisted of concurrent breakout group sessions where the work of
validating sub-goals and reviewing, revising, and prioritizing science questions and contributing questions was accomplished.

The outcome of the workshop was a revised set of Goal 1 sub-goals, science questions, and contributing questions, which incorporated the comments, concerns, and suggestions of the participants. In addition, this workshop made staff and the SNAP Board aware of the SNAP Science and Research Strategy and its plans for the future.

Following this one-day workshop, individual meetings of a similar nature were held with the Interagency Cultural Resources Team, Interagency Recreation Team, an ad hoc interagency wilderness team, and members of the Education about the Environment Project and the Lake Mead National Recreation Area Interim Chief of Interpretation. These meetings resulted in the creation of final goal statements, sub-goals, science questions, and contributing questions within the SNAP Science and Research Strategy.

- Proceedings: Southern Nevada Agency Partnership Science and Research Strategy Natural Resources Management Workshop

**Partnerships**

Partnership activity has been built into the SNAP Science and Research Strategy; information relevant to the development and maintenance of partnerships can be found within Chapter 7: Outreach Strategy and Chapter 9: Science Coordination and Information Sharing. In addition, Chapter 9 includes a listing of examples of types of groups relevant to each sub-goal area for which coordination (and potentially partnership formation) is and would be beneficial in the future.

Partnership activities engaged in during the course of this task agreement are described below.

**SNAP Teams**

Over the course of this project, Drs. Palmer and Miller facilitated meetings with various SNAP teams in order to incorporate their science and research needs into the SNAP Science and Research Strategy Goals within their respective topic areas. These meetings were also important to provide agency staff with an understanding of the purpose of the Strategy and to gain support for its implementation. Overviews of the interactions with the individual teams are described below. The results of which (contributions to relevant sub-goals, science questions, and contributing questions) were presented to the interagency science and research team for further refinement, approval by the SNAP Board, and incorporation into the SNAP Science and Research Strategy.

**Ad Hoc Land Use Team**

On March 24, 2008, Drs. Palmer and Miller and Carolyn Ronning met with an ad hoc land use team assembled by the SNAP Board. Attendees were introduced to the SNAP Science and Research Strategy, and the importance of identifying land-use research needs for the SNAP agencies was stressed. The group was guided through a process similar to the one undertaken at the Natural Resources Workshop.
Attendees were given an overview of the SNAP Science and Research Strategy. Also provided were a draft land-use based sub-goal and the corresponding draft science questions and contributing questions drawn and distilled from the 2006 ecological health workshops, “Research Needs for the 21st Century.” Participants also had the opportunity to review and provide feedback on Goal 2, under which the land-use sub-goal falls.

*Interagency Cultural Resources Team*

During the course of the project, the SNAP Board expanded the scope of the SNAP Science and Research Strategy to include cultural resource sciences. Several meetings beginning on August 17, 2007 were held to request assistance from the cultural resources team in the development of the SNAP Science and Research Strategy. Drs. Palmer and Miller and Carolyn Ronning attended a cultural resources team meeting on October 31, 2007. They guided the team through a process similar to the one undertaken at the Natural Resources Workshop. Although some draft questions were generated from material documented at the 2006 ecological health workshops, “Research Needs for the 21st Century,” it was necessary for the cultural resource team members to brainstorm additional ideas to ensure that all of the team’s needs were met. On January 31, 2008, Dr. Palmer met with the cultural resources team to review progress with the selection and prioritization of science and contributing questions. The cultural resources team continued to meet on this topic, submitting their final draft on July 25, 2008 along with additional information for the introduction and glossary sections of the SNAP Science and Research Strategy.

*Interagency Recreation Team*

Drs. Palmer and Miller met with the Deborah Reardon from the interagency recreation team to assist her with efforts to identify the science and research needs of the team. Ms. Reardon was given an overview of the SNAP Science and Research Strategy as well as a draft recreation-based sub-goal and draft science questions and contributing questions drawn and distilled from the 2006 ecological health workshops, “Research Needs for the 21st Century.” The interagency recreation team then modified and edited the sub-goal and questions, providing their contributions on April 23, 2008.

*Education about the Environment Project and the Lake Mead National Recreation Area Interim Chief of Interpretation*

During the course of this project, a SNAP interagency education and interpretation team was not active. Therefore, the interagency science and research team drafted a conservation education and interpretation sub-goal, and Dr. Miller developed a series of questions and contributing questions. On July 24, 2008, these materials were presented to the Lake Mead National Recreation Area Interim Chief of Interpretation Jennifer Haley (on detail from the position of SNAP Board Executive Director). Following incorporation of Ms. Haley’s suggested edits, the sub-goal, science questions, and contributing questions were provided to Dr. Allison Brody (Project Manager for the Southern Nevada Public Lands Education about the Environment Project) and Daphne Sewing (Project Manager for the Discover Mojave Forever Earth and Outdoor World Projects) for review and comment.
Limnological Assistance (Interagency Water 2025 Team)

At the request of Kent Turner, Dr. Dandridge (project manager, 2005-2006) attended a three-day workshop sponsored by the Southern Nevada Water Authority (SNWA) in February 2006 to become familiar with water issues that will affect research efforts directed to the Mojave Desert ecosystem and federal agency lands. The interagency science and research team lead therefore wished to ensure that the project manager was included in significant discussions and had a general understanding of the important issues relating to water in Southern Nevada.

Subsequently, in 2008, Dr. Miller was requested to assist the Interagency Water 2025 Team by adapting the peer-review process developed for the SNAP Science and Research for use in the evaluation of six proposals related to the quagga mussel invasion of Lake Mead.

Clark County

A foundational relationship with the Clark County science management analyst was established through a series of meetings with Clark County Air Quality and Environmental Management staff. Productive communication was facilitated by Dr. Dandridge between the federal agencies and Clark County regarding science objectives for the Clark County Multiple Species Habitat Conservation Plan (MSHCP). Sue Wainscott, Clark County Science Management Analyst, was invited to the interagency science and research team meeting on June 20, 2006 to update the team on revisions to the MSHCP compliance and research program. The goal is to foster communication and cooperation with Clark County as well as reduce duplicative efforts that target research relating to endangered species on public lands in Southern Nevada.

In 2007, the interagency science and research team met with MSHCP program staff to discuss cooperation in the development of science strategies. Team members were invited to attend an Ecosystem Modeling Workshop held at the Desert Research Institute from January 29-31, 2008. The objective of this workshop was to develop first iteration conceptual models for 11 ecosystems of interest to the Clark County MSHCP program. Several members of the interagency science and research team participated in sessions of this workshop as time permitted.

Dr. Palmer attended the 2008 MSHCP project progress report symposium on August 14 and 15, 2008. Reports were given for 22 science projects funded through the MSHCP program, primarily on federal lands.

Mojave Desert Initiative

The Mojave Desert Initiative is an effort wherein federal land managers from Utah, Nevada, and Arizona meet to discuss common issues. Of particular concern is the increased frequency and extent of fires and their associated ecological effects. Dr. Palmer was invited to attend the August 21, 2008 meeting of the Mojave Desert Initiative and describe the interagency science and research team’s approach to the
development of a science strategy for the SNAP. This group expressed an interest in coordinating their science efforts with those of the interagency science and research team.

Other

Dr. Palmer attended the workshop titled “Biological Soil Crust: Ecology and Management” that was held at the Lake Mead National Recreation Area from March 13-15, 2007. This workshop was attended by numerous scientists and land management staff from federal agencies, state agencies, and universities and offered an excellent opportunity to develop partnerships to assist with future cooperative efforts in support of the SNAP Science and Research Strategy. In addition, Dr. Palmer attended a science meeting titled “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.

Provided within the SNAP Science and Research Strategy is a listing of governmental agencies and entities, science and research consulting firms, societies and non-profit organizations with a relevant interest, and traditional academic departments (e.g., biology, environmental studies, etc.), as well as university-housed institutes and centers with an interest in arid lands research (see SNAP Science and Research Strategy: Appendix 7-A). These organizations and others will receive the outreach materials developed as the first step in building new community partnerships.

Outreach Tools

PowerPoint

A composite PowerPoint has been prepared that contains the slides developed over the course of this project for various presentations. Using this composite, future presentation can easily be constructed by drawing upon, adapting, and adding to the existing slides.

▶ Composite Interagency Science and Research Team PowerPoint

Single Page Graphic Sheet

A one-page graphic summary sheet was developed to conceptually organize the major components of the Strategy and facilitate presentation of the Strategy to the SNAP Board. This one-page graphic, prepared by Dr. Miller, will be useful for other outreach activities.

▶ Graphic One-page Summary Sheet: SNAP Science and Research Strategy
Listing of Potential Conferences and Meetings

One of the outreach mechanisms described within the Strategy is presentation at meetings and conferences and/or hosting a session within an established event in order to make the Strategy known to potential partners or for the purposes of gathering information to answer particular science questions within the Strategy. To aid in this effort, UNLV staff conducted informational research to identify and tabularized a listing of meetings and conferences within the nation that are pertinent to the Strategy and its sub-goals. Events are listed by sub-goal, and the dates, titles, and locations are provided.

- Table: Potential Conferences and Meetings for SNAP Science and Research Strategy-related Presentations