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QUARTERLY PROGRESS REPORT
University of Nevada, Las Vegas
Period Ending February 28, 2006

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:

- The 2006 Our Places Tell Stories Conference for place-based educators was held on the UNLV campus, January 24-27, 2006. Attendance totaled 120 participants, who rated the overall content and arrangements at 3.59 on a 4.00 scale.
- Forever Earth was scheduled 22 days in the past three months, benefiting more than 200 individuals.
- A $3,000 donation was received for the Forever Earth program.
- The Year 2 Schedule of Events for the Discover Mojave Outdoor World program is on track for delivering 29 total events, a 190% increase over the Year 2 deliverable stated in the task agreement. Thirteen Discover Mojave events are planned between March and May 2006.
- Presentations related to the Year 1 assessment results for the Discover Mojave Outdoor World program were made at three professional conferences.
- Survey data is being collected from Clark County School District teachers about their use of educational field trips.
- Planning continues 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 for 22 days in the past three months (see attached). The scheduled trips included an agency function (1 trip), research (19 days), and education (2 trips). More than 200 agency personnel, researchers, teachers, and students benefited from using Forever Earth.
The Public Lands Institute hosted a project managers’ meeting on board Forever Earth on December 7, 2005, to facilitate an effective transition for newly appointed SNAP Executive Director Jennifer Haley. An update on current Conservation Initiative programs was presented to Ms. Haley, outgoing Conservation Initiatives Program Manager Bobbie Antonich, and SNPLMA Conservation Initiatives Project Specialist Nancy Christ.

Field trip options during the 2006 Our Places Tell Stories Conference included a day exploring informal education opportunities at Lake Mead National Recreation Area. On January 26, 2006, 16 conference participants were on board Forever Earth to learn about the water resources of Lake Mead and about the Forever Earth program. Later that day, the participants also visited the Lake Mead Fish Hatchery and discussed the challenges of designing interpretive exhibits in an existing, limited space within the renovated visitor center.

During the month of February 2006, the National Park Service used Forever Earth as a support vessel for the Underwater Cultural Resources Survey Team. From February 6 through 24, 2006, the vessel was used as a base of operations and to stage the electronics and collected data from the surveys.

On February 25, 2006, the Science Olympiad Team from Rancho High School honed problem-solving skills while aboard Forever Earth. The team investigated questions about reservoir ecology and practiced basic GPS skills. Daphne Sewing, Forever Earth Project Manager, accompanied the group and assisted with the educational activities.

Curriculum Development
A plan and timeline has been implemented to complete the Year 2 development of the Forever Earth science curriculum components (see attached). In order to complete this deliverable, an interdisciplinary, multi-agency team has been assembled that will bring various strengths and expertise to the development of the educational activities and programs to be conducted onboard, as well as pre- and post-trip classroom and supplemental activities. Members of the team, which meets weekly, include:

- Daphne Sewing, Dr. Mary Banbury, Dr. Allison Brody, Dr. Jeanne Klockow, and Dr. Jennell Miller (Public Lands Institute);
- Ellen Anderson and Kay Rohde (Lake Mead National Recreation Area); and
- Cheryl Wagner and Mary Weisenmiller (Clark County School District).

Team members are split into sub-committees to work on different components of the curriculum, including both formal and informal activities. Initial emphasis will be given to developing an inquiry-based curriculum appropriate for middle school (5-7th) grade levels and incorporating use of technology. Project completion is targeted for mid-May.

Marketing, Fund-Raising, and Community Outreach
A timeline for completion of the Forever Earth marketing plan has been implemented. Daphne Sewing is currently finalizing the first draft with PLI Marketing Specialist LaNelda Rolley and plans to present the draft to the Interagency Environmental Education Team by the end of March. Revisions will be made during the month of April, with a target completion date of May 1, 2006.

A $3000 donation for the Forever Earth program was received through the UNLV Foundation from Golder Associates, Inc. This Seattle-based company used Forever Earth in October 2005 to complete a lake bottom mapping project for the Southern Nevada Water Authority. The funds will be used to assist local schools with field trip expenses.
Ms. Sewing participated as a member of the conference planning committee and served as program chair for the 2006 Our Places Tell Stories Conference. Her responsibilities included identifying, recruiting, and hosting the featured speakers; designing the concurrent session blocks; and reviewing and aligning presentation proposals to the conference theme and strands. An information-sharing session called “Conversations and Connections” provided an opportunity to discuss the Forever Earth program, as well as the Discover Mojave Outdoor World program, with conference attendees. Possibilities for additional resources and program links will be explored based on associations made during this session and others during the conference.

Substantial work has been completed on the design and content for the Forever Earth website. The university anticipates formally launching the site in the next quarter.

DISCOVER MOJAVE OUTDOOR WORLD

Year 2 Events
To date for Year 2 (June 1, 2005 – May 31, 2006), 137 youth have participated in 16 events. No events were conducted during this quarter. Beginning in late March 2006, 13 events have been tentatively scheduled through May (see attached). Participating groups in these events include the RecMobile and Rural Recreation programs (Clark County Parks and Community Services) as well as the Environmental Science Club from Paradise Elementary. Some activities scheduled with the RecMobile and Rural Recreation programs may be postponed to late spring or early summer due to transportation challenges, but interim solutions are being explored. Additional events for Spring Mountains Youth Camp are expected to be scheduled within the next quarter.

Marketing, Partnerships, and Community Outreach
Results from the initial assessment of the Discover Mojave Outdoor World events during Year 1 continue to be shared in substantive ways. In this quarter, presentations were made at three professional conferences:

- In December, 2005, Dr. Gregg Schraw and Dr. Lori Olafson presented the findings at the International Conference of the American Educational Research Association in Hong Kong.

- Dr. Jeanne Klockow joined Dr. Schraw and Dr. Olafson at the 2006 Our Places Tell Stories Conference to share with informal educators how assessment plans are developed. Approximately 20 participants attended their session titled “Developing Assessment Plans for Education in the Environment Programs.” The Outdoor World program was used as the primary example of how assessment tools were created and used to obtain meaningful data to document program success.

- On February 18, 2006, Ms. Sewing and Dr. Klockow presented at the National Association for Interpretation Region 8 Workshop hosted at Red Rock Canyon National Conservation Area. An overview of the Outdoor World program and the results from the Year 1 assessment were shared with approximately 20 attendees (see attached).

The Public Lands Institute is exploring a partnership with the Torino Foundation to use the facilities at Torino Ranch in the Spring Mountains for delivering Discover Mojave activities and other educational programming. Ms. Sewing attended a preliminary meeting on December 7, 2005, with members of the Torino Foundation Board; Alan O’Neill, Outside Las Vegas Foundation; and Public Lands Institute staff to discuss a range of possibilities. On January 11,
2006, Ms. Sewing participated in a site visit. It was generally agreed that Torino Ranch would be a great site for conducting canoeing and other outdoor recreational activities for the Outdoor World program. A tentative timeline has been set for Summer 2006, and the Torino Foundation and the Public Lands Institute are currently finalizing a Memorandum of Understanding to govern use of the Torino Ranch facilities.

**STATUS OF YEAR 2 DELIVERABLES**

<table>
<thead>
<tr>
<th>Year Two Deliverables (June 2005 – May 2006)</th>
<th>Percent Complete as of February 28, 2006</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 Forever Earth activities and programs; background information has been compiled. A plan and timeline for the curriculum is being implemented by a multi-agency team. Completion is anticipated by the end of Year 2. New events (rock climbing, for example) for the Discover Mojave Outdoor World program may potentially be added in Spring 2006.</td>
</tr>
<tr>
<td>Produce marketing plan for Forever Earth</td>
<td>15 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. Completion is anticipated by the end of Year 2. The Forever Earth website will be officially launched in the next quarter.</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. A web-based scheduling portal is currently being created.</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 sets will be collected as appropriately identified by the activities and programs developed for Forever Earth curriculum. Means for sharing the data will also be identified.</td>
</tr>
<tr>
<td>Coordinate 10 southern Nevada WOW/Discover Mojave events.</td>
<td>160 percent complete.</td>
<td>16 Year 2 events have been held to date, with an additional 13 events tentatively scheduled prior to the end of Year 2. Additional audience groups are being identified on an ongoing basis.</td>
</tr>
<tr>
<td>Operate Forever Earth according to the operations plan.</td>
<td>100 percent complete.</td>
<td>Forever Earth was scheduled 22 days in the past three months, benefiting more than 200 individuals.</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.

STRATEGIC PLANNING & COLLABORATION

Phase I of the Education Strategy is complete and was submitted with our last quarterly report. Progress on Phase II is moving forward and a cohesive plan is on target to be completed by May 31, 2006. During the past quarter, a strategy planning meeting was held on December 5, 2005 (see attached notes). The result of the meeting was agreement on the underlying meaning of theme statements; the creation of explanatory paragraphs for each theme (see attached), and a conversation about what the strategy should accomplish. Conversations among the Interagency Environmental Education team, the federal land managers, and the Executive Director of SNAP (various meetings in February and March 2006) are bringing us closer to a vision of what the five-year Strategic Plan will look like and accomplish.

In support of the interagency vision, the area-wide Environmental Education Committee continues to foster and provide coordination, collaboration, and strategic thinking and approaches. This committee, formerly known as the Outside Las Vegas Foundation Environmental Education Committee, has agreed on a new name: Partners for Education about the Environment. During the past quarter, the committee met two times on December 7, 2005, and February 8, 2006 (see attached meeting notes).

The Partners group has agreed on a vision, mission, goals, and objectives and has created an action plan (see attached). This group functions as a cooperative network of place-based educators that will help guide and implement the Strategy and help the federal agencies increase the public value of their education programs. Several tools are being employed to accomplish this collaboration, including training sessions, monthly meetings, and a bi-monthly listserve, which was launched in February 2006. The EAE Interchange (eaeinterachange@unlv.edu) is designed to foster communication and information exchange about environmental and heritage education efforts in southern Nevada. Each posting concentrates on these following areas:

- Updates (e.g., upcoming trainings, meetings, events)
- Grant and funding opportunities
- Links to websites, resources
- Information on stakeholders, management, resources, programs; etc.
- Professional development – including literature reviews, training opportunities, best practices and more
- Questions/needs
- Employment and volunteer opportunities
- Mentoring and Training: tips, peer evaluation, mentoring, and a speaker’s bureau

The effectiveness of the listserve will be evaluated every six months via an on-line questionnaire.
The following diagram illustrates the overall role the Partners in Education about the Environment will play in the Education Strategy:

**Partners for Education about the Environment -- a cooperative system of place-based educators**

**Cooperative System of Place-based Educators**

- Help develop funding strategy
- Help Develop Round 4 Strategy
- Who is doing what? What is missing?
- Coordinate resources
  - Program
  - Support
- Communication / networking
- Common language

**OUTCOME**

- Delivering programs and making better connections with our audiences
- Shared themes
- Shared audiences
- Increase number of people participating in our programs

**Better Programming**

- More resources
- Best practices
- Capitalize on knowledge of what is going on around us
- Understand the relationship among programs

**OUTCOME**

- Opportunities for learning, growth
- Training our educators
- Increase number of people participating in our programs

**OUTCOME**

- Increase number of people participating in our programs

*Note: The diagram outlines the role of Partners in Education about the Environment in the Education Strategy, highlighting areas such as who is doing what, what is missing, and strategies for improving programming and audience engagement.*
OUR PLACES TELL STORIES CONFERENCE

Providing training for local educators is critical to achieving our strategic objectives. To this end, an innovative conference for educators and others working at nature- and heritage-rich places was 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 came together to plan the “Our Places Tell Stories” conference to share and foster successful educational and interpretive strategies. Our vision is that once educators make effective connections with their audiences, children and adults will be inspired to understand, appreciate, and take care of Southern Nevada’s desert environment. A total of 120 participants and presenters from Nevada, Arizona, Utah, California, Washington, and Idaho attended the conference, representing the following organizations:

<table>
<thead>
<tr>
<th>Participant Affiliation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Agency</td>
<td>31</td>
</tr>
<tr>
<td>State Agency</td>
<td>32</td>
</tr>
<tr>
<td>County Agency</td>
<td>24</td>
</tr>
<tr>
<td>University</td>
<td>9</td>
</tr>
<tr>
<td>For-profit Business</td>
<td>12</td>
</tr>
<tr>
<td>Non-profit Organization</td>
<td>9</td>
</tr>
<tr>
<td>City Agency</td>
<td>1</td>
</tr>
<tr>
<td>Private Citizen</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

Despite the different affiliations, these participants face the same challenges in communicating with audiences. Two plenary sessions were delivered to introduce participants to the Education about the Environment Strategy and what it will accomplish. Participants created a visual representation of informal education efforts currently underway, giving them a vivid idea of how their individual efforts fit into the Strategy and specific ways that place-based programs and activities can benefit from an integrated approach.

Other conference sessions examined the best methods for using tools such as exhibits, publications, websites, videos, guided hikes, etc., through presentations by regional and national experts. The conference keynote speaker was Dr. Sam Ham, director of the Center for International Training and Outreach and Professor of Communication Psychology in the University of Idaho’s Department of Conservation Social Sciences. Dr. Ham’s keynote address and workshop addressed what environmental interpretation should be trying to accomplish, given that visitors will predictably forget much, most, or all of the factual content gleaned from any interpretive experience. Merging concepts from cognitive and social psychology, Dr. Ham provided details for a thematic approach that can have a positive and enduring impact on how visitors think, feel, and behave.

Another workshop was provided by David Guiney, director of the Harpers Ferry Center’s Interpretive Media Institute, who reviewed an eight-step process for media development used by the National Park Service. The strengths and weakness of various media types were examined, illustrated by numerous examples of museum and wayside exhibit projects. In addition,
participants were introduced to the quality standards for media and the specialized knowledge and experience needed on media teams. The session helped prepare participants to be media project managers in their areas, to better understand what parts of the media process they can accomplish themselves, and what parts might require additional help or professional services.

Other sessions addressed connecting with Native American audiences; how the No Child Left Behind Act and Nevada State education standards affect place-based education programs; questioning strategies to enhance informal education; how to use storytelling to bring science to many different audiences; and how to assess informal education programs.

Participants were asked to rate the following aspects of the inaugural conference on a scale from 1 (poor) to 4 (excellent). The results are summarized below and a complete summary is attached.

<table>
<thead>
<tr>
<th>Conference Elements</th>
<th>Average Rating (n=35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference program</td>
<td>3.64</td>
</tr>
<tr>
<td>Organization of the conference</td>
<td>3.81</td>
</tr>
<tr>
<td>Keynote presentation (Dr. Sam Ham)</td>
<td>3.70</td>
</tr>
<tr>
<td>Presenters – overall quality</td>
<td>3.45</td>
</tr>
<tr>
<td>Presenters – overall mix</td>
<td>3.39</td>
</tr>
<tr>
<td>Conference (overall)</td>
<td>3.59</td>
</tr>
</tbody>
</table>

Comments from participants included:
- One of the best organized conferences I have attended and I have gone to many professional conferences. You saw to it that every detail was attended to.
- This conference is a wonderful value - I was able to send several staff members and several volunteers.
- Quality of presenters was outstanding.
- The speakers really added to “telling the story” message.
- Speakers and presenters were of high quality, and the organization was great.
- I was hoping for a conference with one of two nationally known presenters – definitely got that with this one! Other, more regional, session was also very good and very valuable.
- Sam Ham’s information was spot on. I can return to my job tomorrow and use his tips for developing upcoming guided hikes and public programs.
- Dr. Ham’s theme sessions were exceptional.
- I am looking forward to sharing the concept of “themes” with our staff and beginning a plan to implement the idea of “themes.”
- I learned more specifics than anything.
- The way to properly plan a media presentation – the importance of networking with others – all the opportunities that exist – how education is so much more than facts.
- The media development process was very helpful as was Kay’s why, who, what, and how – I learned how to focus on the story, the connection, the experience.

About $12,000 in sponsorships was procured to offset the cost of producing this conference. Major sponsors included the Western National Interpretive Association, UNLV Division of Research and Graduate Studies, REI, Southern Nevada Interpretive Association and Outside Las Vegas Foundation, and Friends of Red Rock Canyon. Other partners included the Nevada
Department of Wildlife, UNLV Division of Educational Outreach, Springs Preserve, Nevada State Museum and Historical Society, and CHOLLA.

**Survey of Local Teachers**

As noted in our last quarterly report, 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). A modification request form submitted to the UNLV Internal Review Board to change the sampling protocol (see attached) was approved on January 15, 2006. In this altered protocol, science teachers in grades K-12 are being solicited to participate. Project Manager Allison Brody is working with the CCSD K-12 Science Coordinator to identify opportunities to reach groups of science teachers (for example, at workshops, trainings, and other professional development events). During the course of the professional development or other event, a neutral facilitator has briefly explained the purpose of the survey and distributed the consent form and survey to the participating teachers. Completed surveys are collected by the facilitator and delivered to Dr. Brody. To date, 50 surveys have been received using this protocol, with another 50 surveys still to be delivered. Survey analysis, which will begin by mid-March 2006, 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.

**Place-based Education Master’s Degree**

Program Manager Allison Brody has been working with UNLV visiting professor Dr. Mary Banbury to create a program concentration in place-based or informal science education at the master’s degree level. This concentration will help sustain the Education Strategy by creating a new pipeline of skilled educators who can deliver innovative and effective place-based education programs.

Interested stakeholders from the formal and informal education arenas, as well as other community partners, were invited to attend sessions to define the student clientele, the overall goals of the program, and to develop a list of the major components that should be included in the degree program. Notes from these sessions are attached. The results from these sessions were correlated with a framework produced by the North American Association for Environmental Education called the Guidelines for the Preparation and Professional Development of Environmental Educators (see attached). Research into other degree programs offered throughout the U.S. was conducted, and sample course offerings were included in this framework. 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.

**Coordination of Other Conservation Initiative Efforts**

Project Manager Allison Brody facilitated a meeting with the Interagency Recreation team on December 8, 2005, that resulted in a plan for an OHV information packet (see attached notes and matrix). The Interagency EE team is also helping with the content and format for a Law Enforcement brochure being developed by the Interagency Resource Protection team. This is being accomplished via meetings (November 15, 2005, and February 23, 2006), as well as email and telephone communications.
COMMUNITY OUTREACH

Allison Brody and Kim Hutson de Belle, Program Manager for Outside Las Vegas Foundation, continue to work on a project titled “Connecting the Hispanic Community to the Mojave Desert through Recreation Art Projects.” They jointly facilitated a second Art and Hispanic Cultural Corridor Visioning meeting on December 13, 2005 (see attached notes).

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

- An interpretive planning workshop for the proposed Sloan Canyon Visitor Center.
- A six-hour training session in Desert Ecology as part of the Friends of Red Rock Canyon volunteer training program.

SUMMARY OF DELIVERABLES

<table>
<thead>
<tr>
<th>Year Two Deliverables (June 2005 – May 2006)</th>
<th>Percent Complete as of February 28, 2006</th>
<th>Plan for Completion in Year Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a five-year strategic plan to include, but not limited to, goals, objectives and desired future conditions, which becomes Section II of the area-wide Outdoor Environmental Education Strategy.</td>
<td>50% complete</td>
<td>Agreement reached on underlying meaning of theme statements; explanatory paragraphs created for each theme. Partners group has agreed on a vision, mission, goals, objectives, and action plan. Planning meetings throughout March and April will result in a 5-year Strategic Plan.</td>
</tr>
</tbody>
</table>

Submitted by:

______________________________  ____________________
Margaret N. Rees               Date
Principal Investigator