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QUARTERLY PROGRESS REPORT  
University of Nevada, Las Vegas  
Period Ending November 30, 2005  

Cooperative Agreement Number H8R07010001  
Task Agreement Number J8R07040005  
Education in the Environment: A Hands-on Student Research  
and Outdoor Learning Experience  

Executive Summary  

During the past three-months, the focus of the university’s efforts has included the following highlights:  

- Forever Earth was scheduled 15 times in the past quarter.  
- Twelve Discover Mojave Outdoor World events were completed; a draft Year 2 schedule was completed.  
- An Outdoor World assessment report compiled and results were presented at a professional academic conference.  
- The Phase I Education in the Environment Strategy document was completed.  
- A Phase II action plan is underway by the Environmental Education Committee.  
- Survey data is being collected from Clark County School District teachers about their use of educational field trips.  
- Planning has begun for a master’s degree in environmental education to train new educators for the Las Vegas Valley.  
- Coordination efforts continue between the Interagency Environmental Education Team and other interagency teams that have identified education components within their program/project efforts.  

FOREVER EARTH PROGRAM  

Forever Earth Operations  
The Forever Earth vessel was scheduled and operated 15 times in the past three months (see attached). The scheduled trips included agency functions (2 trips), research (9 trips), and education (4 trips). Over 120 agency personnel, researchers, teachers, and students benefited from the trips.  

On September 4, 2005, the National Park Service hosted Director Fran Mainella aboard Forever Earth and highlighted many of the projects funded through the Southern Nevada Public Land Management Act (SNPLMA). The BLM Administrative staff scheduled Forever Earth for a
September 15 retreat and learned about many of the Conservation Initiatives, including the Forever Earth program, funded through SNPLMA.

Throughout the month of October, Forever Earth was scheduled to assist with completion of an extensive research project for the Southern Nevada Water Authority. Lake-bottom mapping and geophysical surveys were undertaken to evaluate the potential for constructing a deep, raw-water intake in Lake Mead. The primary objectives of the investigations were to focus on detection and displaying of faulting or major shear zones, inclination of strata, and definition of major soil/bedrock units from surface levels to a target depth of elevation 500 feet (amsl). Geophysicists from Golder Associates based in Seattle, Washington, used Forever Earth for nine days, October 11-21. The researchers were highly complimentary of the Forever Earth vessel and crew and offered to present a seminar at UNLV on their research and survey results.

On November 13, 2005, Forever Earth was scheduled for two UNLV field trips conducted by Dr. Wanda Taylor, Geosciences Department Chair, for her undergraduate and graduate students. The vessel was used to transport the students to several access points to examine geologic features.

Discover Mojave Outdoor World programs were conducted aboard Forever Earth on November 10 and 19, 2005. The first group was comprised of youths from the Spring Mountain Youth Camp; they participated in an art adventure activity utilizing the landscapes in the Black Canyon and Arizona Paint Pots areas. Members of the Paradise Elementary Environmental Science Club also participated in an art adventure on their Forever Earth excursion. This activity was the culminating event of their fall schedule.

**Forever Earth Materials and Resources**

Work continues on a website to target user-groups, partners, and potential partners. Group leaders will find all necessary information about scheduling Forever Earth as well as links to additional resources, research, and contact information. The website will be launched in the next quarter.

Project Manager Daphne Sewing met with Kay Rohde, National Park Service Chief of Interpretation, and Ellen Anderson, Environmental Education Program Coordinator, Lake Mead National Recreation Area, on September 14, 2005, to discuss development of Forever Earth programs and activities. Discussions centered on how to integrate Forever Earth with the existing Park Service program and a process for program development.

**Marketing and Community Outreach**

On November 19, 2005, a powerpoint presentation about the Forever Earth program was presented at a teachers’ workshop sponsored by Clark County School District (CCSD) *(see attached)*. The approximately 50 teachers attending the workshop learned about the program, scheduling procedures, and field trip options.

**DISCOVER MOJAVE OUTDOOR WORLD**

**Year 2 Events**
Seventy-eight children participated in 12 events conducted this quarter (see attached). Activities were offered on Saturdays and after school on week days. Four groups with the target demographic were involved:

1) 5th graders at Paradise Professional Development School participating in an after-school environmental science club.

2) RecMobile, a Clark County Parks and Community Services program that provides recreational programs and activities for children in neighborhoods that do not have community recreation centers.

3) Rural Recreation, a Clark County Parks and Community Services program that provides recreational programs and activities for children in outlying Clark County communities.

4) Spring Mountain Youth Camp, a detention facility for teenage boys.

Fifth grade students at Paradise Professional Development School were given the opportunity to apply for membership in an after-school Environmental Science Club. Presentations about the Discover Mojave Outdoor World program were made by Project Manager Daphne Sewing to over 50 students in two sessions on September 20, 2005. Interested students applied for membership, and eight students were selected for participation. On Wednesday afternoons, beginning on October 5, 2005, club members participated in two bird-watching activities; a canoeing activity; two fishing activities; and an art adventure activity. A culminating program event was conducted on Saturday, November 19, 2005. First, a kayaking program was offered to students and their parents at Lake Las Vegas. Instructors were provided by UNLV’s Outdoor Adventures program. The group then proceeded to Lake Mead National Recreation Area to participate in an art adventure activity aboard Forever Earth. The art activity was facilitated by Ms. Lucita Woodis-Junes, a local Las Vegas artist. Also invited to participate in the day’s activities were four high school students participating in the Interagency Student Intake Program. The students assisted the activity leaders and worked with the younger children throughout the day. Other key partners in the day’s events included:

- Marina personnel who arranged for use of the kayaks and the Event Beach at Lake Las Vegas.
- Outside Las Vegas Foundation provided funds to purchase box lunches for participants from Callville Bay Marina.

On November 5, 2005, canoeing and bird-watching events were conducted at Sunset Park for 14 youths, ages 8-12, from the RecMobile and Rural Recreation programs. The RecMobile program brought 6 children from inner city Las Vegas, and the Rural Recreation program brought 8 children from Blue Diamond for the day’s activities.

The RecMobile program continues to be a valuable and willing partner. The Rural Recreation program targets outlying communities in Clark County such as Blue Diamond and Indian Springs and has traditionally focused on traditional playground activities. The Outdoor World activities provide an additional educational component for this program. Several activities have been scheduled in the spring for the RecMobile and Rural Recreation programs. Emphasis will be placed on encouraging children to participate in multiple activities.
Another new partner group, Spring Mountain Youth Camp, participated in activities at Lake Mead National Recreation Area on November 10, 2005. Eight teens from the camp learned casting and knot-tying skills before fishing from the shore. The group then boarded Forever Earth and joined Ms. Woodis-Junes, who facilitated an art activity. The group used the landscapes provided by views of Black Canyon and the Arizona Paint Pots as inspiration for their paintings.

Assessment Report

An important component of the Outdoor World program has been the development of assessment tools to measure the effectiveness of the program activities and to compile longitudinal data over the program’s duration. UNLV’s Center for Evaluation and Assessment provided a report of the data collected during last spring’s activities (see attached). In summary, findings revealed that participants’ knowledge, attitudes, and performance increased substantially as a result of participating in the outdoor recreational activities. The report concluded that the implementation and assessment of the program is strong; several recommendations for future programs were included.

On October 5-9, 2005, the findings were presented at the conference of the Northern Rocky Mountain Educational Research Association by Dr. Greg Schraw and Dr. Lori Olafson, UNLV Center for Evaluation and Assessment, and Dr. Jeanne Klockow, Public Lands Institute. Daphne Sewing shared the results with the Outside Las Vegas Foundation Environmental Education Committee on October 12, 2005. Proposals to present the assessment results have been accepted at three additional professional conferences:

1) Our Places Tell Stories Conference for informal educators, Las Vegas, January 2006;

2) Regional conference for the National Association for Interpretation, Las Vegas, February 2006;


Based on the report’s recommendations, additional components were added to the assessment tools for Year 2 events scheduled for the Paradise Elementary program. These include a pre- and post-program assessment to be completed by the Grade 5 teachers; post-program assessment to be completed by parents; and post-program interviews of participants, parents, and Project Manager.

Marketing, Partnerships, and Community Outreach

Ms. Sewing was invited to make a short presentation to the Federal Agency Managers on September 2, 2005. She provided a brief overview of the Discover Mojave Outdoor World and Forever Earth programs (see attached) and answered questions about the programs.

Several valuable partnerships were established to enhance the quality of the Outdoor World events conducted this quarter and for future events. Markus Tracy, Coordinator for the New Directions Youth Arts program for the City of Las Vegas, connected the Outdoor World program to two resources. On September , 2005, Mr. Tracy facilitated a meeting with Joe Sadovich, Juvenile Probation Supervisor for Spring Mountain Youth Camp (SMYC), and Ms. Sewing to explore the possibility of scheduling activities for camp youth. A November 10 event was
scheduled, and it was agreed that after this event was evaluated, additional events for the spring might be scheduled for SMYC.

Mr. Tracy also introduced Ms. Sewing to a local Las Vegas artist, Ms. Lucita Woodis-Junes. Ms. Woodis-Junes facilitated art activities aboard Forever Earth for the SYMC on November 10 and the Paradise Elementary Science Club on November 19, 2005.

**STATUS OF YEAR 2 DELIVERABLES**

The project manager for the Forever Earth and Discover Mojave Outdoor World programs was hired in February 2005. The following table summarizes the status of Year Two Deliverables.

<table>
<thead>
<tr>
<th>Year Two Deliverables (June 2005 – May 2006)</th>
<th>Percent Complete as of November 30, 2005</th>
<th>Plan for Completion in Year Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write curricula for Forever Earth and WOW/Discover Mojave</td>
<td>40 percent complete.</td>
<td>A meeting was held with Kay Rohde and Ellen Anderson to discuss development of activities and programs; background information has been compiled. New events (rock climbing, for example) for the Discover Mojave Outdoor World program may potentially be added in the spring.</td>
</tr>
<tr>
<td>Produce marketing plan for Forever Earth</td>
<td>0 percent complete.</td>
<td>A draft marketing plan will be reviewed by key partners and Public Lands Institute personnel and finalized with the Project Manager’s input.</td>
</tr>
<tr>
<td>Coordinate Forever Earth uses according to operations plan</td>
<td>100 percent complete.</td>
<td>On-going revisions are made throughout the year.</td>
</tr>
<tr>
<td>Revise and update Forever Earth operations plan as needed.</td>
<td>100 percent complete.</td>
<td>The SOP document continues to be revised as needed to reflect needs of the program and vessel operations.</td>
</tr>
<tr>
<td>Manage Forever Earth lab; procure and maintain necessary supplies/equipment</td>
<td>60 percent complete.</td>
<td>Additional needs will be identified throughout the year.</td>
</tr>
<tr>
<td>Record, preserve, and share data collected from vessel.</td>
<td>0 percent complete.</td>
<td>Data will be collected as groups schedule Forever Earth; a database will be created and accessed through the website.</td>
</tr>
<tr>
<td>Coordinate 10 southern Nevada WOW/Discover Mojave events.</td>
<td>160 percent complete.</td>
<td>Additional audience groups are being identified; more events will be scheduled throughout Year 2.</td>
</tr>
<tr>
<td>Operate Forever Earth according to the operations plan.</td>
<td>100 percent complete.</td>
<td>Educational programs and activities will continue to be developed and field tested through the next two quarters.</td>
</tr>
</tbody>
</table>
EDUCATION IN THE ENVIRONMENT STRATEGY

The Education in the Environment Strategy envisions the most effective messages and methods so that every resident and visitor will understand, appreciate and take care of southern Nevada’s environment.

The first phase in the Education about the Environment (EAE) strategy (a Round 4 project) entailed coordinating the completion of a strategic planning process for the development of a five-year outdoor education strategy. The Phase I strategy is intended to provide the framework for the education and interpretive programs that will ultimately foster positive stewardship behaviors on southern Nevada public lands. The basis for this framework is a matrix of desired future interagency educational programming; this matrix, in turn, served as the starting point from which an Interagency EAE Strategy (Phase I) has been built.

The four federal agencies share audiences with other informal education providers, such as the Las Vegas Springs Preserve and the Nevada State Museum and Historical Society. Because we know that learning is cumulative over time and space, strategic collaborations among these providers can help our audiences build on and reinforce their learning experiences. Experiences that are multi-dimensional, rather than single-agency, one-shot experiences, are more likely to result in positive and desired behavior changes.

Therefore, Phase I of the EAE Strategy was completed based on input from place-based educators working for federal, state, and county agencies as well as a variety of other organizations. Two main groups were involved in the creation of the Phase I EAE Strategy.

1. **The Outside Las Vegas Foundation EE committee.** This committee has created the mission, vision, goals and objectives that have become the backbone for the EAE Strategy (*see attached document*). The committee is currently working to complete an action plan addressing their role in implementing these objectives (*see attached meeting notes*).

2. **A Strategy Working Group.** This group consists of stakeholders from the National Park Service, the Bureau of Land Management, the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Nevada Department of Wildlife, and the Red Rock Interpretive Association. This group first met on October 13, 2005 (*see attached notes*). This meeting paved the way for identifying the structure and intent of the EAE strategy. On December 5, 2005, this working group will revisit the matrix of desired future interagency educational programming. This matrix, which will form the basis for the strategy, needs to be expanded and completed, addressing the following:
   - Identify and use terminology that everyone understands -- a common language will allow use and integration by a diverse number of partners.
   - Clarify the thematic concepts and their underlying stories.
   - Clarify the connections among different programs, agencies, and organizations.
   - Incorporate common messages.
   - Identify consistent methods to reach particular user groups.
Take into account alternate (and perhaps more effective) methodologies, and include newly-available resources and knowledge we have (or will be collecting) about our audiences – their knowledge, attitudes, and even learning preferences.

The Phase I EAE Strategy document (see attached document entitled: Improving the Community’s Connection to Hands-on Education about the Environment: a Strategic Approach) reflects current conditions and suggests steps to be taken to achieve Phase II. The draft outline for the EAE Strategic Plan is also included in this document.

SURVEY OF LOCAL TEACHERS

As indicated by the discussions leading to the Phase I strategy, a survey has been constructed to investigate the use of public lands as field trip destinations by Clark County School District (CCSD) teachers (see attached). Survey analysis will allow the federal agencies to determine what types of science and cultural programming will be most useful to teachers, how to structure and deliver this programming, and how to best develop professional development opportunities. Of particular interest is how teachers use field trips to meet academic and testing requirements. That is, should the agency’s education teams design field trips to integrate with and support school curricula, or are field trips primarily used as student enrichment? As well, identifying major barriers to taking students to public lands will allow the agencies to design programs and systems to overcome these barriers. For example, if teachers cite that they cannot bring their classes to public lands because transportation is not available, then agencies can seek opportunities to provide alternative transportation options.

The survey was launched on-line through a company called “Zoomerang” on October 21, 2005. Participation was solicited from a stratified random sample of teachers and principals, with representation from each school proportionate to the total number at that school. Twenty percent of teachers were selected to participate, giving a total sample size of approximately 800 teachers. A letter explaining the survey was delivered to these teachers and principals through the CCSD internal mail system.

Unfortunately, only 10 teachers have chosen to participate in the survey to date. A modification request form has been submitted to the UNLV Internal Review Board to change the sampling protocol (see attached). In this altered protocol, science teachers in grades K-12 will be solicited to participate. Allison Brody will work with the CCSD K-12 Science Coordinator to identify opportunities to reach groups of science teachers (for example, workshops, trainings and other professional development events). During the course of the professional development or other event, a neutral facilitator will briefly explain the purpose of the survey, then hand out the consent form and the survey to the participating teachers. A poster will be offered as incentive for taking the survey. Completed surveys will be collected by the facilitator, then delivered to Dr. Brody.

UNLV DEGREE PROGRAM WITH AN EMPHASIS IN PLACE-BASED EDUCATION

Project Managers Daphne Sewing and Allison Brody met with UNLV professor Dr. Marilyn Ford in June 2005 to investigate the creation of a master’s degree program in place-based or informal science education. Such a degree program will support the Education Strategy by sustaining a network of skilled educators that can deliver innovative and effective place-based education programs.

Initial brainstorming sessions were held on November 9 and November 16, 2005, with a third planned for December 13, 2005. Interested stakeholders from the formal and informal education arenas, as well as other community partners, were invited to attend one of these three identical
sessions. The outcome of each session was to define who the program will be for (the person graduating), the overall goals of the program, and to develop a list of the major components that should be included in the degree program.

Once all three meetings have been conducted, the notes will be compiled and distributed. A small planning committee will be formed to review these notes and review similar programs offered at other institutions. A draft framework will be developed from this research. Courses will then be developed to cover the gaps not filled by existing courses. We hope to have a plan approved through appropriate university channels by June 2006.

COORDINATING SNPLMA EDUCATIONAL EFFORTS

Project Manager Allison Brody has continued to facilitate and/or participate in planning meetings with the Recreation/OHV, Backcountry Access, Volunteer, Cultural Site Stewardship, and the Resource Protection interagency teams. The Interagency EE team has agreed to help develop an information packet for OHV users (see attached meeting notes) and a brochure for the Resource Protection team. A planning meeting has been scheduled on November 29, 2005, to assist with the development of the Cultural Site Stewardship Program’s education plan.

COMMUNITY PARTNERSHIPS AND OUTREACH

The facilitation of the area-wide Environmental Education Committee continues to foster and support coordination, collaboration, and strategic thinking and approaches. As mentioned previously, the committee is currently creating an action plan to accomplish many of the Phase I EAE Strategy goals and objectives.

In August 2005, Allison Brody and Kim Hutson de Belle, Program Manager for Outside Las Vegas Foundation, submitted a proposal to the National Park Service’s Rivers, Trails, and Conservation Assistance Program. The proposal sought assistance for a project entitled “Connecting the Hispanic Community to the Mojave Desert through Recreation Art Projects” (see attached document). Although the RTCA program was unable to provide assistance for the 2005-2006 year, Nevada Field Office Director Liz Smith-Incer agreed to facilitate a preliminary meeting to determine the level of interest and scope of the project. To this end, an Art and Hispanic Cultural Corridor Visioning meeting was held on November 7, 2005 (see attached notes). Dr. Brody and Ms. Hutson de Belle agreed to facilitate a second meeting on December 13, 2005.

The Wild Horse and Burro program staff requested assistance from the Public Lands Institute to create and offer an activity at the annual Farm Festival, a collaborative event sponsored by CCSD, Clark County Farm Bureau, University of Nevada Cooperative Extension, 4-H, and numerous other programs. At the Festival, youth from area schools were given the opportunity to explore the agriculture/livestock lifestyle. Education staff from the Public Lands Institute created an activity called “Desert Animal Aerobics,” which led children through an obstacle course mimicking different types of animal movements. The activity served the purpose of drawing students and teachers to the area so that they also visited the Wild Horse and Burro exhibit. The event was attended by 8,000 students and teachers from CCSD, charter, private, and home school groups.

Dr. Brody has also been involved with the following groups and initiatives during the past quarter:

- An interpretive planning meeting in Laughlin for the creation of a water-based interpretive trail called the Vias de Azul Water Trail.
The annual meeting of the Nevada Natural Resource Education Council, October 9, 2005. The board agreed to the creation of a number of regional advisory panels to open communication channels, meet regional needs, and inform the board about appropriate mission and goals for the group. Allison Brody attended the first meeting of this advisory panel on November 8, 2005.

The Wild Horse and Burro exhibit working group to advise on the creation of the Wild Horse and Burro displays, exhibits, and other interpretive media at for the new Visitor Center being built at Red Rock Canyon National Conservation Area (see attached notes).

An interpretive planning workshop for the proposed Sloan Canyon Visitor Center.

Daphne Sewing, Allison Brody, Doug Joslin, and Nancy Flagg attended a grant-writing workshop on October 31, 2005. The tools provided in this workshop will assist the Public Lands Institute in finding additional funding opportunities to enhance current projects, increase capacity, and pursue complementary project ideas.

**PLACE-BASED EDUCATION CONFERENCE**

As stated in previous reports, plans are underway to create an innovative new conference for educators and others working at nature- and heritage-rich places. “Our Places Tell Stories – Making Connections with Our Audiences” will be held January 24-27, 2006, at the Donald C. Moyer Student Union on the UNLV campus (see attached documents).

A unique partnership of federal, state, university, and public organizations identified the need to share successful educational and interpretive strategies. The conference is expected to draw more than 100 participants who work at public lands, nature centers, museums, zoos, aquariums, and other sites.

Conference topics include ways to create and market programs for audiences of diverse ages and ethnicities, skills to deliver messages to different audiences, and methods to strengthen the emerging network of site-based educators. The keynote speaker is Dr. Sam Ham, director of the Center for International Training and Outreach at the University of Idaho. Dr. Ham is well known for his research on the psychological outcomes of interpretation in enhancing the visitor’s experience.

The conference is sponsored by the Southern Nevada Agency Partnership and organized by the Public Lands Institute. Other partners include the Nevada Department of Wildlife, UNLV Division of Educational Outreach, Springs Preserve, Nevada State Museum and Historical Society, and CHOLLA.
# SUMMARY OF DELIVERABLES

The project manager for the Education in the Environment Strategy was hired in January 2005. The following table displays the status of remaining Year One and Year Two Deliverables.

<table>
<thead>
<tr>
<th>Pending Year One Deliverables</th>
<th>Percent Complete as of November 30, 2005</th>
<th>Plan for Completion in Year Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce written document which will become Section I in the comprehensive area-wide Outdoor Environmental Education Strategy. This written document will include an assessment of existing place-based education programs; the identification of gaps and overlaps in existing programs; and an assessment of the delivery of programs, including identifying and evaluating effectiveness of utilizing alternative workforce opportunities, e.g., volunteers, contract organizations and individuals)</td>
<td>100% complete -- see attached document entitled: <em>Improving the Community’s Connection to Hands-on Education about the Environment: A Strategic Approach</em></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Develop Section II of strategic plan to include goals, objectives, and desired future conditions.</td>
<td>25% complete</td>
<td>Goals and objectives have been identified; an action plan is currently being developed; and the matrix will be further refined to inform the implementation plan.</td>
</tr>
</tbody>
</table>

Submitted by:

Margaret N. Rees
Principal Investigator

Date