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Executive Summary

Highlights of the university’s focused efforts during the past three months include the following:

- One Families in Nature event was held, benefitting approximately 40 people.
- A media campaign has been developed for the Nevada Children’s Outdoor Bill of Rights.
- A total of 18 people are participating in the fourth cohort of the Nevada State Certification in Environmental Education and Interpretation.
- An RV has been purchased for the SNAP Mobile Exhibit and is in process of being retrofitted.
- Forever Earth was scheduled for 16 days and benefited 425 individuals.
- The National Park Service used Forever Earth as a mobile visitor center on four dates and made 845 visitor contacts.
- Twenty-six Discover Mojave Outdoor World events were conducted for 1,402 participants.

Conservation Education and Interpretation

The following progress has been made toward CE&I project objectives in this quarter:

Project 1 - Task 1. Assist CI teams in the implementation of at least three educational projects.

a. Identify at least one project each year to focus on from the following areas of strategic importance to SNAP: litter prevention, responsible OHV recreation, wilderness, and/or restoration. Agency personnel, including SNAP CI teams, will assist in the identification of these educational projects, providing necessary information and guidance. Project identification will be completed by August 31 of each year.

The project identified for this year is a graphic novel with an anti-litter/desert dumping theme.

b. SNAP Executive Director and PLI staff will work with SNAP Board of Directors to determine focus areas and context of delivery of messages for these focus areas.
A meeting is being scheduled with Kate Hanson, SNAP Executive Director.

c. **PLI staff, appropriate agency staff, and other experts will determine the best set of delivery systems for each area of strategic importance. Possible delivery systems include brochures, kiosks, multi-media products, billboards, electronic devices such as MP3 players etc.**

The delivery system identified is a graphic novel that will be created by well-known artists, the Fillbach Brothers. Graphic novels first appeared in the 1950’s and 1960’s as a comic strip written to be a longer story. There has been a recent revival in this media: sales went up 500% from 2001 to 2007, now making this a close to $4 million dollar business. More importantly, graphic novels have an appeal that catches children’s attention and makes them take notice.

d. **Key user groups and best educational methodologies will be identified for each project, drawing upon the expertise of university faculty and staff. This will be completed by October 31 of each year.**

The topic of desert dumping is probably most appropriate for students in middle school and high school.

e. **CE&I products and services for the focus project will be created and implemented by PI/Project Manager Allison Brody with assistance from the UNLV graduate student, Curriculum Development Personnel, Media Relations, and Web Communications. UNLV fiscal and clerical personnel will assist the PI/Project Manager with ordering, tracking, and documenting the purchase and delivery of required materials, supplies, and equipment. Agency personnel will assist in product development, review, and execution within their agency educational programs. Examples of possible projects include brochures, interpretive signs, web site content, multi-media products, curricula, and/or programs delivered by CE&I staff. Each project will be completed by May 31 of each year.**

A draft idea for this graphic novel has been presented to the SNAP Litter Team for review and comments.

**Project 1 – Task 2. Produce assessment proposals and reports for at least two CE&I products or services.**

a. **Identify data collection protocols for assessment of CE&I projects in priority focus areas: litter prevention, responsible OHV recreation, wilderness, and/or restoration. This activity for the selected focus area will be completed by November 30, 2007 and November 30, 2010.**

This task has been completed in previous years. An assessment plan is being developed for the Children’s Outdoor Bill of Rights campaign, including evaluation goals and data collection protocols.

b. **Drawing upon the expertise of university faculty and staff, the PI/Project Manager will write assessment proposals to human-subject standards specified by UNLV’s Internal Review Board. These proposals will be completed by February 28, 2008 and February 2, 2011.**

No progress was made this quarter.

c. **Assessment end results will be cooperatively determined with the PLI staff, SNAP Executive Director, SNAP Board and appropriate agency staff.**
No progress was made this quarter.

d. Collect and analyze data, using UNLV faculty and research assistants as needed. PI/Project Manager, with assistance from the UNLV graduate student and hourly personnel, will produce a written report by May 31, 2008 and May 31, 2011.

No progress was made this quarter.

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**Project 1 – Task 3. Document number of people reached by CE&I programs and services of the four federal agencies and cooperating partners.**

This has been completed. A follow-up meeting is scheduled for September 10, 2010 with Angelina Yost (USFWS), Janis Kadlec, Sky McClain, and Ellen Anderson. Representatives from the USFS and BLM will also be invited.

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**Project 1 – Task 4. Work with at least one private sector group to implement at least two educational projects.**

a. Identify two or more projects for delivering SNAP priority focus area messages to at least one private sector group. Examples of private sector groups interfacing with public lands include tour companies, concierge associations, and housing developers. Examples of projects that incorporate SNAP messages could be the development of a training program for a tour company or an interpretive plan for a trail system through a housing development. Agency personnel, including SNAP CI team members, will provide necessary information and guidance. SNAP Executive Director will work with PLI to develop concepts for private sector educational programs. At least one project will be identified by August 31, 2008, and an additional project will be identified by August 31, 2009.

In a letter dated July 21, 2010, the SNAP Education Team and the SNAP Board have advised UNLV not to proceed with this deliverable.

b. CE&I products and services for the focus project will be created and implemented by PI/Project Manager, with assistance from the Curriculum Development Personnel, the UNLV graduate student, and Media Relations. UNLV fiscal and clerical personnel will assist the PI/Project Manager with ordering, tracking, and documenting the purchase and delivery of required materials, supplies, and equipment. Agency personnel will assist in project execution. Each project will be completed by May 31 of each year (2008 and 2010, respectively).

The SNAP Education Team and the SNAP Board have advised UNLV not to proceed with this deliverable.

c. SNAP Executive Director will provide briefings to the SNAP Board of Directors on proposed private sector educational projects.

The SNAP Education Team and the SNAP Board have advised UNLV not to proceed with this deliverable.
Project 1 – Task 5. Work with the Hispanic community to implement at least two educational projects.

a. PLI staff, in coordination with the appropriate agency staff, will identify at least one project for delivering SNAP priority focus area messages to Hispanic community by convening one or more stakeholder meetings. Examples of potential projects include interpretive projects and educational programs delivered at community events. Project identification will be completed by January 31, 2009.

One “Families in Nature” event was held this quarter, consisting of a field trip to the Spring Mountains on July 17, 2010 to participate in a citizen science project called “Ant Safari.”

b. CE&I products and services for the focus project will be created and implemented by PI/Project Manager, with assistance from the Curriculum Development Personnel, the UNLV graduate student, and Media Relations. UNLV fiscal and clerical personnel will assist the PI/Project Manager with ordering, tracking, and documenting the purchase and delivery of required materials, supplies, and equipment. Agency personnel will assist in project execution.

About 40 people attended the July 17, 2010 Families in Nature field trip. Activities included a USFS-sponsored Ant Safari program. Following a pot-luck lunch and recreational free-play at the Cathedral Rock picnic area, the group participated in a scavenger hunt and an interpretive visit to a nearby burn site from a recent forest fire (see attached planning document and event evaluation).

c. PLI staff, in collaboration with agency staff, will identify additional potential projects or services suggested by follow-up stakeholder meetings.

A planning meeting was held on August 24, 2010 for the next Families in Nature field trip, to be held on September 25, 2010.

d. PI/Project Manager, with assistance from the Curriculum Development Personnel, the UNLV graduate student, Media Relations, general clerical support, and agency personnel will create and implement one additional program or service for the Hispanic community, evaluating success and documenting milestones in a written report.

PLI and Language Sources are in process of producing additional Spanish-language Guardian of Nature comic books featuring Super Hector.

e. PI/Project Manager will enlist the services of professional social researchers to create and implement a survey and monitoring program of the Hispanic community. Initial survey will focus on visitors to areas selected by the SNAP Board of Directors. Preliminary survey results will be provided to the SNAP Board of Directors as they become available. The results will be used to guide Hispanic messaging and outreach program development and implementation. The messaging and outreach program will be implemented by PI/Project Manager Allison Brody, with assistance from contracted marketing specialists, the UNLV graduate student, Media Relations, and Web Communications. UNLV fiscal and clerical personnel will assist the PI/Project Manager with ordering, tracking, and documenting the purchase and delivery of required materials, supplies, and equipment. Agency personnel will assist in product
development, review, and execution within their agency educational programs. Agency personnel will assist in project development and implementation.

The SNAP Recreation Team is reviewing the final draft of the SNAP Hispanic Outreach OMB Proposal, including the proposed phone survey and focus group questions (see attached).

f. A database will be created by contracted personnel, and the results of the survey and monitoring program will be entered into this database. A step-by-step resource guide for connecting with Hispanic communities will be completed based on this research by January 31, 2011.

No progress has been made this quarter.


a. Administer educators’ listserv/blog on a monthly basis, with assistance of Media Relations and Web Communications personnel and input from agency staff.

Postings and associated information can be viewed at http://blog.enviroedexchange.org/ and www.enviroedexchange.org.

b. Attend bi-monthly meetings of CHOLLA, a collaborative group of Clark County School District personnel and informal educators and from more than 20 informal education organizations in the Las Vegas area, including representatives from each of the four federal agencies.

Amy Page attended a CHOLLA meeting on June 15, 2010 on behalf of Allison Brody. The Professional Development subcommittee made a presentation on marketing EE&I programs.

c. Appropriate agency staff will attend Partners for Education about the Environment meetings and work to collaboratively to identify regional education focus and efforts.

Amanda Rowland (NPS/SNAP) continues to facilitate CHOLLA meetings.

d. Implement stated goals (listed below) for Partners for Education about the Environment with assistance from Media Relations, general clerical support, agency personnel, and the UNLV graduate student.

The “GreenPrint: Nevada’s Environmental Literacy Plan, Part 1” was presented to the Nevada Board of Education on August 12, 2010 by Allison Brody and Amy Page (PLI), Amanda Rowland (SNAP), Jonathan Mueller (Sierra Nevada Journeys), Kris Carrol (CCSD), Ryan Brock (UNR, WCSD), and Richard Vineyard (Nevada Department of Education) (final draft posted at http://grovesite.com/page.asp?o=SNAP&s=Ed&p=136247). Board members are expected to review and comment on this draft, providing input and direction.

Our goal is to have the GreenPrint adopted by the State Board of Education following the January Board meeting.
Project 1 – Task 7. Develop Public Awareness Campaign to inform residents about the benefits of our public lands; encourage residents to learn about the plants, animals, rocks, and the natural and cultural history of Southern Nevada; and motivate people of all ages to responsibly explore outdoor recreational opportunities on public lands.

Initial ideas for the Nevada Children’s Outdoor Bill of Rights media campaign were presented to the SNAP Board and Kate Hanson (Executive Director) on June 18, 2010. The communications plan and associated ad campaigns (print, radio, and cinema) were approved by the Children’s Outdoor Bill of Rights Alliance Steering committee on August 17, 2010. SNAP Education team members serve on this Steering Committee. Campaign materials are posted on Grovesite, along with a style guide for the COBOR logo (http://grovesite.com/page.asp?o=SNAP&s=Ed&p=136247).

Project 1 – Task 8. Develop Mobile Exhibit program to deliver SNAP messages.

a. PI/Project Manager will coordinate the development and construction of three-dimensional museum-quality exhibits with graphical elements and supporting educational materials, with assistance from the Curriculum Development Personnel, the UNLV graduate student, and Media Relations. SNAP and agency staff will assist in project development and implementation, message and graphic design development, and with the design of quality assurance protocols to ensure the consistent and effective use of the exhibit program. This will be completed by May 31, 2010.

A 2003 Winnebago Adventurer Class A RV, model CA35U was purchased, registered, and insured. CAD drawings and engineering specs are being completed.

The Mobile Exhibit planning team is reviewing a draft matrix of proposed touchpoints for the interactive relief map (see attached). The purpose of these touchpoints is to connect people to Southern Nevada places through recreation opportunities; the goal is to give outdoor recreation a rich context and make these experiences meaningful, ultimately stimulating a desire to care for these places.

Project 1 – Task 9. Investigate potential delivery systems for integrating SNAP messages into the Clark County School District.

This task was completed in Year 2.


a. PI/Project Manager, in cooperation with the Nevada Natural Resource Education Council, will facilitate the implementation of the Nevada State Certification Program for Environmental Education and Interpretation (NEE&I). Certification program components will include: recruitment and registration of Certificate Program participants; four workshops for Certification program participants; mentor-training workshops; and supervised internships for Certification program participants. SNAP and agency staff will provide review of certificate standards. Curriculum will be developed for the pilot program by May 31, 2008.
Eighteen people registered for the fourth cohort of the NEEI program, completing coursework held July 21-28, 2010 (see attached roster). Participants are in process of completing capstone facilitations and homework assignments.

b. PI/Project Manager will facilitate the planning and implementation Our Places Tell Stories conference. Conference components will include: identification and invitation of speakers, including a keynote; recruitment and registration of participants; creation of conference program; and facility logistics (food, rooms, set-up, etc.). The conference will be held on March 4-6, 2008. If sufficient sponsorships are procured, it will be possible to hold an additional conference before May 2010.

This task has been completed.

### SUMMARY OF YEAR 4 (ROUND 6) DELIVERABLES – CE&I

<table>
<thead>
<tr>
<th>Year Two deliverables  (June 2010 – May 2011)</th>
<th>Percent Complete as of August 31, 2010</th>
<th>Plan for Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project 1 – Task 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Identify at least one project each year to focus efforts.</td>
<td>100%</td>
<td>Completed: a graphic novel on desert dumping.</td>
</tr>
<tr>
<td>b. SNAP Executive Director and PLI staff will work with SNAP Board of Directors to determine focus areas and context of delivery of messages for these focus areas.</td>
<td>In process</td>
<td>Meeting with Kate Hanson needs to be scheduled. SNAP Litter team is reviewing.</td>
</tr>
<tr>
<td>d. Key user groups and best educational methodologies will be identified for each project.</td>
<td>In process</td>
<td>Proposed: middle-high school with education extensions.</td>
</tr>
<tr>
<td>e. CE&amp;I products and services for the focus project will be created and implemented.</td>
<td>In process</td>
<td>In review by SNAP.</td>
</tr>
<tr>
<td><strong>Project 1 – Task 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Produce assessment proposals and reports for at least two CE&amp;I products or services.</td>
<td>150%</td>
<td>An assessment plan is being developed for the Children’s Outdoor Bill of Rights campaign.</td>
</tr>
<tr>
<td><strong>Project 1 – Task 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document number of people reached by CE&amp;I programs and services of the four federal agencies and cooperating partners.</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>Project 1—Task 4</strong></td>
<td></td>
<td>Allison Brody has been directed not to complete this deliverable.</td>
</tr>
<tr>
<td><strong>Project 1 – Task 5</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Identify project for delivering SNAP priority focus area messages</td>
<td>100%</td>
<td>Families in Nature program; Super Hector comic</td>
</tr>
</tbody>
</table>
b. Create and implement project. 100%  Continue delivering Families in Nature program and developing additional Super Hector comic books.

**Project 1 – Task 6**

| a. Administer educators’ listserv/blog. | Continuous |
| b. Participate in CHOLLA. | Continuous |
| c. Appropriate agency staff will attend CHOLLA meetings. | Continuous |
| d. Implement stated goals (see overview section) for Partners for Education about the Environment. | Continuous |

**Project 1 – Task 7**

Develop a media plan and budget for the implementation of the public awareness campaign. This will be complete by January 5, 2009 100%  Children’s Outdoor Bill of Rights media plan presented to SNAP Board; approved by COBOR planning team and SNAP Education team.

**Project 1 – Task 8**

Coordinate the development and construction of three-dimensional museum-quality exhibits with graphical elements and supporting educational materials 50%  Design plan to be finalized and implemented in the coming quarter.

**Project 1 – Task 9**

Investigate potential delivery systems for integrating SNAP messages into the Clark County School District. 100%

**Project 1 – Task 10**

Develop a Nevada State EE&I Certificate Program and conduct an Our Places Tell Stories Conference. 100%  18 people are participating in the fourth cohort of the NEEI program.
FOREVER EARTH PROGRAM

The following progress has been made toward Forever Earth project objectives in this quarter.

*Project 2 – Task 1. Coordinate and schedule Forever Earth uses.*

a. Revise Forever Earth Standard Operating Procedures (SOPs; Sewing et. al., 2006) and produce revised SOP edition.

The Forever Earth SOPs has been updated and revised to reflect changes in program and boat operations (see attached). A copy of the SOPs is located in the main cabin of Forever Earth.

b. Provide training on revised SOPs for boat captains and deckhands. This activity will be completed by September 30 of each year.

Training is scheduled for September 14, 2010 for all boat crew and program facilitators from the Public Lands Institute and National Park Service.

c. Maintain Forever website and update content.

This activity is on-schedule to be completed by May 31, 2011, as needed.

*Project 2 – Task 2. Schedule and deliver educational programming for a minimum of 25 trips.*

a. Coordinate with Clark County School District teachers as well as private school teachers and home school educators to schedule a minimum of 25 educational trips on Forever Earth. This will be completed by May 31 of each year.

This task is on schedule to be completed May 31, 2011.

In the first quarter, 423 passengers benefited from educational programming during 12 trips aboard Forever Earth. These are detailed in the following table. Highlights of Forever Earth educational use included:

- Fifth-grade students from Twitchell Elementary School (June 2, 3, and 4, 2010), from Vandenburg Elementary School (June 7, 8, and 9, 2010), and from Jeffers Elementary School (June 11 and 25, 2010) learned about the suitability of Lake Mead’s habitat for razorback suckers.
- Fifth-grade GATE students from Steel Elementary School (June 10, 2010) participated in Invasive Species curriculum activities and learned about the impacts of quagga mussels on Lake Mead.
- On June 12, 2010, Forever Earth was part of the activity schedule to celebrate National Marina Day and Get Outdoors Day at Callville Bay Marina.
- Teens from Westcare’s Harris Springs Ranch participated in Science and Art Adventure activities on June 29, 2010.
- On July 12, 2010, youth from Child Focus participated in Science and Art Adventure activities.

*(NOTE: See attached for a listing of all Forever Earth trips conducted during the 1st Quarter.)*
b. Review and revise existing Forever Earth curricula (Sewing et. al, 2006) and produce revised annual editions. This will be completed by May 31 of each year, beginning in 2008.

The 2007-2008 Edition was completed by May 31, 2008.


The 2009-2010 Edition was completed by May 31, 2010.

The 2010-2011 Edition is on schedule for completion by May 31, 2011.
c. Drawing upon the expertise of university faculty and staff, develop and produce one additional curriculum module for sixth-grade students.

This activity was completed in Year 1.

d. Identify and purchase any needed program materials, supplies, equipment, and/or visual aids required for delivering the curriculum. This will be completed by May 31 of each year.

This activity was completed in Years 1, 2, and 3.

This activity is on-going as items are identified throughout Year 4. This task is on schedule to be completed by May 31, 2011.

e. Develop a partnership with one of the agencies responsible for water quality monitoring for integrating data collection performed by high school students into an ongoing research database. This will be completed by May 31, 2008.

This activity was not completed due to the low number of high schools scheduling field trips aboard Forever Earth. It was determined by the Curriculum Development Team to re-assign resources to on-going improvements and additional activities for the 7th grade Forever Earth curriculum.

f. Develop one additional curriculum module for fifth grade students. This will be completed by May 31, 2009.

This activity was completed in Year 2.

This activity was completed in Year 3.

h. Working with agency personnel and drawing upon the expertise of university faculty and staff, produce a written assessment report that summarizes changes in student and teacher knowledge, attitudes, and performance and includes recommendations for program improvement. Utilize UNLV research assistants and faculty as needed to collect and analyze data.

An assessment of the 2009/2010 curriculum was conducted during Year 3, Round 6. Student knowledge, performance skills, and attitudes and teachers’ perceptions of the program were measured using assessment tools developed in previous years. Data was collected and organized by Michelle Weibel, UNLV graduate student assisting with the Forever Earth program. Dr. Lori Olafson and Dr. Greg Schraw, UNLV Educational Psychology Department, analyzed the data and summarized the findings in a report titled, “Assessment of Forever Earth Curriculum 2009/2010” (see attached). The results support several conclusions:

1) The most important conclusion is that each of the curricula assessed (fourth, fifth, and seventh grades) produced substantial increases in knowledge, indicating that the activities had significant instructional benefit.

2) Student attitudes improved significantly after experiencing the curriculum in two of the three grade levels.

3) All participants achieved mastery of the skills assessed within each curriculum.
4) The gain between pre- and post-test for knowledge and attitudes was maintained at the two-week follow-up post-test.

Project 2 – Task 3. Schedule a minimum of three trips per year for research purposes.

a. Develop and distribute a letter of introduction and a program brochure to university, state, and federal researchers in Nevada, Arizona, and Utah to inform them of Forever Earth and its purpose. This will be completed by August 31, 2007.

This activity was completed during Year 1.

b. Coordinate with university, state, and federal researchers to schedule Forever Earth for a minimum of three scientific research trips. This will be completed by May 31 of each year.

No progress was made on this activity in this quarter.

c. Identify and purchase any needed research supplies and/or equipment. This will be completed by May 31 of each year.

No progress was made on this activity in this quarter.

d. Revise Forever Earth program brochure (Sewing and Miller, 2006) as necessary. Distribute a letter of introduction and program brochure to university, state, and federal researchers in Nevada, Arizona, and Utah to inform them of Forever Earth and its purpose. This will be completed by August 31, 2008 and 2009.

This task was completed in previous years.

Project 2 – Task 4. Schedule Forever Earth as a mobile visitor center.

a. Coordinate with the Interpretive Division at Lake Mead National Recreation Area on a continuous basis to schedule Forever Earth at least twice per month during peak visitation (June, July, August of each year).

The National Park Service (NPS) used Forever Earth as a mobile visitor center on four occasions this quarter (see table below). These were the only reservations made for the quarter. NPS interpreters made 845 visitor contacts and conducted programs on water safety, desert animals, and quagga mussels.

(NOTE: See attached for a listing of all Forever Earth trips conducted during the 1st Quarter.)

<table>
<thead>
<tr>
<th>Date(s)</th>
<th>Group Type</th>
<th>Group</th>
<th>Trip Purpose</th>
<th>Length of Trip</th>
<th># of NPS Staff</th>
<th># of Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Jul</td>
<td>National Park Service</td>
<td>Agency</td>
<td>Mobile Visitor Center</td>
<td>6 hrs.</td>
<td>2</td>
<td>170</td>
</tr>
<tr>
<td>24-Jul</td>
<td>National Park Service</td>
<td>Agency</td>
<td>Mobile Visitor Center</td>
<td>6 hrs.</td>
<td>2</td>
<td>303</td>
</tr>
<tr>
<td>7-Aug</td>
<td>National Park Service</td>
<td>Agency</td>
<td>Mobile Visitor Center</td>
<td>6 hrs.</td>
<td>2</td>
<td>153</td>
</tr>
<tr>
<td>21-Aug</td>
<td>National Park Service</td>
<td>Agency</td>
<td>Mobile Visitor Center</td>
<td>6 hrs.</td>
<td>2</td>
<td>219</td>
</tr>
</tbody>
</table>

Education in the Environment: A Strategy for Continued Interagency Outdoor Programming
Quarterly Report: Year 4 ● Quarter 1
<table>
<thead>
<tr>
<th><strong>TOTALS for 1st quarter</strong></th>
<th><strong>Agency -4 groups</strong></th>
<th><strong>4 uses of Forever Earth as mobile visitor center</strong></th>
<th><strong>Agency -24 hrs.</strong></th>
<th><strong>8</strong></th>
<th><strong>845</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTALS for Year 7</strong></td>
<td><strong>Agency -4 groups</strong></td>
<td><strong>4 uses of Forever Earth as mobile visitor center</strong></td>
<td><strong>Agency -24 hrs.</strong></td>
<td><strong>8</strong></td>
<td><strong>845</strong></td>
</tr>
</tbody>
</table>

*Project 2 – Task 5. Provide Forever Earth for agency purposes for a minimum of six trips per year.*

a. Coordinate on a continuous basis with local, state, and federal agencies to schedule Forever Earth for a minimum of six trips per year. This will be completed by May 31 of each year.

No progress was made on this activity in this quarter.

*Project 2 – Task 6. Provide funding for student field trips to public land sites.*

PI/Project Manager Daphne Sewing, with the assistance from the UNLV graduate student, will coordinate and disburse transportation funding for field trips to public lands by Clark County School District students.

a. Produce a written report on Transporting Students to Public Land Sites for Field Trips. The report will include recommendations for future implementation.

This activity was completed during Year 1.

b. During the 2007-2008 school year, provide transportation funding for a minimum of 15 field trips to public lands.

This activity was completed during Year 1.

c. During the 2008-2009 school year, provide transportation funding for a minimum of 35 field trips to public lands.

This activity was completed during Year 2.

d. During the 2009-2010 school year, provide transportation funding for a minimum of 35 field trips to public lands.

In this quarter, funding for bus transportation was provided for 12 field trips.

*Project 2 – Task 7. Implement additional program assistance.*

PI/Project Manager Daphne Sewing, with assistance from the UNLV Project Planner, will evaluate and, to the extent possible, implement a volunteer or other workforce structure to increase the scope of delivery and impact of the program.

a. Determine and, to the extent possible, implement the most efficient, high quality delivery structure for the Forever Earth program.

This task was completed during Year 3.
The following progress has been made toward Outdoor World project objectives in this quarter.

**Project 3 – Task 1. Conduct a minimum of 25 Outdoor World events annually.**

*a. Coordinate and develop a schedule of events for the year. This will be completed by September 30 of each year.*

A draft schedule of activities for Year 4 (Round 6) has been developed (see attached). Clark County School District will be scheduling 16 activities for middle school and high school physical education students during the 2010-2011 school year; activity dates are being discussed. Interest from recreation and community centers to schedule additional activities will be reflected in subsequent revisions of this schedule.

*b. Utilize UNLV students and staff, volunteers, and federal agency personnel to conduct a minimum of 25 events. This will be completed by May 31 of each year.*

In this quarter, 26 events were conducted for 1402 participants (see table below).

The Public Lands Institute was one of the many sponsors of the annual Free Fishing Day, held at Lake Mead NRA, on June 12, 2010. Project Manager Daphne Sewing participated on the planning team, along with PLI and NPS staff, provided a fish art activity during the day’s event.

PLI staff also participated in another general public fishing activity on July 17, 2010. The U.S. Fish and Wildlife Service hosted a Carp Rodeo at Pahranaghat National Wildlife Refuge. PLI staff provided a fish art activity during the day’s event.

Several activities were conducted for youth participating in summer programs at Neighborhood Recreation Center, North Las Vegas Parks and Recreation Department; Henderson Multigenerational Center, Henderson City Parks and Recreation Department; and Paradise Recreation Center, Clark County Parks and Recreation Department.

Six activities were conducted for at-risk youth being supervised by two Westcare units, Harris Springs Ranch and Teen Intervention.

Youth from Child Focus participated in Science and Art Adventure activities aboard Forever Earth on July 12, 2010.

A geocaching activity was conducted for campers participating in the Adventure Program at Camp Lee Canyon on July 28, 2010.

A kayaking activity was provided for the Clark County Black Youth Caucus on July 31, 2010.

### Discover Mojave Outdoor World Schedule
#### Quarter 1, Year 4

<table>
<thead>
<tr>
<th>DATE</th>
<th>GROUP</th>
<th># of PARTICIPANTS</th>
<th>ACTIVITY</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, June 8</td>
<td>Westcare Boys, Harris Springs</td>
<td>6</td>
<td>Rock Climbing I</td>
<td>Nevada Indoor Climbing Center</td>
</tr>
<tr>
<td>Date</td>
<td>Location</td>
<td>Activity</td>
<td>Participants</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Saturday, June 12</td>
<td>General Public, Free Fishing Day</td>
<td>Fishing Art Activity</td>
<td>465 204</td>
<td></td>
</tr>
<tr>
<td>Thursday, June 24</td>
<td>Paradise Recreation Center, Clark Co Parks and Recreation</td>
<td>Geocaching</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Saturday, June 26</td>
<td>Neighborhood Recreation Center, NLV Parks and Recreation</td>
<td>Kayaking</td>
<td>28</td>
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</tr>
<tr>
<td>Monday, June 28</td>
<td>Henderson Multigenerational Center</td>
<td>Rock Climbing</td>
<td>25</td>
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<tr>
<td>Tuesday, June 29</td>
<td>Westcare Boys, Harris Springs Ranch</td>
<td>Science and Art Adventure</td>
<td>18</td>
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<td>Wednesday, July 7</td>
<td>Neighborhood Recreation Center, NLV Parks and Recreation</td>
<td>Rock Climbing</td>
<td>18</td>
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</tr>
<tr>
<td>Monday, July 12</td>
<td>Child Focus</td>
<td>Science and Art Adventure</td>
<td>16</td>
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<tr>
<td>Tuesday, July 13</td>
<td>Westcare Boys, Harris Springs Ranch</td>
<td>Kayaking</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Saturday, July 17</td>
<td>General Public, Carp Rodeo</td>
<td>Fishing Art Activity</td>
<td>300 51</td>
<td></td>
</tr>
<tr>
<td>Tuesday, July 20</td>
<td>Neighborhood Recreation Center, NLV Parks and Recreation</td>
<td>Fishing Geocaching</td>
<td>23 x 2 = 46</td>
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<tr>
<td>Monday, July 26</td>
<td>Henderson Multigenerational Center</td>
<td>Fishing Geocaching</td>
<td>12 x 2 = 24</td>
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<tr>
<td>Tuesday, July 27</td>
<td>Henderson Multigenerational Center</td>
<td>Fishing Geocaching</td>
<td>12 x 2 = 24</td>
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</tr>
<tr>
<td>Wednesday, July 28</td>
<td>Clark County Parks and Recreation</td>
<td>Geocaching</td>
<td>85</td>
<td></td>
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<tr>
<td>Saturday, July 31</td>
<td>Clark County Black Youth Caucus</td>
<td>Kayaking</td>
<td>7</td>
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<tr>
<td>Tuesday, August 3</td>
<td>Paradise Recreation Center, Clark County Parks and Recreation</td>
<td>Kayaking</td>
<td>9</td>
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</tr>
<tr>
<td>Wednesday, August 4</td>
<td>Westcare Teen Program</td>
<td>Science and Art Adventure</td>
<td>9</td>
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</tr>
<tr>
<td>Monday, August 9</td>
<td>Henderson Multigenerational Center</td>
<td>Kayaking</td>
<td>20</td>
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<td>Tuesday,</td>
<td>Henderson</td>
<td>Kayaking</td>
<td>15</td>
<td></td>
</tr>
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</table>
c. **Draw upon the expertise of university faculty and staff to produce a written assessment report that summarizes changes in participant knowledge, attitudes, and performance and includes recommendations for program improvement. Utilize UNLV research assistants as needed to collect and analyze data.** This will be completed by August 31 of each year, beginning 2008.

An assessment protocol was continued through the sixth year of the Outdoor World program (Year 3, Round 6). Participant knowledge, performance skills, and attitudes and teachers’ perceptions of the program were measured using assessment tools developed and refined in the previous years. Data was collected and organized by Michelle Weibel, UNLV graduate student assisting with the Forever Earth program. Dr. Lori Olafson and Dr. Greg Schraw, UNLV Educational Psychology Department, analyzed the data and summarized the findings in a report titled “Assessing Discover Mojave Outdoor World, Year 6 of Program” *(see attached).* The results support several conclusions:

1) The assessments are capable of assessing different measures of growth from the beginning to the end of the program in a comprehensive and reliable manner.
2) The program events continue to have a significant impact on participants’ knowledge and skills, based on growth from pre- to post-intervention assessments.
3) Overall, results from the assessments showed that program events have a significant and positive impact on participant’s knowledge, skills, and attitudes.

d. **Maintain website to highlight program activities and partner contributions and update content as necessary.** Website content will be evaluated regularly by agency staff. This will be completed by May 31 of each year.

This task is on schedule to be completed by May 31, 2010.

**Project 3 – Task 2. Develop a minimum of one new Outdoor World activity each year.**

a. **UNLV and agency staff will work together to identify the type of recreational activity to develop into an additional event for targeted youth audience.** This will be completed by August 31 of each year.

An additional fishing activity is being investigated at the request of the U.S. Fish and Wildlife Service.

b. **Develop curriculum (goals, objectives, programs, activities, locations, etc.) for the selected recreational activity.** This activity will be completed by January 31 of each year.

This task is on schedule to be completed.

c. **Field test new event curriculum, make changes, and finalize curriculum.** This will be completed by May 31 of each year.
This task is on schedule to be completed.

Project 3 – Task 3. Develop a minimum of two partnerships that increase the impact of the program each year to assist in conducting Outdoor World events, providing financial assistance, or supplying the desired target audience of economically disadvantaged youth, ages 8-12.

a. UNLV, SNAP Executive Director, and SNAP Board of Directors work together to identify potential new partners.

No work was completed on this task during the first quarter.

b. UNLV and appropriate agency staff, including the SNAP Board of Directors, will contact potential partners for intended purposes. This will be completed by October 31 of each year.

PI/Project Manager Daphne Sewing worked with three new partners during the quarter: 1) Paradise Recreation Center, Clark County Parks and Recreation Department; 2) Child Focus; and 3) Henderson Multigenerational Center, Clark County Parks and Recreation Department.

c. Formulate a minimum of one partnership. This will be completed by January 31 of each year.

This task is ongoing. Plans are to continue the relationships established with Paradise Recreation Center and Henderson Multigenerational Center.

d. Highlight partner contributions on website. This activity will be completed by May 31 of each year.

This task is on schedule for completion.

Project 3 – Task 4. Implement additional program assistance.
PI/Project Manager Daphne Swing, with assistance from the UNLV Project Planner, will evaluate and, to the extent possible, implement a volunteer or other workforce structure to increase the scope of delivery and impact of the program.

a. Determine and, to the extent possible, implement the most efficient, high quality delivery structure for the Outdoor World program. This will be done by May 31, 2010.

This task was completed during Year 3.
## STATUS OF YEAR 4 (ROUND 6) DELIVERABLES – FOREVER EARTH & OUTDOOR WORLD

<table>
<thead>
<tr>
<th>Year Four Deliverables (June 2010 – May 2011)</th>
<th>Percent Complete as of August 31, 2011</th>
<th>Plan for Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOREVER EARTH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project 2 – Task 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Revise SOP</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>b. Provide training on SOP for boat crew.</td>
<td>20%</td>
<td>Training is scheduled for September 14, 2010.</td>
</tr>
<tr>
<td>c. Update and maintain website.</td>
<td>0%</td>
<td>Updates will be made as needed.</td>
</tr>
<tr>
<td><strong>Project 2 – Task 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Schedule a minimum of 25 educational trips.</td>
<td>48%</td>
<td>Additional reservations will occur throughout the school year.</td>
</tr>
<tr>
<td>b. Produce 2010/2011 edition of FE curriculum.</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>d. Purchase program materials, supplies, and visual aids.</td>
<td>20%</td>
<td>Visual aid and equipment needs have been identified for the 2010/2011 school year.</td>
</tr>
<tr>
<td>h. Produce written assessment report of participants in Forever Earth curricula.</td>
<td>100%</td>
<td>Completed.</td>
</tr>
<tr>
<td><strong>Project 2 – Task 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Schedule 3 scientific research trips on Forever Earth.</td>
<td>0%</td>
<td>These will be scheduled throughout the year.</td>
</tr>
<tr>
<td>c. Purchase needed research supplies and equipment.</td>
<td>0%</td>
<td>Purchases will be made dependent on needs identified by researchers.</td>
</tr>
<tr>
<td><strong>Project 2 – Task 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Schedule Forever Earth as a mobile visitor center twice per month during June, July, and August.</td>
<td>67%</td>
<td>NPS conducted four trips this summer.</td>
</tr>
<tr>
<td><strong>Project 2 – Task 5</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Schedule a minimum of 6 trips for agency purposes.</td>
<td>0%</td>
<td>These will be scheduled throughout the year.</td>
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<tr>
<td><strong>Project 2 – Task 6</strong></td>
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<tr>
<td>e. Provide bus transportation funds for 35 student field trips.</td>
<td>34%</td>
<td>Additional trips will be funded throughout the year.</td>
</tr>
<tr>
<td><strong>OUTDOOR WORLD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project 3 – Task 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Develop a schedule of events for the year.</td>
<td>50%</td>
<td>Draft schedule will be modified as more events are scheduled by partners.</td>
</tr>
<tr>
<td>b. Conduct a minimum of 25 events.</td>
<td>104%</td>
<td>Current partners indicate they will schedule more events throughout the year.</td>
</tr>
<tr>
<td>c. Produce written assessment report of participants in Outdoor World program.</td>
<td>100%</td>
<td>Completed.</td>
</tr>
<tr>
<td>d. Update and maintain website.</td>
<td>0%</td>
<td>New partners will be highlighted on website. This is expected to occur throughout the year.</td>
</tr>
<tr>
<td><strong>Project 3 – Task 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Identify a new recreational event to be developed.</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>b. Develop curriculum for the selected recreational event.</td>
<td>0%</td>
<td>This is expected to occur during the second and third quarters.</td>
</tr>
<tr>
<td>c. Field test new event curriculum.</td>
<td>0%</td>
<td>This is expected to occur during the third quarter.</td>
</tr>
<tr>
<td><strong>Project 3 – Task 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Identify potential new partners.</td>
<td>100%</td>
<td>Completed.</td>
</tr>
<tr>
<td>b. Contact potential partners.</td>
<td>100%</td>
<td>Completed.</td>
</tr>
<tr>
<td>c. Formulate a minimum of one new</td>
<td>300%</td>
<td>Three new partnerships were established in the</td>
</tr>
<tr>
<td>partnership.</td>
<td>first quarter.</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>d. Highlight partner contributions on website.</td>
<td>0%</td>
<td>New partners will be highlighted on website. This is expected to occur during the second quarter.</td>
</tr>
<tr>
<td>a. Determine delivery system to increase scope of program.</td>
<td>0%</td>
<td>Will work with the project planner to analyze potential delivery systems.</td>
</tr>
</tbody>
</table>

Submitted by:

Margaret N. Rees
Principal Investigator

August 31, 2010
Date
Families in Nature
Event Participant List
July 17, 2010
<table>
<thead>
<tr>
<th>NAME</th>
<th>Age</th>
<th>Language</th>
<th>Phone</th>
<th>Address</th>
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<tr>
<td>Sue Barbosa</td>
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<td>E</td>
<td>432-5690</td>
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<tr>
<td>Ana Smith</td>
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<td>E</td>
<td></td>
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<tr>
<td>Zenia Smith</td>
<td></td>
<td>E</td>
<td></td>
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<tr>
<td>Laura Reyes</td>
<td>Adult</td>
<td>S/E</td>
<td>502-1009</td>
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<tr>
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<td>Fiorela Reyes</td>
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<td>Bruno Reyes</td>
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<tr>
<td>Gabriela Regaldo</td>
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<td>506-6166</td>
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<td>Sasha Regaldo</td>
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<td>Samantha Regalado</td>
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<td>Sharon Baron</td>
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<td>E</td>
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<td>Prince Baron</td>
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<td>Jimal Baron</td>
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<tr>
<td>Maria Hernandez</td>
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<td>S</td>
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<td>824-0946</td>
<td>Answer</td>
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<td>Carmen Godinez</td>
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<td>Luis Arredondo</td>
<td>Adult</td>
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<td>Yazareth Arredondo</td>
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<td>Jaqueline Arredondo</td>
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<td>Derik Ortiz</td>
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<td>Donaji Ortiz</td>
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<tr>
<td>Argelia Cervantes-Montes</td>
<td>Adult</td>
<td>E/S</td>
<td>406-2018</td>
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<td>Jimmy Beltran Cervantes</td>
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<td>Francisco Larco</td>
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<td>Paula Larco</td>
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<td>Mercedes Camacho</td>
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<td>813-5401</td>
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<tr>
<td>Pedro Tadeo</td>
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<td>Elizabeth Tadeo</td>
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<td>S/E</td>
<td>504-6920</td>
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<tr>
<td>Keith Baker</td>
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<tr>
<td>Isabel Baker</td>
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<tr>
<td>Bridgit Gallegos</td>
<td>Adult</td>
<td>S/E</td>
<td></td>
<td></td>
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<tr>
<td>Inez Gallegos</td>
<td>Adult</td>
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<tr>
<td>Vivian Martinez</td>
<td>Adult</td>
<td>S/E</td>
<td>321-5112</td>
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<tr>
<td>Liza Martinez</td>
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<td>Blanca Larco</td>
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<td>Luis Larco</td>
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<td>Diana Larco</td>
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<tr>
<td>Patricia Vazquez</td>
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<td>E/S</td>
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<td>Heny Suarez</td>
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<td>Belen Galindo</td>
<td>5</td>
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</tbody>
</table>
Families in Nature Planning
**Agenda for FIN @ the Spring Mountains on Saturday, July 17, 2010**

**Purpose:** to teach participants about the life cycle of ants (and just how awesome they are!), allow participants to engage in art and other fun activities related to awesome ants; learn about why fires happen on public lands, all while actively participating in fun learning and recreation.

**Staff in attendance:** Allison Brody, Irma Wynants, Laura Brinson, Jesica Orpineda (NPS), and Ricky Covey. Possible staff attendees are Allyson Butler, and Willisha Daniels. Guest: Janelle from PLI to take pictures.

65 FIN people already signed up, Irma will call them to confirm
8:30AM Meet at Winchester Cultural Center

**9:00AM Depart from Winchester**
On the bus:
1) Laura will give a talk on the bus about fires on public lands:
   - Forest fire prevention
   - Natural fires-balance and regeneration in nature
2) FIN staff will talk about the agenda for the day and the Ant Safari activities

10:00AM Arrive at Mary Jane Falls
10:00AM-11:00AM Ant Rotations
   1) ant information-different types, etc.
   2) art- make an ant
   3) ant competition: catch the flag

12:00AM-1:30PM Potluck Lunch at Cathedral Rock, Campsite B
1:30-3:00PM Mini Cathedral Rock Hike? Scavenger Hunt Hike? Or team competitions? (Ricky Covey)
3:00PM-Departure, possibly sooner (play it by ear).
On the bus:
   - Announce next FIN event to Gold Butte on September 25.

Plan B in case Spring Mountain access is closed:
1) Carp Rodeo in Pahranagat
   - We need fishing license for 12 years and up: Amanda will call Ivy Santi from USFWS to see if we can get a group fishing license.
   - First 100 kids receive a tackle box
2) Cancel trip all together

**Who is bringing what?**
*Amanda, Laura, Jesica (NPS/SNAP):*

Microphone
4 colored flags
Prizes for competition?
2 Coolers with ice: 1 for drinks, 1 for food
1 box of Capri Suns
Waters (how many?)
Mustard/ketchup/Relish
**Allison Brody (PLI):**
5 gallon water cooler
Water Jug
Cups
Charcoal/matches
Liability Waiver
**Allison Butler (PLI):**
Evaluations

**Additional things that were discussed in the meeting:**
Amanda-
Has extra dollars for future FIN event materials (binoculars, FIN t-shirts or hats for safety, condiments, coolers, GPS units, mobile microphones/speakers, etc.)
  o Think about materials/tools we want buy and send ideas to Amanda

Allison Butler-
Talked about putting together a video of FIN from the perspective of the participants. Look for funding for this project? How do we share with our participants? Facebook, FIN website are some ways to share this video. In our strategic planning—we have a component of creating media we can use to share with the public, our organizations, our bosses.

**Next FIN on September 25 @ {Friends of} Gold Butte!!!**
  o Amanda will take care of reserving the bus for this day
  o Seed ball making and collection for restoration activity
  o Allison Brody & Willisha will put together information for the flier by Friday, July 9 to give to Amanda, who will give it William Whitcomb with all necessary logos.
Families in Nature Event Evaluation Summary
Families in Nature assessment responses - July 17, 2010

1. What was your favorite part of today’s Families in Nature trip?
   - (Collecting) the ants
   - Looking for ants and helping scientists
   - The hike and activities!
   - Collecting ant species for environmental studies good educational experience for the family kids and adults
   - Decir algo en especial, es muy difícil pero la parte dunde nos explican precioso monte, la naturaleza, los cuidadas, el respeto y debemos tener diria tu esa.
   - Found ants
   - My favorite part in today’s trip was when we were capturing the ants because we were scientists today.
   - The part when we (sucked) the ants in the bottle
   - Hike to see where the fire was
   - Collecting the ants
   - La parte favorite de la escursion fue caminar y esplorcer la naturaleza
   - Todo, la convivencia y el aprendizaje

2. Tell us about one thing you learned today.
   - That there are ants that are big.
   - Wild fires
   - A lot about ants
   - Me and Smokey the bear are the same age! They ants help to plant the forest.
   - Hacerca de los fuegos, me impresiono hoy que estube dintyo de los ruings de uno la importencia de respecter las normas.
   - Team work
   - The one thing that I learned today was how to prevent fires and how to capture the ants.
   - I learned about a very rare (animal)
   - How ants live
   - Ants are not all bad. They do serve a purpose other than “bugging” us
   - A coyer las hormigas
   - A cuidar el bosque

3. How will you use what you learned today in your day-to-day life?
   - That ants live in forest houses
   - Being careful with fires at all times
   - Like to protect and teach other people
   - Insects help the environment
   - El respect que se le tiene que dor ale naturaleza.
   - Collaboration respectful of the nature
   - I will use what I learned today in my life by preventing fires and teaching my classmates how to capture ants.
   - Ants because they help with trees
   - Teach others
   - Cuerdo venza con mi familia a harcer un dia de campo
   - Will not be so quick to kill ants that are out in the yard, if they come in the house well that’s a different story
4. Will you come back to Spring Mountains NRA with your family? If yes, what will you do with your family when you come again?
   - Explore and show the ants
   - Yes, picnic and games
   - Play all the games we played here today
   - Yes, when we come back to hike to the Mary Jane falls and deer creek for picnic. Plan to attend the Mt. Charleston jazz fest August 13, 14, 15
   - Pero pur supuesto disruptar de la belleza deel paisaye
   - Yes, see the natural recreation park and enjoy a camping day or picnic day
   - Honestly, I do not know if my family will come because we don’t have a truck and we don’t know when we’re going to be there again.
   - Yes, help the (environment)
   - Hike and Picnic
   - Probably not this year due to transportation issues
   - Si, con mis vicitas siemep tratarme de trae los es muy bonito

5. How can forest fires be beneficial? How can forest fires be harmful?
   - The fire can (burn) your skin
   - New life cycle; They affect animals and plants
   - Good is because the plants grow back and harmful is it is (destroying) lots of trees.
   - Remove dead trees and brush, so new growth can happen. Fire can kill animals and healthy trees and plants can help cause floods.
   - The ants take the seeds and move to forest again.
   - The way forest fires can be helpful is it cleans the area. It can be harmful by hurting the animals area.
   - It helps to (clean) the environment and it doesn’t help because it hurts people
   - Clean our environment – burn and kill the animals
   - Clear out the thick underbrush that inhibits the growth of other plants/trees. Kills animals, birds, insects, destroys forests, that effects the eco system, landslides
   - Reforesta – pero tambien duna mucho porque se expande demasiado

6. What can we do to improve future Families in Nature trips?
   - Do not cause fires
   - Need more water. Seem to run out of water too soon.
   - Longer trips and more activities.
   - I think everything is great.
   - Me parece todo bren a exepaion de la contaud de (?). Necesitamos mos liquids.
   - Keep doing this kind of trip
   - We can use more water to improve future Families in Nature trips.
   - More water
   - Leave on time, The ones that don’t show or call put them on a standby list for the next time.
   - Have them more often
   - Todo esta muy bien espero que dure por mucho tiempo y que le pidan a la gente que reporte a tiempo cuando no va a is para que pueda interanse mas guete
Hispanic Outreach Research Proposal -- OMB
## Expedited Approval for NPS-Sponsored Public Surveys

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<tr>
<td>1. **Project Title</td>
<td>Submission Date:**</td>
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<tr>
<td>2. <strong>Abstract:</strong></td>
<td>Over the past 20 years, the Hispanic population in Clark County, NV has increased remarkably and currently represents approximately 27% of the county’s 1.9 million total inhabitants. The seven million acres of public lands within and surrounding Clark County provide abundant recreational opportunities for these residents. Although many in the local Hispanic community visit federal sites, the federal land management agencies may not be presenting the most welcoming atmosphere. For example, most media materials are only available in English, and few staff members have the skills or ability to communicate with this audience in Spanish. This project will contribute to an outreach plan to the Clark County Hispanic community. A better understanding of this audience will allow the National Park Service and other federal land management agencies to create culturally appropriate messages that reinforce acceptable behaviors, while educating visitors and potential visitors about undesirable behaviors, such as littering.</td>
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<td>3. <strong>Principal Investigator Contact Information</strong></td>
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Project Information

5. Park(s) For Which Research is to be Conducted:


6. Survey Dates: 11/01/2010 (mm/dd/yyyy) to 02/01/2011 (mm/dd/yyyy)

7. Type of Information Collection Instrument (Check ALL that Apply)

- Mail-Back Questionnaire
- On-Site Questionnaire
- Face-to-Face Interview
- Telephone Survey
- Focus Groups
- Other (explain)

8. Survey Justification: (Use as much space as needed; if necessary include additional explanation on a separate page.)

Social science research in support of park planning and management is mandated in the NPS Management Policies 2006 (Section 8.11.1, “Social Science Studies”). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning, development, operations, management, education, and interpretive activities.

Over the past 20 years, the Hispanic population in Clark County, NV has steadily increased. According to the U.S. Census Bureau American Community Survey (2006-2008), 27.7% of Clark County residents were of Hispanic or Latino ethnicity and approximately one of every five residents (21.6%) identified culturally as Mexican. Seven million acres of public lands within and surrounding Clark County provide abundant recreational opportunities for these residents. These areas include Lake Mead National Recreation Area (NPS), Red Rock Canyon National Conservation Area (BLM), the Desert National Wildlife Refuge (FWS), and the Spring Mountains National Recreation Area (USFS). Although many in the local Hispanic community visit these areas, the federal land managing agencies may not be presenting the most welcoming atmosphere. For example, most media materials are only available in English, and few staff members have the skills or ability to communicate with this audience in Spanish. This project will contribute to an outreach plan to the Clark County Hispanic community. A better understanding of this audience is needed. This understanding will allow the NPS and other land management agencies to create culturally appropriate messages that reinforce acceptable behaviors, while educating visitors and potential visitors about littering and other undesirable behaviors.

To achieve a multi-agency outreach program, two information collections are proposed: 1) a telephone survey of Hispanic residents...
that will distinguish public land users from non-users and gather basic information about their characteristics; and 2) post-survey focus groups that will provide richer insights into the attitudes of Hispanic residents and their use and non-use of public lands. The specific goals of this research are:

- To identify specific agency practices that will create valuable visitor experiences for the Clark County Hispanic community;
- To determine how federal agencies may meet the needs and expectations of the Hispanic community;
- To understand the barriers that prevent some Clark County Hispanic residents from visiting public lands;
- To understand why other members of the Hispanic community do visit public lands, as well as their current use patterns and preferences;
- To identify ways to effectively communicate to the Hispanic community, and to determine the key messages and methods of communication that will reach Hispanic residents about active engagement with public lands for recreation, learning and discovery, and protection;
- To identify and characterize specific audience segments within the Hispanic community that are using public lands;
- To gain a better understanding of Hispanic residents’ awareness and perception of rules and regulations for public lands.

The study will be introduced through meetings with key leaders of the Hispanic community in Clark County to inform them of the survey, focus groups, and overall intent of the outreach effort. The research will begin with the Hispanic telephone survey, followed by focus groups. The purpose of conducting post-survey focus groups is further probe subject matters covered in the survey. Based on this research, the next step will be to develop an outreach program aimed specifically at Hispanic residents in Clark County. This outreach program will describe specific actions the agencies will take to create positive visitor experiences. The intended outcomes of the outreach effort are: 1) Hispanic residents will have a greater understanding of the natural and cultural history of southern Nevada public lands; 2) they will develop a sense of place with respect to these areas; and 3) they will develop the skills and motivation to behave in ways that do not negatively impact the land and its values. Ethnic diversity in recreational leisure activities have steadily increased over the past few decades (Chavez, 2000). Reasons and information regarding leisure have been well documented in the extant literature among the majority (White) population (Argyle, 2001; Chavez, 2000); however less is known about the use of recreational facilities among minorities, particularly Hispanics. The information investigated to this point demonstrates a cultural difference in recreational activities. For example, Hispanics, as compared to Caucasian groups, tend to congregate in larger groups in outdoor settings (Chavez, 2000), and minority groups have noted constraints to visitation of recreational facilities as both communicative, i.e. language issues, signage problems, materials not available in native language; and discriminative, i.e.
With the Hispanic population estimated at 27% in Nevada, research on recreational land use would be incomplete without a specific investigation with regards to Hispanics. Thus, research is needed to probe the propensity and reasons behind use and non-use of federal lands for this population. Survey research and focus groups have been a valid and effective way in which to investigate recreational land usage (Roberts, 2007; Chavez, 2000; Tierney, Dahl, and Chavez, 1998). Surveys utilizing this methodology are not only an efficient way to determine thoughts, opinions, and perceptions of a particular group, but also a useful way to improve the internal mechanisms of the organization (Chavez, 2002). For example, using an adaptive management style will increase general knowledge of what patrons need, expect, and want in addition to shortcomings of the facility. Surveys and focus groups can extract this information and apply knowledge to improve recreational areas and associated perceptions, an area that has yet to be investigated in the Hispanic population of Clark County.

9. **Survey Methodology**: (Use as much space as needed; if necessary include additional explanation on a separate page.)

   (a) **Respondent universe**:
   
   The research design calls for two distinct stages of data collection. The first stage is a survey of Clark County Hispanic residents. The telephone survey will be followed by four focus groups. Two focus groups will include only Hispanic public lands users while the remaining two focus groups will include only Hispanic non-public lands users. This multi-method approach will facilitate the development of a public lands user profile based on data gathered during the Hispanic household telephone survey, permitting extrapolation to the respondent universe and exploration of more specific outreach program elements during the four focus groups. The respondent universe for the telephone survey is all Hispanic adults 18 years of age or older residing in Clark County, Nevada. The population of interest for the focus groups is adult Hispanic public land users and non-public land users, as identified by variables included in the attached telephone survey instrument. The Hispanic public land users and non-public land users focus groups may be further segmented into one English-speaking and non-English speaking group, depending on the language preference of participants. The Hispanic household survey and subsequent focus groups will be conducted by Strategic Solutions, a market research firm based in Las Vegas.

   (b) **Sampling plan/procedures**:

   (b)(i) **Telephone Survey** -  
   According to the National Center for Health Statistics, as recently as 2008, approximately one of every five U.S. households were identified as “cell phone only”, meaning they had no access to land line telephone service. Of those who did have a land line, approximately 30% had unlisted telephone numbers. Cell phone only respondents are more likely to be younger, unmarried, and Hispanic (Tucker, Brick, and...
The increasing incidence of cell phone households has led to innovative sample frame design techniques among survey researchers, including disproportionate stratified Random Digit Dial (RDD) and cell phone sample hybrid designs. This approach respects the unique sample frame design challenges inherent to any statistically valid, scientific telephone survey, and is particularly well suited for surveys of Hispanic residents. In fact, this method has grown among many major polling outfits, including The Pew Research Center for the People & The Press, which included cell phone samples in all of its 2008 election polls.

Given that Clark County is approximately 27% Hispanic and that research suggests a high rate of cell phone only usage among this population, a standard RDD sample design, surname listed-assisted or not, will be both ineffective in terms of coverage and inefficient with respect to field time and resource allocation when qualifying for survey screening and eligibility.

The survey sample frame design for this survey will be compiled by stratifying RDD and cell phone sample exchanges according to incidence of Hispanic households. The sampling of frame records will be implemented through an Optimal Sample Allocation technique (Lopez, 2010) that disproportionately dials telephone exchanges high in Hispanic household incidence while under sampling exchanges low in Hispanic household incidence. Survey data will be post-weighted to Hispanic Latino population representation in Clark County. The sample will also be screened to ensure random selection within households by requesting participation from the adult, 18 years of age or older, within the household whose birthday follows next in the calendar year. Additionally, the sample will be screened to ensure that the selected survey participant self-identifies as being of Hispanic or ethnicity. The size of the sample frame will be 8,533. This sample frame size qualifies for desired sample size (N=384), the Survey Sampling International (SSI) average Working Phone Rate (WPR) for Random B samples, and standardized estimates for contact and cooperation rates. The dual frame will consist of one cell phone sample frame unit for every three RDD sample frame units. The sample frame design and data collection approach applied to this survey has been implemented to great effect by organizations such as the Pew Hispanic Center at the Pew Research Center for the People and The Press.

(b)(ii) Focus Groups-
The focus group participants will be recruited at the conclusion of the telephone survey. This will include participants who meet the criteria for being a public lands user or who are identified as public lands non-users, and who agree to be re-contacted for focus group participation. The telephone script concludes with a question that asks participants to opt-in to a list of potential focus group participants. The research team proposes to conduct two post-survey focus groups with each of the aforementioned study groups. Telephone survey data will be applied to the focus group selection protocol only insomuch as the respondent must have visited a public lands site within the past two years, as described in the telephone survey instrument. Each focus group will be composed of ten to twelve participants. A $50 cash incentive will be offered during recruitment to encourage participation in the focus
groups. Each focus group session will last no more than 1.25 hours.

(c) Instrument Administration:

(c)(i) Telephone Survey -

The telephone survey will be administered as a Computer Assisted Telephone Interview (CATI). CATI systems are capable of displaying pre-programmed instruments in conjunction with any fixed-route logic sequences for purposes of live, real time survey administration. CATI systems are capable of cataloguing call dispositions in order to monitor contact, cooperation, and response rates and to establish other quality control parameters. Additionally, later model CATI systems also allow for multilingual survey administration.

The telephone survey instrument will be administered by a team of professional interviewers. Interviewers will undergo a rigorous training program that will include lessons in cultural sensitivity, proper interviewing techniques, conversion strategies, and best practices in terms of avoiding extraneous statements and questions that may prompt or lead respondents or otherwise bias interviews. The interviewer team will be composed exclusively of bilingual (English and Spanish) interviewers in consideration of the study universe.

(c)(i) Focus groups -

The extant literature suggests that when focus group participants share a trait or a characteristic, such as gender, ethnicity, or a certain specific experience, and are relatively homogeneous with regard to that trait, a more free-flowing, relaxed conversation can take place and a rigidly structured focus group interview may not be necessary (Morgan, 1997). The focus group instrument will be administered by a professionally trained moderator in a semi-structured discussion format. The focus group moderator will speak fluent Spanish and be professionally trained in qualitative research methods and cultural sensitivity. Focus group participants will be asked to respond to study topics, visual renderings, and other materials as presented by the moderator. The moderator will use a pre-compiled discussion guide, but may ask additional probing or follow-up questions based on initial responses. The focus groups will be audio-recorded for purposes of subsequent review and analysis, as described in the attached focus group discussion guides.

(d) Expected Response Rate/Confidence Intervals: Telephone Survey

The AAPOR standard matrix for measuring survey response and cooperation rates will be used for this survey. The AAPOR format is widely recognized as the industry standard for monitoring and reporting survey response rates. The research team proposes to complete 384 interviews with a confidence level of 95% and a confidence interval of +/-5.0%. There has been a trend of diminishing response rates for telephone surveys using exclusively Random-Digit-Dial (RDD) sampling methods (Galesic, Tourangeau, and Couper, 2006). For example, regarding telephone surveys conducted by the Washington Post, response rates ranged from 29% to 37% for nonsensitive populations. Concurrently, research has demonstrated that response rates for Hispanics are lower than White and Black demographics (Triplett and
Abhi-Habib, 2005). Triplett and Abhi-Habib posit that the results were due to the linguistic isolation of these populations. Specifically, an inability to speak English on the part of the participant, or Spanish on the part of the interviewer would prevent the completion of the survey. The current study proposes the use of bilingual persons as the interviewers to mitigate the potential language barriers. The sample frame design recommended for this survey acknowledges the trend of diminishing response rates and takes rigorous steps to improve coverage of the study population through implementation of the dual frame strategy. This disproportionate sampling of both RDD and cell phone exchanges based on Hispanic household incidence is the optimum approach for increasing coverage, while at the same time providing greater opportunities for researchers to monitor response rates in the field. During the 2008 pre-election polls conducted by The Pew Research Center for the People and the Press, dual frame designs yielded average contact rates in the upper 70th percentile, cooperation rates in the 30th percentile, and overall response rates in the 20th percentile. Taking previous research on telephone survey methodology and cultural variables into account, we expect to achieve similar results, while improving on the response rates through refusal conversion techniques and up to seven contacts for eligible, non-irate refusal records.

(e) Strategies for Dealing with Potential Non-Response Bias: Telephone Survey

Survey response rates and non-response bias are heavily influenced by the sample frame design, instrument length and clarity, interviewing techniques, contact attempts, and field duration. For this survey, contacted soft refusals that cannot be converted to completed interviews will be routed through the survey instrument to answer key questions in order to assess non-response bias. These questions include those identifying public lands users and non-users, and demographic and socioeconomic variables. Interviewers will propose scheduling callbacks for a more convenient date and time (within the survey period) for respondents who initially refuse participation because of time constraints. The survey administration dates and times will also be scheduled in order to maximize the response rates. Interviews will be conducted during six-hour weekday evening shifts and eight-hour weekend shifts to maximize contacts and completions. For this survey, non-response bias analysis will be conducted on multiple levels. A post hoc analysis of non-contact records and completed interviews will be conducted based on sample frame characteristics. Additionally, a random subsample of non-respondents who answered the key survey variables will be compared to completed interviews based on demographic and socioeconomic characteristics in order to identify and assess any significant differences among respondents and non-respondents. Further analysis will be conducted using third party data sources, such as Current Population Survey (CPS) data from the U.S. Census Bureau to determine any differences between the sample of completed interviews and the study universe.

(f) Description of Any Pre-Testing and Peer Review of Methods/Instrument:

(f)(i) Telephone Survey -
The telephone survey instrument will be internally and externally pre-tested prior to the commencement of data collection activities. The research team, along with representatives of PLI, will conduct peer reviews and proxy interviews to test the logic sequence of survey variables, clarity of content verbiage, and average interview length. The survey instrument for the telephone survey and the focus group discussion guides will be translated to Spanish for administration purposes. The translated versions of the survey will also be pre-tested internally by bilingual research associates and research team members.

Once the internal review of the survey instrument has been conducted, a pilot test of the survey instrument will be performed with a randomly selected subgroup of the study sample frame. No more than nine total pretests will be administered in Spanish and no more than nine pretests will be administered in English. The survey instrument will again be tested for seamless transition between variables, the appropriateness of logic routings, clarity of content verbiage, and average interview length. Appropriate statistical tests may be performed following the pilot study in order examine the reliability of any scale measurements or other recommended adjustments to the survey instrument.

(f)(i) Focus Groups-

The research team will conduct a preliminary review of the discussion guide by pre-testing the content elements, study areas, and language clarity. This preliminary review will be conducted with a group of approximately four identified Hispanic public lands users and four Hispanic non-public lands users. This engagement will allow the research team to determine the clarity and flow of the discussion guide, gather an understanding of topics or study areas that should be condensed or expanded in order to garner substantive qualitative data, and otherwise prepare for any unintended circumstances that may arise during the planning, coordination, and facilitation of the four focus groups to follow and that will conclude the primary data collection activities.

Bibliography


| Total Number of Initial Contacts | 1200 | Expected Respondents: 384 |

| Estimated Time to Complete Initial Contact | Survey | Focus Groups | 137 |
| Instrument (mins.): | 50 | |

| Total Burden Hours: 12 | 18 |

10. Reporting Plan: Survey results will be entered into a database for use by SNAP agencies. The database will aid in the creation of a step-by-step resource guide, containing information and recommendations for Hispanic Outreach. This resource guide will be distributed to SNAP Interagency teams, SNAP Conservation Education staff, and partner organizations. Principal Investigator Allison Brody will provide a narrative report describing survey analysis and results to the SNAP Board and agency personnel. A copy of the survey report will be archived with the NPS Social Science Program for inclusion in the Social Science Studies Collection.
CELL PHONE INTRODUCTION:

Q1a: Hello, my name is [    ] and I’m calling on behalf of the University of Nevada, Las Vegas and we’re conducting a survey sponsored by the Southern Nevada Agency Partnership. I’m not calling to sell you anything. Have I reached you on your cell phone?

a. YES  [Proceed to Q1b]  
b. NO/REFUSES TO SAY  [Proceed to Q1c]  
c. NEEDS SPANISH INTERVIEW  [Schedule Bilingual callback]

Q1b: I’m not allowed to interview you if you’re driving or doing anything that could put your safety at risk. Is it safe to talk to you now or should I call back another time?

a. SAFE  [Proceed to Q1c]  
b. NOT SAFE  [Thank and end call - code for Callback]

INTRODUCTION:

Q1c: Your phone number was randomly selected for a local survey. The purpose of the survey is to help the National Park Service better serve our local Hispanic and Latino residents. We want to hear what people from this area think about the outdoor recreation areas and public lands in Clark County. This survey will not take longer than 15 minutes to complete. May I continue with the survey?

SUPPLEMENTAL INTRO, IF RESPONDENT HESITATES OR ASKS ABOUT WHO IS CONDUCTING THE SURVEY:

The U.S. Office of Management and Budget has approved this research under the Paperwork Reduction Act. All of your answers are completely voluntary. Responses to this study will be used only for statistical purposes. The reports prepared will summarize findings across the sample and will not associate responses with a specific individual. We will not provide information that identifies you to anyone outside the study team, except as required by law.
**IF NEEDED:**
It’s really important that we get opinions from local Hispanic and Latino residents. The results of this survey will help improve services in our community. As I mentioned, we want to hear what people from this area think about the outdoor recreation areas and public lands in Clark County. No action may be taken against you for refusing to supply the information requested. No personal data will be recorded that will identify you. Your phone number will be separated from your answers, so the final data will be anonymous. Participation in this survey is expected to average about 15 minutes per household. U.S. Code 16-1a-7 authorizes collection of this information. The OMB approval number is [not yet assigned] with an expiration date of [not yet assigned]. You may direct comments on any aspect of this survey toll-free to The University of Nevada, Las Vegas [phone number not yet assigned].

May I proceed?

a. Yes [Go to QSa]
b. No - IRATE REFUSAL [Thank and terminate]
c. No - SOFT REFUSAL [Go QId]
d. Callback Request [Schedule callback]
e. Self Report Non-Hispanic/Latino [Thank and terminate]

QId: May I call you back at a more convenient time, it’s important that we get responses from a variety of households, whether you visit local public lands and parks or not.

a. I’ll take the survey [Go to QSa]
b. No - IRATE REFUSAL [Thank and terminate]
c. No - SOFT REFUSAL [Go to section 4 - cap 40]
d. Okay callback [Schedule callback]
e. Self Report Non-Hispanic/Latino [Thank and terminate]

QSa: Thank you for agreeing to participate in the survey. Before we continue I need to make sure you qualify to participate. Are you at least 18 years old?

a. Yes [Go to QSc]
b. No [Go to QSb]
c. Don’t Know/Not sure [Go to QSb]
d. No Answer/Refused [Go to QSb]

QSb: I'm sorry, but I'm not allowed to interview anyone under 18. Is there someone at this phone number who is 18 or older that I can speak to now, or could I call back some other time?
QSc: I would also like to know whether you consider yourself to be Hispanic or Latino?

a. Yes                         [Go to Q_1]
b. No                           [Go to QSd]
c. Don’t Know/Not sure         [Go to QSd]
d. No Answer/Refused           [Go to QSd]

QSd: I’m sorry, this survey has been designed specifically to gather input from local Hispanic and Latino residents, is there someone at this phone number who is Hispanic or Latino that I can speak to now, or could I call back some other time?

a. Yes – Another Person       [Go to Q_1]
b. Yes – Callback             [Schedule callback]
c. Don’t Know/Not sure       [Thank and terminate]
d. Refused/No answer          [Thank and terminate]

Q_1: Generally speaking, have you visited any local parks, recreation, or natural areas during the past two years? (Topic Area 3 - Individual Activities and Uses of Parks)

a. Yes
b. No
c. Don’t know/Not sure
d. Refused/No answer

Q_2: To the best of your recollection, when was the last time you visited any local parks, recreation, or natural areas? (Topic Area 3 - Individual Activities and Uses of Parks)

a. Within the past week
b. Within the past week to two weeks
c. Within the past two weeks to a month
d. Within the past month to six months
e. Within the past six months to a year
f. Within the past year to two years
g. Don’t know/Not sure
h. Refused/No answer
Q_3: Generally speaking, how often would you say you visit local parks, recreation, or natural areas? *(Topic Area 3 – Individual Activities and Uses of Parks)*

a. Two or more times a week  
b. Once a week  
c. Two to four times a month  
d. Once a month  
e. Less than once a month  
f. Don’t know/Not Sure  
g. Refused/No answer

Q_4: Generally speaking, which local park, recreation, or natural area do you visit most often? [TYPE RESPONSE AND REPEAT TO RESPONDENT TO VERIFY ENTRY] *(Topic Area 3 – Individual Activities and Uses of Parks)*

[OPEN ENDED]

Q_5: Now I’d like to ask you specifically about federally managed public lands in Clark County. To the best of your recollection, have you EVER visited any national park, historic site, monument, or other unit managed by a federal agency in Clark County? You don’t have to know the name, I’m just interested in whether you THINK you’ve visited any of these places *(Topic Area 3 – Individual Activities and Uses of Parks)*

a. Yes  
b. No  
c. Don’t know/Not sure  
d. Refused/No answer

I’m going to read you a series of names and for each one of them I’d like you to tell me whether you have visited them in the past 2 years: *(Q_6 – Q_9 are Topic Area 3 – Individual Activities and Uses of Parks)*

Q_6: Have you visited Lake Mead during the past two years?

a. Yes  
b. No  
c. Don’t know/Not sure  
d. Refused/No answer

Q_7: Have you visited Red Rock Canyon or Sloan Canyon during the past two years?

a. Yes  
b. No  
c. Don’t know/Not sure
d. Refused/No answer

Q_8: Have you visited the Spring Mountains, which would include Mt. Charleston and Kyle or Lee Canyons, during the past two years?

   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_9: How about the Sheep Mountains? This would include Corn Creek, Ash Meadows, or Pahranaghat locations within the Desert National Wildlife Refuge. Have you visited the Sheep Mountains during the past two years?

   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

[IF any of Q_6 through Q_9 = Yes, continue to Section 2. All others Skip to Q_36]

----PUBLIC LANDS USERS----

Q_10: And which of the following federally managed public lands in Clark County did you visit most often? (Topic Area 3 - Individual Activities and Uses of Parks)

   a. Lake Mead
   b. Red Rock Canyon or Sloan Canyon
   c. The Spring Mountains, which includes Mt. Charleston and Kyle or Lee Canyons
   d. The Sheep Mountains, which includes the Corn Creek Desert, Ash Meadows, or Pahranaghat National Wildlife Refuge
   e. Other (specify)
   f. Don’t know/Not sure
   g. Refused/No answer

Q_11: To the best of your recollection, when was the last time you visited [RESPONSE TO Q_10]? (Topic Area 3 - Individual Activities and Uses of Parks)

   a. Within the past week
   b. Within the past week to two weeks
   c. Within the past two weeks to a month
   d. Within the past month to six months
   e. Within the past six months to a year
f. Within the past year to two years
g. Don’t know/Not sure
h. Refused/No answer

Q_12: And how often do you typically visit [RESPONSE TO Q_10]?  
(Topic Area 3 – Individual Activities and Uses of Parks)

    a. Two or more times a week
    b. Once a week
    c. Two to four times a month
    d. Once a month
    e. Less than once a month
    f. Don’t know/Not Sure
    g. Refused/No answer

Q_13. What would you say were the two or three main reasons for 
visiting [RESPONSE TO Q_10]?  (Topic Area 2 – Trip/Visit 
Characteristics)

[RANDOMIZE OPTIONS]

    a. It was an opportunity to interact with nature
    b. It’s a healthy way to spend leisure time
    c. To feel relaxed and peaceful
    d. It’s an opportunity to spend time with family/friends
    e. It was an opportunity to take part in physical 
        activities outdoors
    f. The location is close to my home
    g. I did not have to pay to visit the site
    h. Other (specify)
    i. Don’t know/Not sure
    j. Refused/No answer

Q_14. When you last visited [Response to Q_10], did you…  (Topic 
Area 3 – Individual Activities and Uses of Parks)

    a. Visit alone
    b. Visit with friends/family
    c. Visit with a social group (church, sports team, etc.)
    d. Don’t know/Not sure
    e. Refused/No answer

In thinking about the time you’ve spent at federally managed 
public lands in Clark County during the past two years, have you 
ever engaged in the following activities?  (Q_15-28 are Topic Area 
3 – Individual Activities and Uses of Parks)

[RANDOMIZE SERIES]
Q_15: Driving for pleasure (scenic driving)
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_16: Viewing/photographing wildlife
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_17: Viewing/photographing scenery, plants, flowers, etc.
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_18: Visiting a nature center, natural trail, or visitor center
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_19: Picnicking or outdoor celebrations
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_20: Riding a dirt bike or All Terrain Vehicle (ATV)
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_21: Hiking, walking, or running
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer
Q_22: Skiing, snowboarding, sledding or other snow play
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_23: Swimming, boating, water skiing, jet skiing, canoeing, kayaking or other water play
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_24: Bicycling (road or mountain)
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_25: Fishing
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_26: Rock Climbing
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_27: Bird watching
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_28: Backpacking
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer
Q_29: Horseback riding
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_30: Camping
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_31: Hunting
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_32: Field trip or other educational activity
   a. Yes
   b. No
   c. Don’t know/Not sure
   d. Refused/No answer

Q_33: If you had to pick one, on which day of the week would you most likely consider visiting federally managed public lands in Clark County? (Topic Area 2 - Trip/Visit Characteristics)
   a. Monday
   b. Tuesday
   c. Wednesday
   d. Thursday
   e. Friday
   f. Saturday
   g. Sunday
   h. Don’t know/Not sure
   i. Refused/No answer

Q_34. Which of the following best describes who you think should be responsible for keeping federally managed public lands in Clark County clean and in good condition? (Topic Area 7 - Individual Opinions on Park Management)
   a. Nobody
   b. Only employees of federally managed public lands
   c. Only visitors to federally managed public lands
d. Employees and visitors of federally managed public lands  
e. Don’t know/Not sure  
f. Refused/No answer

Q_35. What do you think is the most important environmental issue facing our federally managed public lands in Clark County?  
(Topic Area 7 - Individual Opinions on Park Management)

a. Littering on the sites  
b. Vandalism of property on sites  
c. Availability of water  
d. Protection of plant and animals  
e. Pollution  
f. Other (specify)  
g. Don’t know/Not sure  
h. Refused/No answer

[ALL ANSWERS SKIP TO Q_61]

---NON PUBLIC LANDS USERS---

Q_36. Which of the following most accurately describes why you haven’t visited any federally managed public lands in Clark County during the past two years? Public lands refer to governmental owned land, often used for recreational activities.  
(Topic Area 3 - Individual Activities and Uses of Park Resources)

[Randomize Options]

a. I’m not interested  
b. I’d rather spend time in other ways  
c. I don’t have time  
d. I don’t know anything about the sites  
e. I don’t have transportation  
f. I don’t have the necessary equipment  
g. It’s too far from where I live  
h. The rangers/employees don’t speak my language  
i. It’s too expensive  
j. I’d rather visit community parks  
k. I don’t feel comfortable  
l. Other (specify)  
g. Don’t know/Not sure  
h. Refused/No Answer

Generally speaking, please tell me how familiar you are with each of the following sites. By that I mean, how familiar or
unfamiliar are you with their location, operating hours, and amenities for each of the following: (Q_41-Q_44 are Topic Area 3 - Individual Activities and Uses of Park Resources)

Q_37: Lake Mead, would you say you are…?
   a. Very familiar
   b. familiar
   c. unfamiliar
   d. Very unfamiliar
   e. Don’t know/Not sure
   f. Refused/No answer

Q_38: And what about Red Rock Canyon or Sloan Canyon, would you say you are…?
   a. Very familiar
   b. familiar
   c. unfamiliar
   d. Very unfamiliar
   e. Don’t know/Not sure
   f. Refused/No answer

Q_39: And what about the Spring Mountains, which includes Mt. Charleston and Kyle and Lee Canyons would you say you are…?
   a. Very familiar
   b. familiar
   c. unfamiliar
   d. Very unfamiliar
   e. Don’t know/Not sure
   f. Refused/No answer

Q_40: What about the Sheep Mountains? This would include Corn Creek, Ash Meadows, or Pahranaghat locations within the Desert National Wildlife Refuge. Would you say you are…
   a. Very familiar
   b. familiar
   c. unfamiliar
   d. Very unfamiliar
   e. Don’t know/Not sure
   f. Refused/No answer

Please tell me how often, if at all, you participate in each of the following activities: (Q_41-Q_60 are Topic Area 3 - Individual Activities and Uses of Park Resources)
[RANDOMIZE SERIES]

Q_41: Driving for pleasure (scenic driving)
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_42: Viewing/photographing wildlife
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_43: Viewing/photographing scenery, plants, flowers, etc.
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_44: Visiting a nature center, natural trail, or visitor center
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_45: Picnicking or outdoor celebrations
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_46: Riding a dirt bike or All Terrain Vehicle (ATV)
Q_47: Hiking, walking, or running

a. Very often  
b. Sometimes  
c. Rarely  
d. Never  
e. Don’t know/Not sure  
f. Refused/No answer

Q_48: Skiing, snowboarding, sledding or other snow play

a. Very often  
b. Sometimes  
c. Rarely  
d. Never  
e. Don’t know/Not sure  
f. Refused/No answer

Q_49: Swimming, boating, water skiing, jet skiing, canoeing, kayaking or other water play:

a. Very often  
b. Sometimes  
c. Rarely  
d. Never  
e. Don’t know/Not sure  
f. Refused/No answer

Q_50: Bicycling (road or mountain)

a. Very often  
b. Sometimes  
c. Rarely  
d. Never  
e. Don’t know/Not sure  
f. Refused/No answer

Q_51: Fishing

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer

Q_52: Rock Climbing

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer

Q_53: Bird watching

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer

Q_54: Backpacking

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer

Q_55: Horseback riding

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer

Q_56: Camping

a. Very often
b. Sometimes
c. Rarely
d. Never
e. Don’t know/Not sure
f. Refused/No answer
Q_57: Hunting
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

Q_58: Field trip or other educational activity
   a. Very often
   b. Sometimes
   c. Rarely
   d. Never
   e. Don’t know/Not sure
   f. Refused/No answer

59. If you knew that you could participate in certain types of activities on federally managed public lands in Clark County without paying fees, would you be more likely to consider visiting them or would it make no difference to you? (Topic Area 2 – Trip/Visit Characteristics)
   a. More likely to consider visiting
   b. Makes no difference
   c. Don’t know/Not sure
   d. Refused/No answer

Q_60. Which of the following best describes who you think should be responsible for keeping federally managed public lands in Clark County clean and in good condition? (Topic Area 7 – Individual Opinions on Park Management)
   a. Nobody
   b. Only employees of federally managed public lands
   c. Only visitors to federally managed public lands
   d. Employees and visitors of federally managed public lands
   e. Don’t know/Not sure
   f. Refused/No answer

---ALL SURVEY RESPONDENTS---

Q_61. Please tell me, what is your FIRST, most often used source for news and information about local community events and recreation activities? (Topic Area 1 Individual Characteristics)

[RANDOMIZE OPTIONS]
   a. Pamphlets
b. Posters
c. Informational fairs
d. Radio news
e. Radio ads
f. Television news
g. Television ads
h. Computer/Internet
i. Mobile Phone/Personal Data Assistant (PDA)
j. Social networking sites like Facebook, Myspace, or Twitter
k. Word of mouth (family, friends, co-workers)
l. Other (specify)
m. Don’t Know/Not sure
n. Refused/No Answer

Q_62. Please tell me, what is your SECOND most often used source for news and information about local community events and recreation activities?  (Topic Area 1 Individual Characteristics)

[RANDOMIZE OPTIONS]

a. Pamphlets
b. Posters
c. Informational fairs
d. Radio news
e. Radio ads
f. Television news
g. Television ads
h. Computer/Internet
i. Mobile Phone/Personal Data Assistant (PDA)
j. Social networking sites like Facebook, Myspace, or Twitter
k. Word of mouth (family, friends, co-workers)
l. Other (specify)
m. Don’t Know/Not sure
n. Refused/No Answer

Q_63. Do you have regular access to a computer with internet service?  (Topic Area 1 Individual Characteristics)

a. Yes
b. No
c. Don’t know/Not sure
d. Refused/No answer

Q_64. In what language do you prefer to get your information?  (Topic Area 1 Individual Characteristics)

a. English
b. Spanish
c. Either English or Spanish
d. Don’t know/Not sure
e. Refused/No answer

Q_65. How long have you lived in Clark County? (Topic Area 1 Individual Characteristics)

a. Less than one year
b. One to three years
c. Four to six years
d. Seven to ten years
e. Eleven to twenty years
f. More than twenty years
g. Don’t know/Not sure
h. Refused/No answer

Q_66. How long have you lived in the United States? (Topic Area 1 Individual Characteristics)

a. Less than one year
b. One to three years
c. Four to six years
d. Seven to ten years
e. Eleven to twenty years
f. More than twenty years
g. Don’t know/Not sure
h. Refused/No answer

Q_67. What is your marital status? (Topic Area 1 Individual Characteristics)

a. Single
b. Married
c. Living with a life partner
d. Divorced
e. Separated
f. Widowed
g. Don’t know/Not sure
h. Refused/No answer

Q_68. What is the highest level of education that you’ve completed? (Topic Area 1 Individual Characteristics)

a. Up to 8th grade
b. 9th to 11th grade
c. High school graduate or GED certificate
d. Some college, no degree
e. Degree from technical school or community college
f. University degree - 4 year
g. Some graduate school, no advanced degree
h. Graduate degree or higher
i. Don’t know/Not sure
j. Refused/No answer

Q_69. How many children under the age of 18 currently live in your home? (record entry and repeat response for confirmation? (Topic Area 1 Individual Characteristics)

a. OPEN-ENDED
b. Refused/No answer

c. OPEN-ENDED
d. Refused/No answer

Q_70. In what year were you born (record last two digits and repeat response for confirmation? (Topic Area 1 Individual Characteristics)

c. OPEN-ENDED
d. Refused/No answer

Q_71. What is your zip code? Enter and repeat response for confirmation. (Topic Area 1 Individual Characteristics)

a. OPEN-ENDED
b. Refused/No answer

Q_72: Which one of the following income groups best describes your total income in 2009, before taxes? (Topic Area 1 Individual Characteristics)

a. Less than 10,000 dollars
b. 10,000 to 25,000 dollars
c. 25,000 to 50,000 dollars
d. 50,000 to 75,000 dollars
e. 75,000 to 100,000 dollars
f. 100,000 to 150,000 dollars
g. Over 150,000 dollars
h. Don’t know/ Not sure
i. Refused/No answer

Q_73. Gender observation:

If needed: I’m required to ask, are you male or female? (Topic Area 1 Individual Characteristics)
a. Male
b. Female

Q_74 - CLOSING:

THANK YOU SO MUCH FOR YOUR TIME, I REALLY APPRECIATE YOUR PARTICIPATION.

The Public Lands Institute at the University of Nevada, Las Vegas will also be conducting focus groups with local Hispanic and Latino residents on behalf of the National Park Service. The purpose of the focus groups will be to better understand preferences regarding the use of public lands. Would you be willing to participate in a focus group? Your participation will be anonymous although the session will be audio recorded for evaluation purposes. It will only take an hour and a half of your time and you will be compensated with $50 cash for your time. Your thoughts and opinions would be greatly appreciated.

If Yes: Great, thank you. May I please have your name and phone number or email, whichever you prefer, to contact you about the focus groups?

Name:___________________________
Phone:__________________________
Email:___________________________

If No: Thank you and your time has been greatly appreciated.
FOCUS GROUP DISCUSSION GUIDE – PUBLIC LANDS USERS

TRANSLATION FROM SPANISH

Introduction:

Good (Morning/Afternoon), my name is [MODERATOR], I work for the Public Lands Institute at the University of Nevada, Las Vegas. We’re conducting research sponsored by the National Park Service. The purpose of the research is to better understand the behaviors and preferences of local Hispanic and Latino residents regarding visitation to federally managed public lands here in Clark County.

This discussion group has been approved by the Office of Management and Budget in compliance with the Paperwork Reduction Act. The Office of Management and Budget control number and expiration date are available at your request.

Before we begin I want to tell you that the information that we obtain here is anonymous and will not be used for any sales purpose. I also want to inform you that we are audio recording this session, but the tape will not be shared with anyone and will be used only to create a summary of our discussion.

This focus group will take a maximum of one and a half hours to complete. During this time we invite you to get something to eat or drink and if you need to use the restroom, they are located at ________________.

I am going to ask to please take your turn when speaking, that you do not all speak at the same time, and that you do not interrupt when others are talking during the session. If you have something to share while someone else is speaking, raise your hand and I will make time for you to share when that person finishes. I want you to know that there are no right or wrong answers. What we want to know are your opinions and feelings.

You do not have to use your full names during this focus group. We can refer to one another by using our first names only. Let’s begin the session with and ice breaker and around the table and introducing ourselves. As we go around the table, please:

- Introduce yourselves by stating your first name
- Share with us how long you have lived in Las Vegas
- Your favorite outdoor activity or outdoor place to visit

Let’s go around the table one by one, starting to my right. ..
1. **Public Lands Perceptions/USE (ALL TOPIC AREA 3 – Individual Activities & Uses of Park Resources): 15 Minutes of Discussion Time**

- What type of recreational activities do you engage in?
  
  o Do you engage in any outdoor activities on a regular basis?

- How many people understand what public land means? Can you describe it for me? Remember, there is no such thing as a right or wrong answer. I’m interested only in your impressions and perceptions.

- As you know, we conducted a survey on this topic and at the time you participated in the survey, you indicated that you had visited at least one federally managed public lands site in Clark County during the past two years...Please share with me, whether you have you ever visited Lake Mead, Red Rock Canyon, Spring Mountains (Mount Charleston), Sheep Mountains (Corn Creek)?

2. **Public Land Use Patterns (ALL TOPIC AREA 3 – Individual Activities & Uses of Park Resources): 15 Minutes of Discussion Time**

- Why did you visit this particular site and what was the purpose of your trip? If you’ve visited more than one, please share answers for all that you’ve visited...
  
  o Who did you visit the public land with? Is it typically your idea to visit or does someone else usually make the decision?

  o Describe for me a typical visit to the public land site you visit most often. What do you do?

*Prompt for other activities including: Driving for pleasure (scenic driving), Viewing/photographing wildlife, birds, etc., Viewing/photographing scenery, plants, flowers, etc., Visiting a nature center, nature trail, or visitor center, Picnicking, Riding a dirt bike or ATV, Hiking, walking, trail running, Skiing, Swimming, Boating (boats, personal watercraft, etc.), Bicycling (road, mountain), Fishing, Rock climbing, Backpacking, Horseback riding, Camping.*

- What are the 3 main reasons, in order of priority, that you visit these public lands?

*Provide a paper, give time to think, and then discuss.*

*Prompt: Opportunity to interact with nature, opportunity to carry out physical activities outdoors, relaxing and peaceful, healthy way to spend leisure time, opportunity to spent time with family and friends.*
What other amenities would you like offered at public lands that you may not have seen or experienced during your visits?

3. **Attitudes Towards Public Lands (ALL TOPIC AREA 7 – Individual Opinions on Park Management): 15 Minutes of Discussion Time**

- How do you feel when you visit a public land? (safe, welcome, etc.) Why?
  - PPROMPT FOR PERCEPTION OF LAW ENFORCEMENT – Do you see rangers/park officers when you visit the land? How do you recognize the ranger? How does that make you feel? (Comfortable/uncomfortable, welcomed/unwelcomed, safe/unsafe, etc.)

- Do you think signage (bathrooms, trash cans, no fires, etc.) at the public lands site(s) you’ve visited is easy or difficult to understand? Why?

- How would you describe the conditions at the public lands you visited? Do you think the public lands are clean? Why?
  - Who do you think is responsible for keeping the public lands clean and in good condition?

- When you perform outdoor activities, what do you do to take care of the environment?
  - If you could change anything, what would you change about the public lands sites?

4. **Current Campaign and Attitudes toward Littering (ALL TOPIC AREA 6 – Individual Perceptions of their Park Experiences): 15 Minutes of Discussion Time**

- When I say “properly disposing of trash”, what does that mean to you?
- What do you think are the advantages of properly disposing of trash?
  - What do you think are the consequences of not properly disposing of trash?

- When I say “throwing the trash in its place”, what does that mean to you? What other words would you use to describe this action?

**Close**

Well, now I want to thank each and every one of you for your time and for helping us with this focus group. All your comments have been very useful. Thank you very much.

*Additional Information Provided upon Request.
OMB Approval number: *(Not yet assigned)*
Expiration Date: (Not yet assigned)
Person Collecting and Analyzing Information:

Allison Brody
Public Lands Institute
University of Nevada, Las Vegas
4505 Maryland Pkwy
Box 452040
Las Vegas, NV  89154
Allison.brody@unlv.edu
702-895-5097

16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. No personal data will be recorded. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.
You may direct comments on the number of minutes required to respond, or on any other aspect of this focus group to:

Deborah Reardon
Lake Mead National Recreation Area
4701 North Torrey Pines Drive
Las Vegas, NV  89130
Deborah_Reardon@nps.gov
702-839-5579
## Mobile Exhibit Touchpoint Matrix (draft)
<table>
<thead>
<tr>
<th>#</th>
<th>Site</th>
<th>Agency</th>
<th>Recreation</th>
<th>Natural/Cultural Stories that can be told</th>
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<tbody>
<tr>
<td>1</td>
<td>Calville Bay</td>
<td>NPS</td>
<td>Boating/Water sports</td>
<td>Bald Eagles</td>
</tr>
<tr>
<td>2</td>
<td>Boulder Beach</td>
<td>NPS</td>
<td>Swimming/water sports, camping</td>
<td>Connecting to nature: COBR</td>
</tr>
<tr>
<td>3</td>
<td>Logandale Trail</td>
<td>BLM</td>
<td>OHV</td>
<td>Geology, wildflowers</td>
</tr>
<tr>
<td>4</td>
<td>Narrows</td>
<td>NPS</td>
<td>Boating/water sports</td>
<td>Colorado River; nesting herons</td>
</tr>
<tr>
<td>5</td>
<td>Hoover Dam</td>
<td>BOR</td>
<td>Museum</td>
<td>Dam/historical</td>
</tr>
<tr>
<td>6</td>
<td>Las Vegas Wash</td>
<td>Multi</td>
<td>Hiking, birding</td>
<td>Urban river – reclaim water / wetlands</td>
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<tr>
<td>7</td>
<td>Anniversary narrows</td>
<td>NPS/BLM</td>
<td>Hiking (slot canyon)</td>
<td>Camel footprint; mines; Bearpoppies</td>
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<tr>
<td>8</td>
<td>Alan Bible Visitor</td>
<td>NPS</td>
<td>Museum, biking</td>
<td>Water drop evident in Lake Mead; invasive species</td>
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<tr>
<td>9</td>
<td>Cathedral Rock</td>
<td>USFS</td>
<td>Hiking, Picnicking</td>
<td>Palmer’s Chipmunk</td>
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<tr>
<td>10</td>
<td>Valley of Fire</td>
<td>State</td>
<td>Hiking, Picnicking</td>
<td>Petroglyphs, big horn sheep</td>
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<tr>
<td>11</td>
<td>Lee Meadows</td>
<td>USFS</td>
<td>Picnicking, snow play</td>
<td>Butterflies, largest Ponderosa in the state</td>
</tr>
<tr>
<td>12</td>
<td>Mt. Charleston peak</td>
<td>USFS</td>
<td>Hiking</td>
<td>Clokey Catchfly, nearly 12,000 feet elevation</td>
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<tr>
<td>13</td>
<td>Bristlecone Trail</td>
<td>USFS</td>
<td>Hiking, biking, snow shoe</td>
<td>Bristlecone pine</td>
</tr>
<tr>
<td>14</td>
<td>Robber’s Roost</td>
<td>USFS</td>
<td>Hiking</td>
<td>Legend, geology (desert view)</td>
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<td>15</td>
<td>Red Rock Canyon Loop/VC</td>
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<td>Museum, scenic drive, hiking</td>
<td>Geology, desert tortoise; fire (due to invasive species)</td>
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<td>16</td>
<td>Sloan Canyon</td>
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<td>Cottonwood Trails</td>
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<td>Mountain biking</td>
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<td>Wee Thump Wilderness</td>
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<td>21</td>
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Nevada Environmental Education & Interpretation Certification Program Roster, Summer 2010
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<th>Paid?</th>
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<tr>
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<tr>
<td>Ida Mia Castillo</td>
<td>US Fish &amp; Wildlife</td>
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<td>James Cribbs</td>
<td>Red Rock Canyon NCA</td>
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<td>Yes</td>
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<tr>
<td>Christina Dodough</td>
<td>Springs Preserve – volunteer</td>
<td>Yes</td>
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<tr>
<td>Jeffrey Goldstein</td>
<td>Ash Meadows NWR</td>
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<tr>
<td>Amber Heman</td>
<td>NV State Parks (Valley of Fire)</td>
<td>Yes</td>
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<td>Carol Howland</td>
<td>NV State Parks (Spring Mtn Ranch) - volunteer</td>
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<td>Mandy Keefer</td>
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<td>Alyson Mack</td>
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<tr>
<td>Denise Parsons</td>
<td>UNR Cooperative Extension</td>
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<tr>
<td>Tod Price</td>
<td>Volunteer</td>
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<tr>
<td>Sandra Salinas</td>
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<td>Chelise Simmons</td>
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<td>Frank Simpson</td>
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<tr>
<td>Amalia Sommer</td>
<td>UNLV Public Lands Institute</td>
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<td>Robert Spurlock</td>
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<td>Jody Walker</td>
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**Cancelled**

Ed Tuite – NPS Lake Mead
Standard Operating Procedures
2010/2011
Forever Earth Program
By: Daphne Sewing, Forever Earth and Discover Mojave Outdoor World Program Manager
and Jennell M. Miller, Ph.D., Public Lands Institute, with special thanks owed to Rick Kendall for sharing his
expertise related to program creation and the development of standard operating procedures for the Lake
Roosevelt Floating Classroom Program (Lake Roosevelt National Recreation Area, Coulee Dam, Washington).

Funded by the Southern Nevada Public Land Management Act
and delivered by the UNLV Public Lands Institute on behalf of the National Park Service

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SECTION I. BACKGROUND

Forever Earth is a floating water and environmental science laboratory and learning center at Lake Mead National Recreation Area. Lake Mead, a Colorado River reservoir, is the principal source of drinking water for more than one million residents in the Las Vegas urban area. Further involvement by our students, scientists, and the community in the research and monitoring of Lake Mead will help to expand our knowledge of this important resource and potentially lead to strategies to protect it.

Forever Earth was dedicated in October 2002 in formal ceremony. The Forever Earth Program, which includes the Forever Earth vessel (a 70-foot houseboat), was brought to life through a partnership of Forever Resorts; the National Park Service (NPS), Lake Mead National Recreation Area; University of Nevada, Las Vegas (UNLV), and the Outside Las Vegas Foundation. Additional community partners include other governmental organizations and the Clark County School District. The Forever Earth program, a Round 4 Conservation Initiative funded by the Southern Nevada Public Land Management Act, is being administered and delivered by UNLV on behalf of the National Park Service.

The mission of the project is to support and encourage scientific study and environmental monitoring at Lake Mead by school groups, researchers, and the public. The Forever Earth vessel also may be used for other educational events, special events, and as a command post for emergency operations. Forever Earth provides a platform for the enhancement of Lake Mead water science research and monitoring and education. The educational component of this project provides a first-hand learning experience in the sciences, particularly limnology and water quality and their associated fields and technologies, but also in a variety of other disciplines (e.g., biology, mathematics, physics, and cultural and social sciences).

This handbook provides information on the educational and operational capabilities of the vessel and guidance on various policies, regulations, procedures, and safety. This is a living document and, as such, is expected to be revised over time.
Mission

The Forever Earth Project is dedicated to:

- Encouraging and facilitating scientific study and environmental monitoring at Lake Mead, a valuable resource, by providing a mobile, well-equipped research platform;
- Providing standards-based, hands-on Forever Earth Floating Classroom experiences within the setting of a valuable natural resource;
- Educating the public about Lake Mead;
- Improving the environment through education and research, and setting an example of environmental stewardship;
- Ensuring the safety of its participants.

Vision

Forever Earth is a recognized, model floating laboratory for scientific research at Lake Mead and a dynamic place-based learning opportunity that links students to their natural surroundings through study of Lake Mead and inspires continued learning.

Broad Objectives

In broad terms, Forever Earth’s 2008-2011 objectives include targeted tasks in each of the following areas:

- Build effective partnerships with the academic and research communities and the public to support and maintain the collaborative development of the Forever Earth Project.
- Continue to implement a dynamic, standards-based Forever Earth Floating Classroom program that adopts Lake Mead for the context of learning relevant scientific (and other subject matter) applications that are based upon actual research conducted at Lake Mead and that inspire continued learning.
- Provide Forever Earth as a research platform for scientific studies and environmental monitoring on Lake Mead.
- Secure funds and generate financial support for enhanced operation during 2008 through 2011 and for continued operation beyond 2011.
- Conduct Forever Earth operations as an example of environmental stewardship.

Partners
Forever Resorts

Forever Resorts (a division of Forever Living, LLC) is headquartered in Scottsdale, Arizona and operates more than 55 recreational properties in national parks, recreation areas, national forests and other destinations worldwide. Forever Resorts is a leader in luxury houseboat vacation rentals. Each Forever Resort location is committed to the standards of their corporate environmental policy, which is to monitor and improve the performance of business operations and endeavor to conduct all activities in a manner that protects both human health and the environment.

John Schoppmann, senior vice president of resort operations, envisioned Forever Earth. Mr. Schoppmann recognized the opportunity to build public awareness about water quality issues at Lake Mead by providing hands-on science experiences. Mr. Schoppmann was instrumental in developing a similar project 10 years earlier at Lake Powell in Arizona and Utah in which a houseboat was used in anti-litter strategies. The vessel was built by Fun Country Marine Industries (a division of Forever Living, LLC), and its use is donated by Forever Living, LLC founder and president, Dr. Rex Maughan. Fun Country Marine Industries constructs all of the houseboats available for rent in Forever Resorts recreational properties and is the entity representing Forever Resorts within the Cooperative Agreement with the University of Nevada, Las Vegas (UNLV).

Some areas of responsibility for Forever Resorts outlined in the Cooperative Agreement, in effect through June 2011, include:

- Providing regular inspections and performing mechanical maintenance and repairs.
- Replacing engines and generators as needed.
- Stocking the vessel with consumable supplies.
- Providing a berth (slip) at Callville Bay Marina.

University of Nevada, Las Vegas

The University of Nevada, Las Vegas (UNLV) has supported the Forever Earth Project from its inception. In 2004, UNLV formally partnered with the Southern Nevada public land managers in multiple Great Basin Cooperative Ecosystem Study Unit (GBCESU) task agreements for the collaborative delivery of selected Conservation Initiatives funded by the Southern Nevada Public Land Management Act. Specifically, funds are obligated in the “Education in the Environment” Conservation Initiative (SNPLMA Round 4) to support Forever Earth Project management and implementation. Another component of the Conservation Initiative involves establishment in southern Nevada of a Wonderful Outdoor World (WOW) program. WOW is a program that fosters a belief that outdoor recreation and the environment play an important and positive role in American culture. Key to the success of the Forever Earth Project and WOW will be community involvement through volunteerism and donations.

UNLV is well suited to participate in this project by its past interest in Forever Earth, its expertise, and physical location to develop the products as specified within the GBCESU Agreement and SNPLMA Conservation Initiative. UNLV is a local research university composed of diverse academic departments, research centers and institutes. With thirteen colleges, over fifty-one departments and schools, and thirteen
institutes and centers, UNLV embraces a broad scope of interests and expertise that complement this particular type of project. UNLV also has the ability to establish an extensive local community connection critical to the success of the project. The university is ranked in the category of Doctoral/Research Universities-Intensive by the Carnegie Foundation for the Advancement of Teaching.

Some areas of responsibility for UNLV outlined in the Cooperative Agreement, in effect through June 2011, include:

- Maintaining possession and management of the vessel.
- Hiring and directing qualified boat captain(s) and deckhand(s).
- Maintaining and revising standard operating procedures and scheduling protocols for managing and operating Forever Earth.
- Managing educational and laboratory supplies and equipment.
- Providing hull insurance and protection and indemnity insurance.
- Providing post-trip cleaning service for the vessel.

**Outside Las Vegas Foundation**

The Outside Las Vegas Foundation (OLVF) is a primary non-profit partner of four federal land management agencies in southern Nevada. Its mission is to enhance the connection between people and their public lands in southern Nevada. OLVF was a founding stakeholder in the Forever Earth Project, and OLVF initially provided coordination and reservation services for the project, in addition to helping secure private and corporate donations and funding.

2008-2011 Role of the Outside Las Vegas Foundation

1. Build community participation and partnerships in support of the Forever Earth Project and Discover Mojave Outdoor World events
2. Work to secure private dollars and resources to help support Forever Earth
3. Prepare Forever Earth grants and funding initiatives
4. Celebrate successes

**National Park Service, Lake Mead National Recreation Area**

Lake Mead National Recreation Area (Lake Mead NRA), in addition to the recreational opportunities it provides, is one of southern Nevada’s “natural laboratories” in which we can study and learn about our desert environment. Lake Mead is the setting where Forever Earth educational experiences and data collection will take place and upon which studies are focused. The educational component of the Forever Earth Project (Forever Earth Floating Classroom) is based upon actual research conducted at the lake and evolving management issues.
In the building phase of Forever Earth, NPS staff provided input regarding the vessel’s design and the project’s principal purposes. Before UNLV’s involvement, the initial educational programs aboard Forever Earth were conducted by NPS staff.

2008-2011 Role of the National Park Service Lake Mead National Recreation Area:
1. Continue to provide environmental education and interpretive guidance for the Forever Earth Project and contribute to the development of educational programming components (Lake Mead NRA interpretive staff).
2. Provide guidance in selecting research topics appropriate for student research and facilitate connection to the research community for the Forever Earth Project (Lake Mead NRA scientific and research staff).
3. Provide staff for the development and implementation of the Forever Earth and Discover Mojave Outdoor World programs.
4. Identify connectivity and integration where necessary between this and other Conservation Initiatives.

<table>
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<tr>
<th><strong>Major Goals for the Next Three Years, Round 6</strong></th>
<th><strong>Year 1</strong> (6/07-5/08)</th>
<th><strong>Year 2</strong> (6/08-5/09)</th>
<th><strong>Year 3</strong> (6/09-5/10)</th>
<th><strong>Year 4</strong> (6/10-5/11)</th>
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<td>1. A three-year cooperative agreement signed and implemented for the use and operation of Forever Earth</td>
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<td>2. Revise Standard Operations Plan and Handbook as needed</td>
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<td>x</td>
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<td>3. Refine Forever Earth Floating Classroom curriculum; create new programs as identified by Curriculum Team</td>
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<td>4. Meet deliverables for Forever Earth program as defined by CESU Task Agreement</td>
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<td>5. Continue to implement marketing plan; revise as needed</td>
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<tr>
<td>6. Pursue additional funding</td>
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</table>
Section II: Forever Earth Vessel

The Forever Earth vessel is an aluminum, trihedral hull houseboat manufactured by Fun Country Marine Industries, Inc. with the following specifications:

Dimensions

- Length: 70 ft
- Beam: 16 ft
- Weight: 42,000 lbs

Fuel Capacity and Consumption

285 gallons; each engine burns approximately 9-10 gallons of fuel per hour. Fuel Consumption can vary due to wind, throttle usage, and weight distribution. The generator burns approximately 3-5 gallons per hour (©2004 Forever Resorts 70” Millennium Houseboat Operating Manual).

Passenger-carrying Capacity and Minimum Age Requirement

Maximum vessel capacity is 25 people. This number includes program facilitators provided by NPS or UNLV, program participants, and group leaders/chaperones. The boat crew is not counted within this number. No more than 12 people are allowed on the top deck at any one time.

Grade 4 students constitute the minimum age of passengers allowed on the vessel. These requirements have been set as outlined in the insurance policy effected by UNLV.

Power

- **Primary**: Two 20,000 watt generators with emissions control devices
- **Secondary**: Solar cells provide power to charge 12V batteries, then inverted to 120V to power refrigerators, laboratory equipment, audiovisual system, and lighting.

Speed

- Normal cruising: 8 miles per hour
- Maximum speed: 10 miles per hour

Propulsion

Two 200 horsepower Evinrude Ficht (2 cycle) outboard engines
Inside Spaces

Main Deck

combined meeting/galley/helm space, two restrooms – one of which is Americans with Disabilities Act (ADA) accessible

Lower Berths
laboratory (7’8” x 7’7”) and computer room (7’8” x 7’7”)

Slightly Elevated Berths
Two sleeping quarters (each with queen size bed)

DECK SPACES

Top Deck — 500 square feet (58’2 3/16” x 15’8 3/4”) with 24’ hard top sunroof

Bow Deck — 16’x 10’53”

Aft Deck — 9’11” x 16’0”

Legal Owner
Fun Country Marine Industries, Inc
9801 S. Grant RR #4
Muncie IN 47302

Registered Owner
Maughan Rex G. DBA Callville Bay Resort and Marina
Las Vegas NV 89124-9702

Registration: Certificate of Number Undocumented Motorboat*
NV 4732 KT (Clark County)
Hull Number: FCX00339C202
Use: Livery (Rent-Lease)
Year: 2002
Make: Funcountry

*“Undocumented motorboat” signifies a vessel, which does not have a marine document issued by the U.S. Coast Guard. [Bd. of Fish & Game Comm’rs, No. 19 part § 1, eff. 3-10-80]
Vessel Features

*General*
- air conditioning / heating
- ceiling fan
- conference table and chairs
- EMS first-aid storage
- personal flotation devices and storage
- bow ramps
- built-in ice chests on upper deck
- dive ladder
- double front gate
- flush front deck tie downs
- fiberglass hard top canopy (24ft) with rope lighting on upper deck
- four-point anchor system
- hose bibs
- Storage for SCUBA gear and tank
- solar panels
- stern cleats
- upper deck davit (hoist)

*Americans with Disabilities Act (ADA) Access*
Forever Earth is wheelchair accessible with assistance as follows:
- bath with seat in shower
- grab bars
- open lavatory and raised head (toilet)
- 31-inch door opening on lavatory
- deck level side gates on front deck with 30-inch clear opening
- front patio door with 31-inch clear opening and ramp

*Audiovisual / Communications / Navigational*
- audiovisual center (flat-screen television, VCR, DVD player, surround sound)
- compass
- depth sounder
- Global Positioning System (GPS)
- intercom system throughout
- dry erase board
- radar
- radios
Program Supply Room
- copy machine with scanning capability and wireless printing

Galley
- **Appliances**
  - full-size refrigerator / freezer with ice-maker and purified water dispenser
  - four-burner cook top range and oven
  - trash compactor
  - dishwasher
  - sink

- **Small Appliances**
  - blender
  - coffee maker
  - microwave
  - toaster

- **Service**
  - 12 cereal bowls, salad bowls, dinner plates, mugs, and water glasses
  - 12 forks, spoons, knives, sharp knives and teaspoons

- **Kitchenware and cooking**
  - can opener (manual)
  - cheese grater
  - colander
  - cutting board
  - griddle
  - assorted knives
  - ladle
  - pot holders
  - slotted spoons
  - spatulas
  - tongs
  - mixing bowls
  - bottle opener and corkscrew
  - 2 frying pans
  - sauce pans
  - large pot
  - casserole
  - measuring cups and measuring spoons
Laboratory
- eye wash station
- electrical outlets every three feet
- cabinet and drawer storage
- hazardous waste / sharps containers
- refrigerator / freezer
- stainless steel sink
- water deionization with reverse osmosis
- scientific equipment (see Scientific Equipment and Scientific Instrumentation, pages 14-15)

The Forever Earth Project is committed to improving the environment through education and research. As such, it is important that the Forever Earth floating laboratory and education vessel represent this dedication. Environmentally conscious features and components of the Forever Earth vessel include the following:

Solar Energy: Green Power Generation Technology
Harnessing solar energy through photovoltaic (solar) cells produces no air pollution, hazardous waste, or noise, and it requires no transportable fuels. Sunlight is free and abundant. On the Forever Earth vessel, photovoltaic cells provide energy to charge a bank of 12V (DC) batteries. An inverter converts the power to 120V (AC), clean electricity, which Forever Earth uses to run its refrigerators, laboratory equipment, audiovisual system, and lighting.

No gray water discharge
All houseboats have holding tanks for toilet waste (black water), but usually discharge waste from showers and sinks (gray water) overboard. The Forever Earth vessel, however, retains all effluents in the holding tank for pumping out at authorized marina locations.

Energy Efficient Items
Where possible, energy efficient products and equipment are used, including ceiling fans, a heat pump heating and cooling system, long life light bulbs, fluorescent lights, low voltage lights, low-flow shower heads.

Clean Burning Two-cycle Outboard Engines
The vessel has two 200 horsepower “Ficht Ram Injection” Evinrude engines that are state-of-the-art in two-cycle clean burning technology. These engines exceed the 2006 Federal emission standards for outboard engines.
**Emission Control Device (ECD)**

This device removes carbon monoxide (CO), maintaining CO at less than 35 PPM, from the exhaust emissions of the two Westerbeake 20KW generators and making them the safest on the market for use with recreational boats.

**Containment Boom**

Forever Earth includes 300 feet of a floating boom, which can be used anywhere on Lake Mead in the event of a fuel spill. The boom will contain liquids, while absorbent pads will remove petroleum products from the water.

**Trash Recycling Program**

All refuse items are sorted into labeled containers for recycling through Boulder City Disposal Company. A trash compactor is available on board to reduce the volume of bulky trash items.

**Recycled Components**

Many items used in the construction of this vessel are either recycled products or items that can be recycled. These include the aluminum hull, window glass, plastic chairs, carpet, and batteries.

**Green Participants**

Participating groups are encouraged to:

- Throw nothing but water overboard
- Not feed wildlife
- Take all recycling and garbage to the appropriate bins upon return to the dock
- Use only cleaning chemicals provided on board, all of which meet Green Seal Approval
- Use drapes as insulation from the sun
- Minimize water use by not leaving water running in sinks and showers and by taking quick showers

**ISO-14001 Status**

Forever Resorts is the first U.S. multi-site marina, hospitality, and lodging operator to be awarded ISO-14001 environmental certification for all domestic operations. The international standard for environmental management systems (EMS) is a formal set of policies and procedures defining how organizations manage potential impacts of its products or services on the environment the health and welfare of the people who use them.
Forever Resorts certification was presented by Lloyds Quality Registration Assurance (LQRA) one of a few companies nationwide authorized to audit and register companies for ISO 14001 and other quality standards. To maintain its ISO-14001-certified status, Forever Resorts operations, including that of the Forever Earth Project, must continue to conform to the standards set forth in ISO-14001.

Scientific Equipment and Instrumentation on Board

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Water Chemistry

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General Equipment

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- Impression slides 1 box
- Glass slides and cover slips
- Gloves 3 boxes
- Goggles 5
- Transect tape 1
Forever Earth Vessel Plans

FOREVER EARTH
Section III. Participation and Use Requirements
Requirements for use of the Forever Earth Vessel vary by group type, although some requirements and restrictions apply to all groups.

Requirements that Apply to All Uses

Intent Requirements
Proposed Forever Earth uses must align with at least one of the four principal purposes of the Forever Earth Project: (1) Education; (2) Scientific Studies/Research; (3) Water Quality Monitoring and (4) Command Post. Requests must be made by recognized educational, research, governmental, and non-profit civic organizations.

For scheduling purposes, high-priority uses of the Forever Earth vessel are:

- education
- scientific studies/research
- water quality monitoring

Lower priority uses will be considered on a case-by-case basis, and could include:

- trash localization and pickup
- emergency services provided by NPS Employees
- familiarization trips for groups invited by NPS, UNLV, OLVF, or Southern Nevada Agency Partnership
- uses deemed appropriate by UNLV, OLVF, and Forever Resorts on behalf of Fun Country Marine Industries.

Strictly recreational uses are not consistent with Forever Earth’s principal purposes. Furthermore, such uses would be in competition with Forever Resorts business activities and therefore are inappropriate. The Forever Earth scheduler reserves the right to reject any proposed uses that do not align with the principal purposes of the Forever Earth Project.

Group Size
The maximum group size is 25 passengers. This includes program participants and group leaders/chaperones. Forever Earth staff and boat crew are not counted within this number. Ratio of (adults accompanying the group) to children under the age of 16 should be at least 1:10. The scheduler works with organizations seeking use of Forever Earth to ensure total occupancy does not exceed 25 passengers and that there will be approximately one adult present for every 10 children on board.
Students in the 4th grade constitute the minimum age of passengers allowed on the vessel. These requirements have been set as outlined in the insurance policy effected by UNLV.

**Insurance Requirements**

Organizations that are not self-insured (e.g., home educator groups; private school groups; etc.) seeking use of Forever Earth are required to show evidence of active and adequate liability insurance. This is done in the form of a "certificate of insurance" issued by the organization’s insurance broker. Forever Earth Information: Insurance (see Appendix A) provides the group leader with the information it will need to supply to its broker.

The scheduler of Forever Earth will receive and maintain a copy of the certificate of insurance and endorsement from the user group.

**Specific Requirements for Student Groups**

**Forever Earth Floating Classroom Student Participation Expectations**

Before embarking on a Forever Earth Floating Classroom trip, authorization, liability, and behavioral agreements must be met:

1. In order to finalize a Forever Earth trip, the school principal or school district superintendent must sign the Reservation Application (Appendix B). By signing the Reservation Application, the participating group commits to following the Cleaning Policy (Appendix C), Cancellation Policy (Appendix D) and other policies deemed appropriate for the group's intended use of Forever Earth.

2. A General Liability Release (Appendix E) must be signed by a parent or guardian for each participating student.

Before embarking on a trip, student participants and their parents must agree to the following conditions:

1. The student will notify both the teacher and Forever Earth staff of any preexisting medical conditions or medications that are taken on this field trip.

2. All students will participate in cleanup of accidental spills/breakage as needed and in general boat cleanup at the end of the trip; student groups shall clean up using only the cleaning supplies provided.

3. Students will arrive dressed appropriately for the weather.

4. Horseplay or other disruptive behavior will not be tolerated.

5. Swimming from the vessel is not allowed.

6. Glass containers are prohibited (except scientific equipment such as test tubes already aboard Forever Earth).

7. The use of tobacco products, alcohol, or drugs is strictly prohibited.

8. Instructions or directions given by Forever Earth crew and staff must be followed.
9. If any of the above guidelines are abused or broken, it may result in the immediate cancellation of the trip and immediate return to the marina for the entire group.

These regulations are enacted for the safety and enjoyment of all participants, teachers and Forever Earth Project staff members. Agreement upon these conditions by the school, the students, the teachers, Forever Resorts, Inc., UNLV, and NPS is a condition of participation.

**Forever Earth Floating Classroom Program Goals, Objectives, and Essential Academic Learning Requirements**

The Forever Earth Floating Classroom is a program that aligns with each of the goals of science education in Nevada (see below). All graduates of Nevada schools should:

- Demonstrate the processes of science by posing questions and investigating phenomena through language, methods, and instruments of science;
- Acquire scientific knowledge by applying concepts, theories, principles, and laws from life, physical, and Earth/space science;
- Demonstrate ways of thinking and acting inherent in the practice of science and exhibit an awareness of the historical and cultural contribution to the enterprise of science; and
- Demonstrate an ability to solve problems and make personal decisions about issues affecting the individual, society, and the environment

(Nevada Science Content Standards for Grades 2, 3, 5, 8 and 12 as adopted August 20
1998/ September 1 2001 edition)

The primary objective in developing curriculum for the Forever Earth program is to create interdisciplinary and interactive programs for students within the learning environment of Forever Earth. The curriculum is designed to give students the rare opportunity to study different facets of water in the desert – such as its characteristics and quality, the species that rely on it, its ability to change a landscape and much more. This educational experience complements traditional classroom studies with engaging, participatory, on-site activities and support lessons based upon a solid framework for inquiry and discovery. On-site activities and the supporting lessons align with Nevada State Science Standards and Clark County School District Curriculum Essentials Framework and Science Objectives. Additionally, the organizational visions and missions of key stakeholder groups were reflected in the program curriculum.

**Curriculum supplied by participating group**

Participating groups that wish to use their own curriculum are asked to submit a description of their proposed program that includes an itinerary with specific destinations in advance of their use of Forever Earth. This submission is necessary for the Forever Earth Project staff to determine whether the proposed use is appropriate and to provide the boat pilot with the destinations for approval. The proposed itinerary will be checked for feasibility. If the proposed itinerary is not feasible, the boat captain and scheduler will make suggestions to adjust the itinerary while meeting as many of the participating group’s proposed objectives as
possible. Groups supplying their own curriculum may need additional time scheduled for bringing aboard and setting up their equipment.

**Specific Requirements for Professional Research Groups**

**Insurance**

Unless self-insured, each group is required to show evidence of active and adequate liability insurance. This is done in the form of a “certificate of insurance” issued by the organization's insurance broker. Forever Earth Information: Insurance (see Appendix A) provides the group leader with the information it will need to supply to its broker.

The scheduler of Forever Earth will receive and maintain a copy of the certificate of insurance and endorsement from the user group.

**Itinerary**

Participating group must submit a brief description of their proposed project including destinations. Arrangements will need to be made for communication between the boat captain and group so that the captain can plan the itinerary and make any special arrangements.

**Use Agreement**

By signing the Reservation Application (Appendix B), the participating group agrees to the Cleaning Policy, Cancellation Policy, and other policies deemed appropriate for the group’s intended use of Forever Earth.

**Permits**

Participating groups planning research activities aboard Forever Earth are responsible for determining which permits are necessary and for obtaining such permits for work to be conducted. Forever Earth scheduler informs the participant of this requirement and ensures that permits have been obtained. Below is general information regarding United States Department of the Interior, National Park Service research and collection permits:

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**Policy and General Requirements**

The National Park Service (NPS) welcomes interest in considering national parks for research sites. The NPS is responsible for protecting in perpetuity and regulating use of our National Park areas including recreation areas. Preserving park resources unimpaired and providing appropriate visitor uses of parks require a full understanding of park natural resource components, their interrelationships and processes, and visitor interests that can be obtained only by the long term accumulation and analysis of information produced by science. The NPS has a research mandate to provide management with that
understanding, using the highest quality science and information. Superintendents increasingly recognize that timely and reliable scientific information is essential for sound decisions and interpretive programming. NPS welcomes proposals for scientific studies designed to increase understanding of the human and ecological processes and resources in parks and proposals that seek to use the unique values of parks to develop scientific understanding for public benefit.

When is a permit required?
A Scientific Research and Collecting Permit is required for most scientific activities pertaining to natural resources or social science studies in National Park System areas that involve fieldwork, specimen collection, and/or have the potential to disturb resources or visitors. When permits are required for scientific activities pertaining solely to cultural resources, including archeology, ethnography, history, cultural museum objects, cultural landscapes, and historic and prehistoric structures, other permit procedures apply. The park's Research and Collecting Permit Office or Headquarters can provide copies of NPS research-related permit applications and information regarding other permits. Federally funded collection of information from the public, such as when formal surveys are used, may require approval from the Office of Management and Budget.

When to apply?
Professional Research Groups apply at least 90 days in advance of the planned start date of field activities. Projects requiring access to restricted locations or proposing activities with sensitive resources, such as endangered species or cultural sites, usually require extensive review and can require 90 days or longer for a permitting decision. Simple applications can often be approved more quickly.

How and where to apply?
An individual may obtain application materials via the Internet (find “Research Permit and Reporting System” at http://science.nature.nps.gov/research or through www.nps.gov). Questions and/or permit applications should be directed to:
Michael Boyles
Environmental Compliance Specialist
Lake Mead National Recreation Area
601 Nevada Way
Boulder City, NV 89005
702-293-8978
Michael_J_Boyles@nps.gov

Laboratory Health and Safety Requirements
Research groups planning to use hazardous materials (non-radioactive) are required to present current certifications of Laboratory Environmental Health and Safety Instruction awarded by their institution for each individual that will be utilizing hazardous materials. Copies of the certificates must be given to the scheduler during the scheduling process. The scheduler will provide the Forever Earth captain with a list of individuals that have successfully demonstrated evidence of training. On the day of the trip, individuals will present appropriate forms of identification (e.g., driver's license) to the captain, who will match names on the list with IDs.

The Forever Earth Project does not provide hazardous waste removal or storage services aboard Forever Earth nor within marina facilities. Participating research groups are required to properly manage their chemicals and sharps while on board, this includes providing their own chemical storage containers and sharps containers. Participating research groups are responsible for the immediate removal and transportation of all chemicals and sharps brought aboard, in compliance with U.S. Department of Transportation (DOT) regulations (DOT 49 CFR 173.6), to their home base laboratories for sorting and appropriate disposal.

A clearly marked laboratory refrigerator/freezer is provided in the laboratory room for the storage of scientific materials over the duration of a trip; this unit must not be used to store any item intended for human consumption. A galley refrigerator/freezer is provided on the main deck for the storage of food and beverage intended for human consumption over the duration of a trip; this unit must not be used to store any scientific materials.

Located in the laboratory is a portable, gravity-fed eyewash station. Participating research groups that require use of this equipment are responsible for familiarizing themselves with the use of the eyewash station and ensuring that the eyewash is filled and ready to use, prior to leaving the dock. There are two showers on the Forever Earth vessel, one in each of the two restrooms located on the main deck.

Participating groups are responsible for thorough cleaning of the Forever Earth vessel in complete compliance with Forever Resorts cleaning policies (Appendix C). Groups are reminded to bear in mind that Forever Earth is a multipurpose vessel, and as such it is made available for use to non-laboratory trained individuals including children. All traces of hazardous chemicals and sharps used must be removed upon completion of the trip.

Forever Earth is not equipped for the use of radioactive materials; use of such materials is not permitted aboard the Forever Earth vessel.

Forever Earth is not equipped with a chemical fume hood; chemicals/solutions requiring the use of a hood are not permitted aboard the Forever Earth vessel at this time.
Liquids other than pure water and lake water are not to be disposed of overboard or down vessel sink drains. Again, all chemicals and solutions must be removed from the vessel, by the participating research group, upon completion of the trip.

**Specific Requirements for All Other Groups**

**Insurance**

Unless self-insured, each group is required to show evidence of active and adequate liability insurance. This is done in the form of a “certificate of insurance” issued by the organization’s insurance broker. Forever Earth Information: Insurance (see Appendix A) provides the group leader with the information it will need to supply to its broker. The scheduler of Forever Earth will receive and maintain a copy of the certificate of insurance and endorsement from the user group.

**Itinerary**

Participating group must submit a description of their proposed project including destinations. Scheduler determines whether proposed use aligns with Forever Earth Project’s principal purposes and accepts or rejects as appropriate. Arrangements will need to be made for communication between the boat captain and group to ensure that the captain has ample time to plan for the itinerary and make any special arrangements.

**Use Agreement**

By signing the Reservation Application (Appendix B), the participating group agrees to the Cleaning Policy, Cancellation Policy and other policies deemed appropriate for the group's intended use of Forever Earth.

**Requirements for Diving Operations**

*Only researchers affiliated with NPS or UNLV may conduct diving operations from Forever Earth. NPS scientific diving that requires use of SCUBA will meet the standards of and comply with the Lake Mead NRA Dive Safety Plan. For UNLV researchers, compliance with the standards of the Lake Mead NRA Dive Safety Plan is recommended but not required. UNLV divers should familiarize themselves with the Lake Mead NRA Dive Safety Plan because it contains important emergency contact information.*

A copy of the Lake Mead NRA Dive Safety Plan is kept onboard Forever Earth. It is the responsibility of the Forever Earth Project Manager to annually update emergency contact numbers within the Dive Safety Plan. For Lake Mead NRA Dive Safety Plan updates and questions, contact James Koza, Navigational Aides Specialist, Lake Mead National Recreation Area.

The dive master/supervisor is responsible for diving operations and is responsible to the Forever Earth boat captain for vessel operation. The captain and deckhand will not have any responsibilities associated with diving operations. The boat captain may ask to see all divers’ certifications. The dive master should give a copy of the dive plan to the captain prior to trip.
Diving Regulations:

1. A person shall display a diver’s flags when diving or swimming below the water’s surface with the aid of a breathing device. The diver’s flags must be:
   a. At least 12 inches in height by 12 inches in width with a red background and a white diagonal stripe that is one-fifth the width of the flag;
   b. Attached to the Forever Earth vessel;
   c. Attached to a float or buoy which is visible to approaching vessels and which, between sunset and sunrise, has a light attached; and
   d. Prominently displayed within 100 feet of the location of the diver or swimmer.

2. A person shall not display a diver’s flag on the waters of this state unless he is diving or swimming below the water’s surface with the aid of a breathing device, in the vicinity of the diver’s flag.

3. Except in the case of emergency, a person shall not operate a vessel other than the diver’s support vessel within 100 feet of a diver’s flag.

4. Except in the case of emergency, a person who operates a vessel at a distance of more than 100 feet but less than 200 feet of a diver’s flag shall operate that vessel at a speed that leaves a flat wake, but in no case may the vessel be operated at a speed greater than 5 nautical miles per hour.

(Boating Regulations for Nevada-Arizona Interstate Waters Lake Mead-Lake Mohave and the Colorado River; State of Nevada Division of Wildlife in Cooperation with the U.S. National Park Service and State of Arizona Game and Fish Department)

More information regarding diving at Lake Mead National Recreation Area is available at:
http://www.nps.gov/lame/scuba.html
Section IV. Scheduling Procedures

Recognized educational, research, governmental, and nonprofit civic organizations may request the use of the Forever Earth vessel for approved activities through the University of Nevada, Las Vegas.

Groups/organizations interested in using the vessel can begin the reservation process in one of two ways:

1. By contacting:
   Daphne Sewing
   Project Manager
   University of Nevada, Las Vegas
   702-895-5098 or daphne.sewing@unlv.edu; or

2. By scheduling through the Forever Earth website:
   www.discovermojave.org/forever_earth/

The group leader should begin the reservation process at least 4-6 weeks in advance of the desired use date, so that all arrangements (e.g., scheduling the boat; scheduling a pre-trip classroom visit; obtaining insurance documents; etc.) can be made. Information needed includes contact information, proposed reservation date, purpose of trip, time leaving dock and time arriving back at dock, number of passengers, and grade level (if appropriate).

Scheduling Process

The scheduler will:

1. Start a Forever Earth Reservation Application (Appendix B) by filling in the provided information based on the initial phone call/email OR review the on-line reservation database for pertinent information.

2. Contact the group leader to complete the following:
   - Determine the group or organization name, description and complete contact information (address, phone number, fax and e-mail).
   - Establish whether the potential user group’s intended use aligns with the "Intent of Usage Requirements" (see page 18) and request a description of proposed projects/uses (for uses other than programmed Forever Earth Floating Classroom trips).
   - Determine whether the group is self-insured. If not explain the insurance requirements and provide information regarding obtaining a certificate of insurance.
   - Explain that the maximum number of passengers (teachers, students, other adult chaperones, researchers, meeting participants) cannot exceed 25.
   - If the group is a student group, explain that the desired adult to child ratio of 1:10; also explain that the minimum age allowed on board are children in the 4th grade.
• Discuss dates, destinations and duration of use/ determine if submission of proposed itinerary is needed.
• Discuss the payment of fuel/oil costs.
• Go over the following:
  o General liability release and photo waiver
  o Fee waiver letter
  o Scheduling a pre-trip classroom visit

3. After the contact, complete the following:
   • Complete the on-line Reservation Application (if not already completed by the group leader) and fax or email to the potential user with appropriate forms and informational sheets. The information sheets may also be downloaded from the website.
   • Contact Lake Mead Environmental Education Coordinator to schedule NPS staff if needed.
   • Contact senior boat captain to coordinate desired usage date(s).
   • If NPS Staff or boat crew is unavailable for the desired dates, call potential user and ask for new dates; continue coordinating among user, NPS and Forever Earth staff until a mutually agreeable date is found.
   • If the group is not self-insured, arrange to receive a certificate of insurance. The documentation is required within two weeks of scheduled date.
   • When final, signed reservation application is received and insurance (if applicable) is confirmed, verify date and logistics with the senior captain.
   • FAX a list of scheduled dates to Callville Bay Boat Rentals Manager.
   • Notify Lake Mead Environmental Education Coordinator to add the group to the monthly list of educational groups and that Entrance Fee Waiver letter (on file) will be provided to the group leader.
   • If applicable, verify insurance.
   • Call user group to inform of finalization and schedule a pre-trip classroom visit.
   • Create schedule of activities for the group.

The participating group must provide or complete the following:
   • Submit itinerary if providing own programming.
   • Commit to paying for fuel and oil when invoiced by UNLV’s Public Lands Institute.
   • Complete Forever Earth Reservation Application and associated check-offs. The Application must be signed by an authorizing official or administrator.
   • If the group is not self-insured, finalize insurance requirement by obtaining a certificate of insurance with additional insureds added as requested.
   • Provide signed copies of the liability waiver for each participant.

Liability Release and Photo Waiver
Participants are asked to sign a liability release and photo waiver (Appendix E). By signing the liability waiver, participants are acknowledging that some risk is involved in the activity and are agreeing not to hold the Nevada System of Higher Education and, therefore, UNLV, responsible for any claims, losses, or damages. A signature on the photo waiver gives permission to UNLV and its partners to use photos for materials representing the Forever Earth Project including, but not limited to: brochures, newspaper and magazine articles, PowerPoint presentations, grant proposals, and all other marketing materials. **Those who do not agree to the photo waiver will be clearly marked with a nametag and will not be photographed.**

**Cancellation Policy**

For the safety of the participants, the Forever Earth Project Manager reserves the right to cancel without prior warning, any field trip, class, or other scheduled usage of Forever Earth. Should any event occur (such as, but not limited to, those listed below) that affects safe delivery of the scheduled program, the Project Manager will make every attempt to reschedule the group on a mutually agreeable date.

- Mechanical failure of the Forever Earth vessel
- Severe inclement weather
- Natural or local disaster
- Failure of participants to adhere to Forever Earth policy

**Cleaning Policy**

Users of the Forever Earth vessel must return the vessel and all of its scientific equipment to the same condition that they were received. Forever Earth is supplied with cleaning chemicals that have been awarded the Green Seal of Approval and cleaning supplies to assist users in assuring the cleanliness of the Forever Earth vessel. Participants must only use the cleaning chemicals supplied and not bring any other products aboard. Cleaning the vessel includes:

- vacuuming carpets
- mopping linoleum
- wiping down all used counter surfaces and mirrors and drying with a clean towel
- thoroughly cleaning and rinsing all scientific glassware used
- appropriately removing sharps and hazardous waste
- turning off computer and other electronic scientific equipment
- removing all personal items and food brought aboard
- removing trash and recyclables from Forever Earth, carting them to shore, and depositing in the appropriate shore-based containers (a cart is available aboard Forever Earth)

For short trips (4 hours or less), cleaning is generally not required. However, full-day and longer usage requires agreement by the user group to the cleaning policy.
The vessel will be inspected after use, and participating groups that fail to clean the vessel adequately will not be allowed to use the vessel again.

Participating groups may only use cleaning chemicals supplied aboard Forever Earth, no other cleaning chemicals are allowed aboard. Use of non-approved cleaning chemicals could damage the vessel and result in loss of ISO-14001 environmental certification status.

**Food**

In general, participating groups are responsible for bringing aboard all food and drink for their trip. If the group leader is not providing food and drink to its participants, then the group leader should instruct individuals to bring their own snacks, lunch, and bottled water (or whatever food and beverage supplies are appropriate for the duration of their trip). Sugary foods, candy, and soda are to be discouraged for students and children as they will be confined to a small space for a number of hours.

**Clothing**

Group leaders should ensure that their participating group members wear and bring the appropriate clothing for the weather. In general, consider the following:

- Flip-flops or slide sandals are inappropriate regardless of season
- Sunscreen, UV protective lip balm, hats with brims, and sunglasses
- Long-sleeved shirts can provide protection against the sun
- Bring appropriate warm layers in the winter

**User Costs**

The Forever Earth vessel is not licensed as a “Commercial Vessel” by the United States Coast Guard. Thus, no fees or compensation may be charged by the vessel owner or crew. The United States Coast Guard uses a broad interpretation of the term “compensation,” thus in addition to cash and currency, compensation includes gifts of any kind. The crew may not accept compensation or gifts from passengers.

Participating groups may pay for fuel and oil. Arrangements to pay for fuel and oil costs by credit card, cash, or invoice must be made before the scheduled use. The amount of fuel used is determined by immediate refueling upon return at the fuel dock. Fuel and oil rates vary as do gas rates for cars.
SECTION V. ABOARD FOREVER EARTH

Authority of the Boat Captain
The captain of the Forever Earth vessel has the full and final responsibility for the safety of the houseboat and all personnel and participants aboard. Because of this responsibility, he/she has full authority over all operations and personnel, both crew and visitors, in regard to safety. In all decisions regarding safety, the captain’s authority is absolute.

The captain will obtain the latest wind and weather forecasts prior to the departure of each trip. It is his/her decision regarding the feasibility of a trip due to weather, mechanical considerations, or other related factors. The captain may also shorten a trip or modify the activities of a group based on safety considerations.

Pre- and Post-trip Duties of the Boat Captain and Deckhand

Duties of the Forever Earth captain include:

- Navigating while the school groups, university students, or researchers engage in activities appropriate to the four principal purposes of the Forever Earth program.
- Directing and coordinating operations with a deckhand for each outing.
- Preparing the boat for timely departures.
- Performing vessel-to-shore communications as necessary.
- Assessing and coordinating preventive and regular maintenance procedures for the vessel with Callville Bay Resort and Marina.
- Assisting group leaders with charting courses appropriate for educational experiences and research activities.
- Maintaining operational log book, including pre- and post-trip inspections and completing the daily log (Appendix F).
- Ensuring safety equipment is up-to-date.
- Re-fueling and oil replacement.
- Cleaning or coordinating cleaning tasks.

Duties of the Forever Earth deckhand include:

- Assisting the captain with the safe operation of the boat.
- Assisting the captain and group leader with the safety of the group.
- Preparing the boat for timely departures.
- Performing vessel-to-shore communications as necessary.
- Performing departure and arrival docking procedures.
- Maintaining operational log book, including pre- and post-trip inspections.
- Ensuring safety equipment is up-to-date.
- Cleaning or coordinating cleaning tasks.
Station Bill
In October 2006, the Forever Earth boat crew conducted safety drills and developed a “station bill” (Appendix G) to outline responsibilities during emergency situations, including man overboard; fire; collision; and abandon ship. Although the captain and deckhand have primary responsibilities for managing the situation, Forever Earth staff members are assigned duties as deckhands #2, #3, and #4. These duties vary from crowd control to acting as a “spotter.” Assignments are made and duties are reviewed before each trip departure. In addition, the primary Forever Earth staff member designated as deckhand #2 carries a handheld radio during each trip for direct communication with the captain and deckhand.

Prohibited Items
For the safety of staff and participants, the following are not permitted on board Forever Earth:

1. Prohibited substances

   **NRS 484.1245 “Prohibited substance” defined.** “Prohibited substance” means any of the following substances if the person who uses the substance has not been issued a valid prescription to use the substance and the substance is classified in schedule I or II pursuant to NRS 453.166 or 453.176 when it is used:
   - Amphetamine.
   - Cocaine or cocaine metabolite.
   - Heroin or heroin metabolite (morphine or 6-monoacetyl morphine).
   - Lysergic acid diethylamide.
   - Marijuana or marijuana metabolite.
   - Methamphetamine.
   - Phencyclidine.

   (Added to NRS by 1999, 3414)

2. Firearms and other weapons (unless carried by law-enforcement personnel)
3. Glass containers (other than scientific equipment such as test tubes)

Passenger Conduct
The boat captain will ensure proper conduct of passengers at all times. Regarding conduct, passengers will be given the information below in a safety briefing aboard Forever Earth staff before departure (see Appendix H for safety briefing outline).

- No running, pushing or shoving.
- No sitting or leaning on the railings.
- Do not go anywhere on the boat alone.
- Life jackets must be worn when outside the main cabin.
- Close the back door behind you when you are the last person in or out of the main cabin.
- It’s always a good idea to have one hand holding onto something if you’re standing up.
- Be careful going up or down the ladder; go down the ladder the same way that you came up the ladder.
- Hold onto everything when you are outside; paper, hats, clothing, etc. can be blown away and overboard.

Medical Emergencies
First-aid kits are stored in the main cabin and on the upper deck. Oxygen and associated medical equipment are stowed below deck and are available to certified medical personnel as appropriate. In the event of an emergency, the captain will use a radio to contact dispatch who will arrange transport to the appropriate medical facility.

Personal Flotation Devices
U.S. Coast Guard approved Type I (jacket) Personal Flotation Devices (PFDs) are located on the Forever Earth vessel in two long, marked fiberglass storage boxes. Children and adults are required to don PFDs at any time directed by the captain in emergency conditions.

Children, ages 12 and younger, are required to wear the provided PFDs at all times except when inside a cabin (i.e., when on the front, aft, or top deck, children, ages 12 and younger, must wear a lifejacket). In addition, the captain and/or the Forever Earth Project Manager may require older student groups to wear life jackets.

U.S. Coast Guard approved Type IV (ring lifebuoy) PFDs are mounted on brackets on the bow, aft deck and top deck. Type IV devices are for use as an extra device to aid conscious persons who have fallen overboard.
Section VI: Donors and Contacts

Through the creation of public and private partnerships dedicated to the preservation of the environment and Lake Mead National Recreation Area, and through the generosity of its donors, the Forever Earth Project has become a reality and continues in its development. Many thanks are owed by the Forever Earth Project to the following:

- Forever Resorts
- Lake Mead National Recreation Area
- Outside Las Vegas Foundation
- American Recreation Coalition
- Black Canyon/ Willow Beach River Adventures
- Bombardier
- Callville Bay Resort and Marina
- Cottonwood Cove Resort and Marina
- Chevron
- Crane Contec
- Enviromarine
- Envirolift
- Forever Living Products
- Fun Country Marine Industries
- General Motors Automobile Company
- Petroleum Wholesale
- Marysville Marine South
- Meadows Construction
- Pictographics
- Polaris
- Retail Works
- Ryerson Tull
- Southern Nevada Interpretive Association
- University of Nevada Las Vegas
- Westerbeke
- World Class Wire
- Z.F. Mathers
- Overland Petroleum Company
- Golder Associates

Grants Received

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August 2008       REI       $10,000

Contacts:

Ellen Anderson
Environmental Education Specialist
Lake Mead National Recreation Area
601 Nevada Way
Boulder City NV 89005
Ellen_Anderson@nps.gov
702/293.8957 (office)

Kerrie Blazek
Project Facilitator, K-12 Science
Clark County School District
3950 South Peco-McLeod, Suite 2-C
Las Vegas, NV 89121-4396
702/799.2348

Dr. Allison Brody
Project Manager, Conservation Education and Interpretation Strategy
University of Nevada, Las Vegas, Public Lands Institute
4505 S Maryland Parkway
Las Vegas, NV 89154-2040
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American Recreation Coalition
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Suite 450
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arc@funoutdoors.com

Education in the Environment: A Strategy for Continued Interagency Outdoor Programming
Quarterly Report: Year 4 • Quarter 1
Box 451042
Las Vegas NV 89154-1042

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General Manager
Callville Bay Resort and Marina
Box 100, HCR-30
Las Vegas, NV 89124-9410
702/565.8958 (office)
702/249.9032 (cell)
Appendix A

Insurance Information
Insurance Requirement

Your organization is required to show evidence of active and adequate liability insurance in the form of an endorsement adding the three organizations listed below as additional insureds and deleting the watercraft exclusion on your policy for this activity. Please ask your broker to provide a certificate of insurance and the required endorsement to the Forever Earth scheduler. These documents are required to hold your reservation and must be received at least two weeks prior to the scheduled date of Forever Earth use. There is no exception to this request. If you find you cannot meet these requirements, please contact the Forever Earth scheduler immediately to withdraw your reservation.

Information for your Broker

Insurance Required:

- Commercial General Liability
  - Each Occurrence $1,000,000
  - Products/Completed Operations Aggregate $1,000,000
  - Personal and Advertising Injury $1,000,000
  - General Aggregate $2,000,000

Date of Activity: ____________________________

Location of Activity: Lake Mead National Recreation Area

Activity Description:

The Forever Earth Project is coordinated through a partnership of the University of Nevada Las Vegas, Fun Country Marine Industries, and Forever Resorts. At Lake Mead National Recreation Area (Nevada), participants will board Forever Earth, a 70-foot houseboat that is outfitted with water science testing supplies and monitoring equipment. The vessel will travel to various points on Lake Mead for hands-on data gathering exercises, observation, and/or discussion. Forever Earth departs from Callville Bay Marina (Box 100, HCR-30; Las Vegas NV 89124-9410).

Additional Insureds to be added to your Certificate of Insurance:

Please include the following statement exactly as it appears below:

Officers, employees and volunteers of the below named entities are insureds with respect to liability arising out of the activities by or on behalf of the named insureds in connection with work performed for Forever Earth.

1) Board of Regents
   Nevada System of Higher Education
   Contact: Michael Means, Insurance Administrator
   4505 S Maryland Parkway
   Las Vegas, NV 89154-1042

2) Fun Country Marine Industries and

Education in the Environment: A Strategy for Continued Interagency Outdoor Programming
Quarterly Report: Year 4 • Quarter 1
3) Rex Maughan dba Callville Bay Resort and Marina
Contact: John Schoppmann
Senior Vice President, Resorts
Forever Resorts, L.L.C.
7501 East McCormick Parkway
Scottsdale, AZ  85258
Appendix B

Reservation Application and Receipt
Forever Earth

Reservation Receipt

Your reservation request has been received. Please print 2 copies of this page, one for your own records and one to complete and fax or mail to the Forever Earth Project Manager, see contact information below.

RESERVATION ID: 370

Project Manager Daphne Sewing
Paradise Elementary Environmental Science Club
Las Vegas, NV 89154
Phone: 702-895-5098 Fax:

Reservation Start Date/Time: 2008-11-08 9:00 AM
Reservation End Date/Time: 2008-11-08 2:00 PM
Number of students 20
Number of adults 4
Minimum Grade Level 5
Maximum Grade Level 5
Purpose of trip Education
Description of use Outdoor World Event
Comments

Where did you hear about us?
Reservation Status RECEIVED

Insurance (check one):
__ Our group is self-insured (examples include Clark County School District, federal and state agencies, etc.)
__ We understand that our group is required to add additional insureds onto its General Liability policy as instructed.

Additional Information (check all):
__ We understand that each participant must complete a release form.
__ We have read and agree to the cancellation and cleaning policies.
__ We agree to pay for fuel and oil at the dock with a major credit card or cash.

Research Groups ONLY (check all):
__ We have applied for the necessary research permits.
__ We have attached an abstract describing the research activities to be performed.

Authorized Signature: X____________________________

Education in the Environment: A Strategy for Continued Interagency Outdoor Programming
Quarterly Report: Year 4 • Quarter 1
Appendix C

Cleaning Policy
Cleaning Policy

To maintain low user cost and to keep Forever Earth in great shape for years to come, participants are required to clean up after themselves. We ask that the following be done before departure:

- wipe down table and counter surfaces with provided spray cleaner
- clean galley appliances that were used, and clear refrigerator of all food and drinks brought aboard
- empty the ice tray in the freezer compartment
- empty trash and clean all surfaces in the restrooms
- clean and put away all laboratory equipment and glassware that were used
- turn off and cover any electronic laboratory equipment that was used
- shut down computer and turn off monitor
- vacuum carpets if necessary, and wipe up any spills on decks and tile flooring
- walk through the interior and all decks to make sure no belongings are left behind
- dispose of all garbage and recyclables in the appropriate receptacles at the marina

Important note:
Cleaning solutions meeting specific environmental standards are provided onboard; all other cleaning solutions are prohibited!
Appendix D

Cancellation Policy
Cancellation by Forever Earth Project Partners

For the safety of the participants, we reserve the right to cancel without prior warning any field trip, class, or other scheduled usage of Forever Earth. Should any event occur (such as, but not limited to, those listed below) that affects safe delivery of the scheduled program, the University of Nevada, Las Vegas will cancel your use and make every attempt to reschedule your group on a mutually agreeable date.

- mechanical failure of the Forever Earth vessel
- severe inclement weather
- natural or local disaster

Cancellation by Participant

Should you wish to cancel your use of Forever Earth, please submit a notice of cancellation in writing by mail, e-mail or fax at least 72 hours prior to a trip.

Submit written notice of cancellation to:
Daphne R. Sewing
Project Manager, Forever Earth/Outdoor World
University of Nevada, Las Vegas
4505 Maryland Parkway
Box 452040
Las Vegas, NV  89154-2040

(e-mail) Daphne.Sewing@unlv.edu
(fax) 702/895.5166
Appendix E

General Liability Release
Release Requirement

Admittance aboard Forever Earth requires a completed release form. A parent or legal guardian must sign the release for participants under the age of 18. It is the policy of the University of Nevada, Las Vegas on behalf of the Nevada System of Higher Education and Forever Resorts, L.L.C. to provide for the safety of participants during Forever Earth use and to take every precaution reasonable to ensure that trips aboard Forever Earth are run with due regard for the safety of all participating individuals. However, the use of any vessel on any body of water involves a degree of risk, and the use of Forever Earth at Lake Mead is no exception.

General Release and Save Harmless Waiver

The undersigned does hereby assume any and all risks involved in boarding and traveling aboard the Forever Earth vessel as offered through the University of Nevada, Las Vegas and Forever Resorts, L.L.C. at Lake Mead National Recreation Area (National Park Service) and does hereby save and hold harmless the above organizations from any and all claims, losses and damages (including attorney’s fees and any costs involved because of said claims), on account of: lost or damaged articles; accident; any mishap due to alcohol or drug abuse; death; injury; illness; disruption; delays or cancellations caused by weather conditions; any mechanical or electrical difficulties; or other events beyond their control. __________ (please initial)

Image Consent and Release

The undersigned does hereby irrevocably consent that all photographs of below named participant taken during the participant’s time aboard Forever Earth by staff may be used and re-used by the Forever Earth Project partners for purposes of illustration, display, publication, and any other non-profit purpose. I understand that these images may be cropped, edited or otherwise altered. __________ (please initial)

My signature indicates that I have read the above General Release and Save Harmless Waiver, I fully understand its terms, I understand that I have given up rights by signing below, and I sign freely and voluntarily without any inducement.

Additionally my signature indicates that I have read the above Image Consent and Release, I fully understand its terms, I understand that I have given up rights by signing below, and I sign freely and voluntarily without any inducement.

___________________________________
participant (please print)                                                      participant signature

date
If participant is under the age of 18:

___________________________________

parent or legal guardian (please print) parent or legal guardian

signature date
Appendix F

Daily Log
# Forever Earth Daily Log

**FE Crew:**  
**WX**

**UNLV:**

**NPS:**  
**Elevation:**

<table>
<thead>
<tr>
<th>School/Agency:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Group 1 Depart:</th>
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<tbody>
<tr>
<td>#Children:</td>
<td>#Adults:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Group 2 Depart:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>#Children:</td>
<td>#Adults:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Group 3 Depart:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>#Children:</td>
<td>#Adults:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Purpose:**  
**Totals:**

<table>
<thead>
<tr>
<th>Port Gen End</th>
<th>Stbd Gen End</th>
<th>Oil Level P</th>
<th>S</th>
<th>Start</th>
<th>Start</th>
<th>Coolant</th>
<th>P</th>
<th>S</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</table>

**Hours Run:**

<table>
<thead>
<tr>
<th>Port OB</th>
<th>Stbd OB End</th>
<th>2cycle oil%</th>
<th>P</th>
<th>S</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fuel on Board %**  
**Fuel Added**  
**Fuel Cost/gal @**  
**Total Cost with bulk oil**

**Fresh Water %**  
**Added Y/N@**  
**Black Water %**  
**Pumped Y/N @**

**Required equipment on board and serviceable per master list:**  
**Y/N (make notes below)**

**Maintenance and/or operational problems:**

<table>
<thead>
<tr>
<th>Reported to:</th>
<th>When reported:</th>
<th>When resolved:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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*Education in the Environment: A Strategy for Continued Interagency Outdoor Programming*

Quarterly Report: Year 4 • Quarter 1
Appendix G

Station Bill
<table>
<thead>
<tr>
<th>FOREVER EARTH STATION BILL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Man Overboard</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Fire</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Collision</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Abandon Ship</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
Deckhand #2 will be the Public Lands Institute Group Leader or NPS Group Leader. Deckhands #3 and #4 will be the assistant group leaders.
SAFETY TALK OUTLINE

While on Forever Earth, there are a number of rules that we insist on being followed. This is for your safety and the safety of everyone onboard.

- No running, pushing or shoving.
- No sitting or leaning on the railings.
- Do not go anywhere on the boat alone.
- Life jackets must be worn when outside the main cabin.
- Close the back door behind you when you are the last person in or out of the main cabin.
- It’s always a good idea to have one hand holding onto something if you’re standing up.
- Be careful going up or down the ladder; go down the ladder the same way that you came up the ladder.
- Hold onto everything when you are outside; paper, hats, clothing, etc. can be blown away and overboard.

Other

- Recycle all aluminum and plastic bottles (like bottled water containers).
- Flush the toilet by pressing and holding the black button in for a slow count of 15. Only toilet paper goes into the toilet.
- No gum.
- Turn off cell phones.
<table>
<thead>
<tr>
<th>Date(s)</th>
<th>Group Type</th>
<th>Group</th>
<th>Trip Purpose</th>
<th>Length of Trip</th>
<th># of Adults</th>
<th># of Students</th>
<th>Total Pass.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Jun</td>
<td>Education</td>
<td>Twitchell ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>8</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>3-Jun</td>
<td>Education</td>
<td>Twitchell ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>12</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>4-Jun</td>
<td>Education</td>
<td>Twitchell ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>8</td>
<td>34</td>
<td>42</td>
</tr>
<tr>
<td>7-Jun</td>
<td>Education</td>
<td>Vandenburg ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>8-Jun</td>
<td>Education</td>
<td>Vandenburg ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>12</td>
<td>31</td>
<td>43</td>
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<td>9-Jun</td>
<td>Education</td>
<td>Vandenburg ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>15</td>
<td>32</td>
<td>47</td>
</tr>
<tr>
<td>10-Jun</td>
<td>Education</td>
<td>Steele ES (5th grade GATE)</td>
<td>Student Field Trip</td>
<td>4 hrs.</td>
<td>6</td>
<td>17</td>
<td>23</td>
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<tr>
<td>11-Jun</td>
<td>Education</td>
<td>Jeffers ES (5th grade)</td>
<td>Student Field Trip</td>
<td>4 hrs. (2 trips)</td>
<td>8</td>
<td>30</td>
<td>38</td>
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<tr>
<td>12-Jun</td>
<td>Education</td>
<td>National Marina Day - General Public</td>
<td>General Public Activity</td>
<td>6 hrs at dock</td>
<td>19</td>
<td>16</td>
<td>35</td>
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<tr>
<td>25-Jun</td>
<td>Education</td>
<td>Jeffers ES (5th grade)</td>
<td>Student Field Trip</td>
<td>3 hrs. (2 trips)</td>
<td>9</td>
<td>27</td>
<td>36</td>
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<tr>
<td>29-Jun</td>
<td>Education</td>
<td>Harris Springs Ranch (teens)</td>
<td>Outdoor World Activity - Science and Art Adventure</td>
<td>4 hrs.</td>
<td>6</td>
<td>16</td>
<td>22</td>
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<tr>
<td>3-Jul</td>
<td>Agency</td>
<td>National Park Service</td>
<td>NPS Mobile Visitor Center</td>
<td>5.25 hrs.</td>
<td>2</td>
<td>0</td>
<td>2</td>
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<td>12-Jul</td>
<td>Education</td>
<td>Child Focus</td>
<td>Outdoor World Activity - Science and Art Adventure</td>
<td>3.5 hrs.</td>
<td>5</td>
<td>16</td>
<td>21</td>
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<tr>
<td>24-Jul</td>
<td>Agency</td>
<td>National Park Service</td>
<td>NPS Mobile Visitor Center</td>
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<tr>
<td>7-Aug</td>
<td>Agency</td>
<td>National Park Service</td>
<td>NPS Mobile Visitor Center</td>
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<td></td>
<td></td>
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<tr>
<td>21-Aug</td>
<td>Agency</td>
<td>National Park Service</td>
<td>NPS Mobile Visitor Center</td>
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</table>

**TOTALS for 1st quarter**

<table>
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<tr>
<th>Groups</th>
<th>Education: 12 groups</th>
<th>Agency: 4 groups</th>
<th>Education -- 64.5 hrs.</th>
<th>Agency -- 22.5 hrs.</th>
<th>Total Pass.</th>
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<td>16</td>
<td>12</td>
<td>4</td>
<td>120</td>
<td>305</td>
<td>425</td>
</tr>
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**TOTALS for Year 4 (to date)**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Education: 12 groups</th>
<th>Agency: 4 groups</th>
<th>Education -- 64.5 hrs.</th>
<th>Agency -- 22.5 hrs.</th>
<th>Total Pass.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>12</td>
<td>4</td>
<td>120</td>
<td>305</td>
<td>425</td>
</tr>
</tbody>
</table>
Assessment of Forever Earth Curriculum 2009/2010
Final Report

Assessment of Forever Earth Curriculum 2009-2010

Submitted by:

Lori Olafson
Gregg Schraw
Michelle Weibel

Department of Educational Psychology
UNLV
Executive Summary

Forever Earth is a floating environmental laboratory and learning center at Lake Mead National Recreation Area that provides hands-on science experiences for students in the Clark County School District. The Forever Earth program was brought about through the efforts of numerous partners including Forever Resorts, a division of Forever Learning LLC, the National Park Service, Lake Mead National Recreation Area; Outside Las Vegas Foundation; and UNLV’s Public Lands Institute. In 2005, a formal written agreement was reached between Fun Country Marine Industries and UNLV’s Public Lands Institute to operate and manage the Forever Earth houseboat for the purpose of enhancing outdoor environmental education efforts in Southern Nevada. During the first year of the assessment program, knowledge, attitude, and performance assessments were developed to document the effectiveness of program events over the duration of the program. The findings from the first three years of assessment revealed that students’ knowledge and attitudes increased substantially as a result of participating in the Forever Earth field trips. Results also demonstrated that teachers’ perceptions of the curriculum were very favorable. In this final year of assessment (2009/2010), students again completed knowledge, attitude, and performance assessment and results indicated that students’ knowledge, attitudes, and skills increased substantially as a result of participating in the Forever Earth field trips.
Introduction

The Forever Earth program was brought about through the efforts of numerous partners including Forever Resorts, a division of Forever Learning, LLC: the National Park Service, Lake Mead National Recreation Area; Outside Las Vegas Foundation; and UNLV’s Public Lands Institute. In 2005, a formal written agreement was reached between Fun Country Marine Industries and UNLV’s Public Lands Institute to operate and manage the Forever Earth houseboat for the purpose of enhancing outdoor environmental education efforts in Southern Nevada.

A development team consisting of science educators from Clark County School District (CCSD) and informal educators from UNLV’s Public Lands Institute (PLI) and Lake Mead National Recreation Area was formed to create the Forever Earth curriculum. The four member On-Site Experience Development Team consisted of program staff from the PLI and Lake Mead National Recreation Area. This team created the programming that was delivered aboard the Forever Earth Vessel and on land at Lake Mead National Recreation Area, and focused on creating engaging activities and ensuring that the mission and vision of the National Park Service and Lake Mead National Recreation Area was accurately presented. The Classroom Experience Development Team authored the pre-visit and post-visit lessons. This team, consisting of four members (two from PLI and two from CCSD), ensured that grade-appropriate science standards were met and that the Clark County educator’s perspective was carefully considered.

The curriculum for each grade level was developed to complement traditional classroom studies in grades four, five, six, and seven with engaging, participatory, on-site activities and support lessons based upon a solid framework for inquiry and discovery. Students participated in activities, performed investigations, and used scientific equipment to discover the answers to key questions. Curricula for grades four, five, six, and seven were developed, field tested and delivered.

In 2006/2007, our research team became responsible for developing an assessment plan in order to document the effectiveness of the curriculum over the duration of the program. We developed assessment instruments and administered these instruments to program participants. In the second and third years of the assessment program (2007/2008, 2008/2009) the assessments were modified slightly and again administered. In this report, we describe the assessment plan and provide results for 2009/2010 based on completed assessments.

Context

The significant water and other natural resources found within Lake Mead National Recreation Area provide extraordinary material for learning about science and the environment. The primary objective in developing curriculum for the Discover Mojave Forever Earth Project was to create interdisciplinary, interactive, and inquiry-based programs for students on the floating environmental education center and research laboratory. Under the direction of Daphne Sewing, Discover Mojave Forever Earth Project Manager for PLI, the curriculum development team created a curriculum in which participants learned about the importance of the lake and public land to the desert’s flora and fauna. The curriculum manual included detailed descriptions and facilitator’s guides for the activities conducted; on-site activity support materials; and pre-trip and post-trip classroom activities with accompanying support materials.
Participants in Forever Earth programs explored the Lake Mead aquatic environment and its interrelationships with the surrounding area through their participation in the following four curricula:

- **Grade 4: Just Passing Through! The Water Cycle!**
  Students learned about Lake Mead’s water use cycle by following one drop of water and then diagramming this important cycle on a magnet board. Working as scientists, students determined if water is the same in all parts of the lake by comparing water samples from the middle of the lake and from Las Vegas Bay.

- **Grade 5: Finicky Fish Finish…Last!**
  Students explored what has happened to the Colorado River and the reasons why it is so difficult for a native fish species, the razorback sucker, to thrive in this changed environment. Students collected water quality data to determine whether habitat conditions are sufficient for the survival of young razorback suckers.

- **Grade 6: Alien Invaders!**
  Students studied Lake Mead to determine whether it is at risk for invasion by zebra mussels. Students learned about the consequences the zebra mussels could have on the lake and its living and non-living resources. In January 2007, this curriculum was revised after the discovery of quagga mussels, another invasive species.

- **Grade 7: GSI: Geo Scene Investigation**
  Students are introduced to topographic and geologic maps and participate in an inquiry-oriented activity designed to introduce them to the geology, landforms, geologic processes, and geologic timeline of the Lake Mead National Recreation Area.

Each of these events was one time only, and was initially supposed to last between two and a half to four hours on the boat, not including pre-trip and post-trip activities. However, it was necessary for PLI staff to develop additional on-shore activities for many of the groups participating in the Forever Earth program. For insurance purposes, only 23 students were permitted on the boat at any one time. Given that most of the classes had in excess of 23 students, most were split into two groups, with one group on the boat for two hours and the other group doing on-shore activities for two hours.

**Assessment Program**

In the first three years of the assessment program, data was collected from both students and teachers. The assessments were conducted over time (i.e., pre- and post-intervention). Pre-test assessments were conducted in the classroom during the pre-trip visit. Post-test assessments were conducted onsite upon completion of the day’s activities. In years three and four a delayed maintenance measure was added in the form of a follow-up post-test (Gall, Gall, & Borg, 2006), administered one to two weeks after completion of the event. The use of a follow-up post-test strengthens the estimate of the long-term program effect (Rossi, Lipsey, & Freeman, 2004). In year four (2009/2010) data was not collected from teachers, as previous years’ results have been remarkably consistent with respect to both interview and survey data,
with all teacher participants indicating positive attitudes towards the Forever Earth program and its curriculum.

Student Assessment

Student assessment items were developed in alignment with the Forever Earth curriculum. Students were assessed for three areas of growth including knowledge, attitudes, and skill performance for the four curricula. No modifications were made to the assessments in 2009/2010.

Knowledge Items

Assessments for each of the four curricula included four to five knowledge questions related to the specific activity (e.g., Throughout time, what geologic actions or processes have been at work at Lake Mead?). These knowledge questions consisted of constructed-response items, where students were required to generate answers in response to a prompt rather than choose from a set of alternatives. Knowledge questions were developed to assess the instructional objectives outlined in each of the curricula. For example, one of the stated knowledge objectives for Geo-Scene Investigation (Grade Seven) was “Students will identify common rocks and minerals of the Lake Mead area.” The corresponding knowledge item on the pre- and post- test was Describe some of the common rocks and minerals of the Lake Mead area. Developing items for each knowledge objective help to ensure content-validity of the assessment (Thorndike, 2005). See Appendix A for an example of a knowledge assessment.

Attitude Items

The attitude scales that were developed in 2006/2007 were based on existing assessments (Metzger & McEwen, 1999; Musser & Diamond, 1999; Schindler, 1999) that were designed for the purposes of assessing children’s attitudes to recreational events and to the environment. We constructed similar attitude scales to measure children’s attitudes towards the Forever Earth curriculum and to the environment.

An attitudes assessment was developed for each curriculum. The attitude pre-test included four items. The first two items on each attitude assessment were questions related to the specific event (e.g., Learning about native and non-native fish in Lake Mead was very interesting to me.) The second two items were related more generally to the Forever Earth activity (e.g., I would like to do another Forever Earth Activity).

At post-test, the four pre-test items were repeated and four additional questions were included for grades four, five, and six that were designed to measure more general attitudes towards the environment (e.g., I learned important things today about the water). The seventh grade post-test eliminated questions five and six because these two items were not strongly related to the seventh grade curriculum. See Appendix B for an example of an attitude assessment.

Skills

Because each curriculum included a hands-on activity component, such as students using a plankton net to collect plankton as part of the sixth grade curriculum, we felt that it was important to include a performance assessment component. As Stiggins (2005) notes, observing and evaluating skills as they are being performed can be a rich and useful source of information about the attainment of specific skills. Skill performance assessments, in the form of a checklist completed by the event facilitator, were designed to measure whether or not the
child demonstrated a particular skill related to the curriculum objectives and the Nevada Science Content Standards. For example, one of the science standards in the sixth grade curriculum is that students know how to use appropriate technology and laboratory procedures for observing, measuring, recording, and analyzing data. The performance skill related to this objective was Participant collects water sample and performs water quality measurements. Event facilitators determined whether or not the participant demonstrated the skill by checking one of two columns: demonstrates skill or does not demonstrate skill. (See Appendix C for a sample performance assessment).

In the first year of the assessment program, these performance assessments were not conducted. Primarily, this was due to the time constraints faced by program facilitators as they assessed knowledge and attitudes for 1200 participants. In the second year, the performance assessments were conducted by randomly selecting two schools at each grade level, except for seventh grade because only one seventh grade classroom completed the seventh grade curriculum and measurement tools. Initially, at each grade level, students were randomly selected. However, given the ease with which trained observers and staff found they could complete the assessments, all students from the selected schools were assessed on their performance. In 2009/2010 the same sampling strategy was used with the goal of sampling at least two schools for each grade level. However, the sixth grade curriculum was not implemented in any sixth grade classrooms, and as a result, there were no completed assessments for the sixth grade curriculum.

Summary of Assessment Program

The assessment plan of the Forever Earth curriculum in 2009/2010 included two data collection components:

1. the pre- and post-test measures of students' knowledge and attitudes
2. a two-week follow-up post-test measure of students' knowledge henceforth referred to as the “repeated post-test” and a two-week follow-up of attitudes referred to as “post-test general attitudes”

Implementation

The assessments were conducted over time (i.e., pre- and post-intervention) to determine the effectiveness of the curriculum in having an impact on student knowledge and attitudes about the environment, and the performance of skills related to the curriculum content at each grade level.

In the first year of the assessment program, the curriculum was implemented on 39 separate occasions in the 2006/2007 school year, involving 1263 students from 18 schools. All participants completed the knowledge and attitude components of the assessment program. In the second year of the assessment program, a sampling strategy was initiated in which two schools at each grade level that experienced the curriculum intended for that grade level were randomly selected for assessment of knowledge, attitudes, and skills. That is, two fourth grade classrooms that signed up for the water cycle curriculum (4th grade curriculum) were assessed. This selection criterion was followed for all grade levels in years three and four. In year 4 (2009/2010), 68 fourth graders, 61 fifth graders, and 60 seventh graders completed the assessments.
Analysis

The knowledge measure, where students responded to open-ended questions, was analyzed using content analysis (Berg, 2001), in which student responses were coded in three categories (no knowledge, partial knowledge, and more complete knowledge). For example, a student response of “I don’t know” to the question “Can quagga mussels thrive in Lake Mead? Why or why not?” was coded as no knowledge because the response contained little, or incorrect, knowledge. Partial knowledge occurred when a student responded with some correct information or provided a very general statement (e.g., “Yes, quagga mussels can thrive in Lake Mead”). Student responses coded as more complete knowledge typically included more specific information or more than one example or reason (e.g., “Yes, quagga mussels can survive in Lake Mead as long as there is lots of plankton, and the temperature and pH of the water are in the right range”).

The scoring guide that was developed in the first year of assessment was revised in Fall 2008 to account for the variety of responses that occurred in the large sample. We calculated the median rank across the three knowledge categories (no knowledge, partial knowledge, and more complete knowledge) for all pre- and post-assessments. A no knowledge response was assigned a 0; a partial response was assigned a 1; and a more complete response was assigned a 2. See Appendix D for a sample scoring guide.

The analysis of attitudes compared pre-test and post-test ratings by students who participated in the events. Ratings were made on a 1-5 Likert scale.

Results

Student Knowledge

Student pre- and post-test knowledge scores are shown in Table 1. Individual scores ranged from 0 to 2 on four separate measures for a total composite score that ranged from 0 to 8.

Statistically significant gains occurred at each grade level. Scores were treated as interval data and compared using paired samples t-tests between pre-test and post-test composite scores. A negative t-score indicates that the post-test mean was higher than the pre-test mean, which occurred at each grade level. These findings show that there was a significant increase in knowledge at each grade. Table 1 shows that knowledge increased substantially from pre-test to post-test across the 4th, 5th and 7th grade samples. The increase at 4th, 5th and 7th grade was two standard deviation units, which is considered a very large effect size. Comparing pre- and post-test understanding, participants went from an average level .50 understanding (i.e., partial knowledge) at pre-test to close to a level 1.5 understanding (i.e., more complete knowledge) at post-test.

In addition, there was a significant increase in knowledge at each grade between the pre- and repeated post-test. In contrast, the difference between post-test and repeated post-test was significant only at the 4th grade, indicating a significant long-term gain. Scores between the post-test and repeated post-tests did not differ at the 5th and 7th grades, indicating maintenance of gains over the long-term.
Pre and post-test means for each knowledge item were also calculated for every grade level (see Table 2). Statistically significant gains occurred between the pre-test item and the post-test item in all cases except for Item 2 at the 4th grade level.

Student Attitudes

Means, standard deviations, and reliability scores for pre-, post-test, and post-general attitude scores are shown in Table 3. Scores were treated as interval data and compared using paired samples t-tests. We created three different attitude scores, including pre-test attitudes, the matching post-test attitudes (i.e., same four items completed as the pre-test), and general post-test attitudes. We refer to these as pre-test, post-test, and post-general attitudes respectively. Each rating was made on a 5-point scale and summed to create a score that ranged from 5 to 20. These scores were divided by the number of items to create a mean composite score from 1 to 5. Each of the scores exceeded the minimally acceptable value of .70 for coefficient alpha.

Table 3 reveals that pre-test and post-test attitudes differed significantly for the 4th and 5th grades. Post-test attitudes were significantly higher in both cases. The same pattern occurred for pre-test and post-test general attitudes in the 4th and 5th grades. Pre-test and post-test scores did not differ in the 7th grade. Pre-test and post-test general scores did not differ at any of the grades, indicating maintenance of favorable attitudes at a two-week follow-up.

The data shown in Table 3 indicate that attitudes increased significantly from pre- to post-test and remain stable from post-test to the follow-up post-test. Overall, these findings suggest that attitudes improved significantly due to instruction and remained high.

Student Skills

Curriculum-relevant performance skills were assessed at each grade level. One hundred percent of students at each grade level performed these skilled successfully, indicating that all students achieved mastery of curriculum-relevant field skills.

Conclusions

The purpose of this report was to provide results from the assessment program of Discover Mojave Forever Earth in 2009/2010 implementation year. The assessment program that was implemented was designed to evaluate the effectiveness of the four separate curricula that were developed.

Results support several conclusions. The most important is that each of the curricula assessed (fourth, fifth, and seventh grades) produced substantial increases in knowledge, indicating that the activities had significant instructional benefit. A second conclusion is that student attitudes improved significantly after experiencing the curriculum in two of the three grade levels. A third conclusion is that all participants achieved mastery of the skills assessed within each curriculum. A fourth finding is that the gain between pre-and post-test for knowledge and attitudes was maintained at the two-week follow-up post-test.
Recommendations

1. Continue the assessment program for students. Results suggest that the assessment instruments used for students were reliable and sensitive to growth over time with respect to their knowledge, skills, and attitudes.

2. Examine and consider revising the knowledge items that did not increase significantly between the pre and post-test (Grade 4: item 2). Students scored high on the pre-test item which may indicate prior knowledge. One consideration would be to make the item difficulty level higher.

Table 1: Pre, Post and Repeated Post-Test Composite Knowledge Scores by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Sample Size</th>
<th>Pre-test Mean and Standard Deviation</th>
<th>Post-test Mean and Standard Deviation</th>
<th>Repeated Post-test Mean and Standard Deviation</th>
<th>t value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>68</td>
<td>3.23; .95</td>
<td>5.82; 1.25</td>
<td>-16.18</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Pre/Repeated Post</td>
<td>68</td>
<td>3.23; .95</td>
<td>6.47; .80</td>
<td>-21.81</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Post/Repeated Post</td>
<td>68</td>
<td>5.82; 1.25</td>
<td>6.47; .80</td>
<td>-4.17</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>61</td>
<td>1.53; 1.05</td>
<td>5.77; 2.08</td>
<td>-16.82</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Pre/Repeated Post</td>
<td>61</td>
<td>1.53; 1.05</td>
<td>5.16; 1.88</td>
<td>-14.48</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Post/Repeated Post</td>
<td>61</td>
<td>5.77; 2.08</td>
<td>5.16; 1.88</td>
<td>1.93</td>
<td>n.s.</td>
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<tr>
<td>7th</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/Post</td>
<td>60</td>
<td>1.71; 1.42</td>
<td>4.06; 2.38</td>
<td>-10.79</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Pre/Repeated Post</td>
<td>60</td>
<td>1.71; 1.42</td>
<td>4.43; 2.05</td>
<td>-13.65</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Post/Repeated Post</td>
<td>60</td>
<td>4.06; 2.38</td>
<td>4.43; 2.05</td>
<td>-1.89</td>
<td>n.s.</td>
<td></td>
</tr>
</tbody>
</table>

Note: (4 items, 0-2 rubric score, 0-8 range). n.s. denotes a comparison that is not statistically significant.
Table 2: Pre and Post-test Means for Knowledge Items by Grade Level

<table>
<thead>
<tr>
<th>Item</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 7</th>
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</thead>
<tbody>
<tr>
<td>Pre1</td>
<td>.59; .57</td>
<td>.79; .41</td>
<td>.77; .56</td>
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<tr>
<td>Pre2</td>
<td>.88; .32</td>
<td>.38; .52</td>
<td>.23; .50</td>
</tr>
<tr>
<td>Pre3</td>
<td>.81; .52</td>
<td>.18; .38</td>
<td>.30; .49</td>
</tr>
<tr>
<td>Pre4</td>
<td>.96; .50</td>
<td>.07; .25</td>
<td>.42; .53</td>
</tr>
<tr>
<td>Pre5</td>
<td>.16; .41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post1</td>
<td>1.79; .53</td>
<td>1.26; .51</td>
<td>1.23; .59</td>
</tr>
<tr>
<td>Post2</td>
<td>.88; .40</td>
<td>1.02; .61</td>
<td>1.00; .86</td>
</tr>
<tr>
<td>Post3</td>
<td>1.51; .61</td>
<td>.93; .68</td>
<td>.83; .84</td>
</tr>
<tr>
<td>Post4</td>
<td>1.63; .48</td>
<td>1.36; .68</td>
<td>1.00; .71</td>
</tr>
<tr>
<td>Post5</td>
<td></td>
<td>1.20; .68</td>
<td></td>
</tr>
<tr>
<td>Repeated Post1</td>
<td>1.94; .29</td>
<td>1.16; .55</td>
<td>1.35; 54</td>
</tr>
<tr>
<td>Repeated Post2</td>
<td>.87; .38</td>
<td>1.08; .52</td>
<td>1.03; .90</td>
</tr>
<tr>
<td>Repeated Post3</td>
<td>1.87; .34</td>
<td>.72; .55</td>
<td>1.02; 65</td>
</tr>
<tr>
<td>Repeated Post4</td>
<td>1.79; .40</td>
<td>1.10; .70</td>
<td>1.03; .68</td>
</tr>
<tr>
<td>Repeated Post5</td>
<td></td>
<td>1.10; .50</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3: Pre- and Post and Repeated Post-test Composite Attitude Scores by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pre-test Mean, Standard Deviation, and Reliability</th>
<th>Post-test Mean, Standard Deviation, and Reliability</th>
<th>Repeated Post-test Mean, Standard Deviation, and Reliability</th>
<th>t value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; N = 68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Pre/Post</td>
<td>4.19; .57 (.70)</td>
<td>4.68; .42 (.86)</td>
<td>-7.67</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Specific Post/RP</td>
<td>4.19; .57 (.70)</td>
<td>4.59; .51 (.89)</td>
<td>-5.87</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>General Post/RP</td>
<td>4.68; .42 (.86)</td>
<td>4.59; .51 (.89)</td>
<td>1.98</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; N = 61</td>
<td></td>
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</tr>
<tr>
<td>Specific Pre/Post</td>
<td>4.09; .77 (.81)</td>
<td>4.50; .49 (.85)</td>
<td>-4.37</td>
<td>p &lt; .000</td>
<td></td>
</tr>
<tr>
<td>Specific Post/RP</td>
<td>4.09; .77 (.81)</td>
<td>4.38; .70 (.90)</td>
<td>-2.84</td>
<td>p &lt; .01</td>
<td></td>
</tr>
<tr>
<td>General Post/RP</td>
<td>4.50; .49 (.85)</td>
<td>4.38; .70 (.90)</td>
<td>1.92</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt; N = 60</td>
<td></td>
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</tr>
<tr>
<td>Specific Pre/Post</td>
<td>3.92; .71 (.82)</td>
<td>4.01; .91 (.90)</td>
<td>-.75</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Specific Post/RP</td>
<td>3.92; .71 (.82)</td>
<td>4.11; .75 (.87)</td>
<td>-1.71</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>General Post/RP</td>
<td>4.01; .91 (.90)</td>
<td>4.11; .75 (.87)</td>
<td>-1.30</td>
<td>n.s.</td>
<td></td>
</tr>
</tbody>
</table>

Note: n.s. denotes a test that is not statistically significant.
References


Appendix A: Forever Earth Post-Assessment: 5th Grade

1. Which of these fish are native to Lake Mead? Which are non-native to Lake Mead? Draw a line from each fish to the correct circle.

   Striped Bass  NATIVE FISH  Colorado Pikeminnow
   Channel Catfish  Bluegill
   Razorback Sucker  NON-NATIVE FISH  Common Carp

2. Why did the razorback sucker become endangered?

   [Write your answer here]

3. How do the striped bass and other non-native species affect the razorback sucker in Lake Mead?

   [Write your answer here]

4. What are the habitat needs of the razorback sucker?

   [Write your answer here]

5. What did you learn about the fish in Lake Mead?

   [Write your answer here]
## Appendix B: Fourth Grade Attitude Assessment (Post)

1. I would tell my friends to do this program on the Forever Earth Floating Classroom.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

2. Learning about water at Lake Mead was very interesting to me.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

3. The Forever Earth activities were fun.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

4. I would like to do another Forever Earth program.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

5. I learned how important Lake Mead is to plants, animals, and people.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

6. I learned important things today about the water.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

7. I learned how people can use Lake Mead without hurting it.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1

8. Because of what I learned today, I think it’s important to take care of Lake Mead.
   - Strongly agree: 5
   - Agree: 4
   - Not Sure: 3
   - Disagree: 2
   - Strongly Disagree: 1
Appendix C: Performance Rubric: Forever Earth – Finicky Fish Finish Last (5th grade)

<table>
<thead>
<tr>
<th>Participant Name</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Demonstrates Skill</td>
<td>Does not Demonstrate Skill</td>
<td>Demonstrates Skill</td>
</tr>
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</table>
Appendix D: Scoring Guide

Forever Earth Assessment: 4th Grade Scoring Guide

1. Describe what happens when Lake Mead’s water is used by people by putting these steps in order from 1 through 6. Write the number on the line in each circle.

   1. **START HERE!**
   Lake Mead

   2. **Las Vegas Wash**
   (A)

   5. **Wash clothes**
   (D)

   3. **Wash clothes**
   (D)

   4. **Sewage Treatment Plant**
   (C)

   6. **END HERE!**
   Lake Mead

   More complete: 2 points
   - Response has 3-4 items in the correct order

   Partial complete: 1 point
   - Response has 1-2 items in the correct order

   Less complete: 0 points
   - Response has no items in the correct order

2. How is the water from Las Vegas Wash different from water already in the lake? Answer “yes” or “no” to the following questions.

   _Yes___ Would one water sample be clearer than the other sample?
   _No___ Would the plankton be different?

   More complete: 2 points
   - Response has both items answered correctly

   Partial complete: 1 point
   - Response has one item answered correctly

   Less Complete: 0 points
   - Response has neither item answered correctly

3. List some of the reasons why the water is so low in Lake Mead

   More complete: 2 points
   - Response has 2 correct responses and no more than 1 incorrect answer
     - People have used the water for different things
- Evaporation
- Drought

Partial complete: 1 point
- Response must include one correct positive item

Less complete: 0 points
- Response does not include any correct items
  - The dam has a leak
  - Pollution

4. What can you do to save and protect the water in Lake Mead?

<table>
<thead>
<tr>
<th>More complete: 2 points</th>
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</thead>
<tbody>
<tr>
<td>- Response includes two correct answers</td>
</tr>
<tr>
<td>- Take shorter showers</td>
</tr>
<tr>
<td>- Turn off the tap when brushing teeth</td>
</tr>
<tr>
<td>- Don't litter</td>
</tr>
<tr>
<td>- Only use what you need</td>
</tr>
<tr>
<td>- Use less water</td>
</tr>
<tr>
<td>- Recycle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partial complete: 1 point</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Response includes one correct answer or one less-specific answer</td>
</tr>
<tr>
<td>- Don't waste water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Less complete: 0 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No information or incorrect information provided</td>
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</table>
Discover Mojave
Outdoor World Schedule
Quarter 1, Year 4
<table>
<thead>
<tr>
<th>DATE</th>
<th>GROUP</th>
<th># of PARTICIPANTS</th>
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<tr>
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<td>Camp Lee Canyon, Spring Mountains NRA</td>
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<tr>
<td>Date</td>
<td>Location</td>
<td>Group Size</td>
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<td>9</td>
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<tr>
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<td>Spring Mountains NRA</td>
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<tr>
<td>Friday, September 24</td>
<td>Paradise Recreation Center, Clark County Parks and Recreation</td>
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<td>Geocaching – Family Activity</td>
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<td>Science and Art Adventure</td>
<td>Forever Earth – Lake Mead NRA</td>
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<td>TOTALS for Year 4 (to date)</td>
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<td>26 Events</td>
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</tbody>
</table>
Assessing Discover Mojave Outdoor World Program
Year 6 of Program
Final Report

Assessing “Discover Mojave”
Year Six

Submitted by:

Lori Olafson
Gregg Schraw
Michelle Weibel
Department of Educational Psychology
UNLV
Executive Summary

Discover Mojave Outdoor World is a hands-on outdoor recreation program for urban, economically disadvantaged youth. In Year One of the program, knowledge, attitude, and performance assessments were developed to document the effectiveness of program events over the duration of the program. These assessments were completed by program participants in subsequent years. Findings from Years One through Five revealed that participant knowledge, attitudes, and performance increased substantially as a result of participating in the outdoor recreation events. Results from previous years have also demonstrated that teachers and parents had very favorable attitudes towards the program. The assessment plan was implemented again in Year Six, and findings continued to demonstrate that participant’s knowledge, attitudes, and skills increased as a result of participation in program events. In Year Six parents’ and teachers’ perceptions of the program were not assessed.
Introduction

The Public Lands Institute (PLI) at the University of Nevada, Las Vegas (UNLV) manages an outdoor recreational learning program for southern Nevada children. Discover Mojave Outdoor World is a recreation program for urban, economically disadvantaged youth that was originally designed to introduce them to outdoor recreation, environmental education, fishing and boating, and aquatic resource management. The intent of this program is to encourage and facilitate lifelong recreation on public lands among lower socioeconomic, ethnically diverse school-age children. UNLV’s role is the implementation and administration of the program on behalf of the federal agencies that manage the public lands surrounding Clark County – Bureau of Land Management; National Park Service; U.S. Fish and Wildlife Service; and U.S. Forest Service.

In Year One of the program, our research team became responsible for developing an assessment plan in order to document the effectiveness of program events over the duration of the program. In Years Two through Five, minor modifications were made to the assessment program. This report provides results of the analysis based on completed assessments in Year Six.

Context

Discover Mojave Outdoor World evolved as a pilot program based on the ideals found within the national Wonderful Outdoor World (WOW) program. The national program is based on the premise that participation in activities in natural settings impacts children in several ways: 1) provides a positive outlet for the alleviation of stress, 2) promotes physical exercise and activity, 3) stimulates an appreciation of and connection to nature, and 4) encourages the responsible use of recreational areas. Providing recreational activities for children who lack such opportunities promotes equitable access and utilization of public recreational venues.

In Year One, Public Lands Institute staff developed five half-day events based on educational themes formed by an environmental educational committee comprised of federal agency and community members. The events were linked to these themes as broad-based outcomes for participants as a result of attendance. The events were recreational in nature and comprised an educational component. The events were as follows: (1) Wild Bird Safari, (2) Fun with Fishing, (3) Kids in Kayaks, (4), Adventures in Art, and (5) Cool Canoeing. In addition, curricular modules created for each event correlated the events to content standards, life skills, technological sites and resources, and literature. The curricular modules divided events into three sessions; 1) an awareness session to set the baseline of knowledge, 2) an activity session and, 3) a debriefing session which served as the culminating activity.

Each event provided participants with an opportunity to visit a local outdoor park or public land site. In the first event, children were taught how to bird watch at a local park and then transfer these skills to the local wetlands. The second event enabled children to participate in a “casting clinic” while learning about different kinds of fish and their habitats. In events three and five, children were given the opportunity to experience kayaking or canoeing at local parks or Lake Mead. Event four utilized art and watercolors and other media to teach participants about geological landforms and other phenomena. All events were designed with the student demographics in mind. Each event was meant to be transferable and accessible to the children
that participated in them. Further, children were given “make and take” items to serve as a way of remembering the experience.

As the program has continued to expand, new events have been added and others have been revised. In Year Three, for example, rock climbing was piloted as a new activity. This activity takes place at an indoor rock climbing center. Participants are given a brief lesson by a staff member from the center teaching them about safety, how to climb, and how to belay. Once participants are given approval by the staff, they are then allowed full access to all climbing walls within the center. The assessment for rock climbing was developed in Year Three and piloted in Spring 2007. Rock climbing activities were subsequently assessed in Year Four.

With respect to modifications to events implemented, canoeing continues be an activity that is available but has not been not scheduled during Years Three to Six. In another modification, the Adventures in Art activity is sometimes combined with science to create a culminating activity called Science and Art Adventure. The Science and Art Adventure takes place on Forever Earth, a floating classroom and research laboratory on Lake Mead. Participants engage in different types of water sampling to learn about water in Lake Mead and then complete art activities. Art activities include gyotaku (an old Japanese form of fish identification) and water painting of landscapes. The Art and Science Adventure is not assessed due to the subjective nature of art assessment.

A new activity developed in Year Four consisted of an overnight camping trip at Walking Box Ranch, managed by PLI on behalf of the Bureau of Land Management. Participants learned how to set up their tents in groups of 3-4, assist with cooking and clean-up, and participate in a nature walk. This activity was not assessed in Year Four, but was assessed in Years Five and Six. In Year Six, camping was assessed in Fall 2009.

In Year Five several new activities were developed but not assessed. These activities included Hiking, Outdoor Education Obstacle Course, Introduction to Orienteering, and Geocaching. In Year Six, winter activities at the Spring Mountains National Recreation Area were developed but not assessed. However, geocaching was assessed in Year Six.

Instrument Development

Year One

In Year One, we developed assessments for three areas of growth, including knowledge, attitudes, and skill performance for each of the five half-day events. Assessments for each of the five events included knowledge questions related to the specific event (e.g., What did you learn about watching birds?) and five attitude items (e.g., I would like to show my friends how to watch birds). The skill performance assessment, in the form of a checklist completed by the event facilitator, measured whether or not the child demonstrated a particular skill (e.g., Participant uses binoculars to find and focus on a bird).

Year Two

In Year Two, the assessment plan was revised in a number of ways. An adjustment was made related to assessing attitudes. In Year One general attitude questions were asked during each event (e.g., I learned how to take better care of the land). We found that general attitudes did not change over the course of participation in the program and considered eliminating these questions. However, it was decided instead to ask the general attitude questions at the
beginning and the end of the program (when youth participated in multiple events), and not after each event.

Two additional assessment tools were created for the Environmental Science Club participants in Year Two. On the Teacher Rating Scale, teachers rated participants’ performance in the science classroom before the program began and at its conclusion. Participants were rated on six dimensions using a Likert-type scale. Dimensions included knowledge about science concepts; completion of science homework; behavior in science class; interest in learning about science; confidence in science class; and performance in science activities. A second new tool, the Parent Rating Scale, asked parents to rate their children on the same six dimensions as the Teacher Rating Scale at the conclusion of the program.

The final revision that was made to the Year Two assessment concerned the interviews. Given concerns about the lack of standardization related to interviewing participants, a structured interview protocol was developed.

The assessment program in Year Two included five data collection components:

3. the pre and post test measures of knowledge, attitudes, and skills
4. field journals completed by Environmental Science Club participants
5. the Teacher Rating Scale completed by science teachers
6. the Parent Rating Scale completed by parents
7. individual interviews conducted with participants at the conclusion of the program.

Year Three

Three changes were made to the assessment program in Year Three. Two of the changes were suggested as recommendations set forth in the final report for Year Two, and these changes were discussed and agreed upon by program staff and the research team. First, the field journals completed by the Environmental Science Club participants were eliminated as a data source for program effectiveness. Given the limited English proficiency of the participants, paper-and-pencil tasks that required expressive writing skills were not successfully completed by the majority of the participants. Although participants continue to be provided with field journals, these are no longer analyzed.

The second change was the implementation of individual interviews of teachers who taught science in the classroom setting to Environmental Science Club participants. In Year Two, we received anecdotal information from teachers indicating they had observed significant changes in behavior and attitudes of Environmental Science Club participants. A structured interview protocol was developed in order to more formally document teachers’ observations.

The final change to the assessment program was the development of an additional assessment. Program staff developed a new Rock Climbing program event. This event was successfully piloted in Fall, 2006. Knowledge, skills, and attitudes for this event were assessed in Spring, 2007 with an assessment that was structured similarly to existing assessments.

The assessment program in Year Three included five data collection components:

1. the pre and post test measures of knowledge, attitudes, and skills
2. the Teacher Rating Scale completed by science teachers
3. the Parent Rating Scale completed by parents
4. individual interviews conducted with participants at the conclusion of the program
5. individual interviews conducted with science teachers.

Year Four
The assessment program in Year Four was not modified. Year Four’s assessment plan included the same five data collection components as in Year Three:

1. the pre and post test measures of knowledge, attitudes, and skills
2. the Teacher Rating Scale completed by science teachers
3. the Parent Rating Scale completed by parents
4. individual interviews conducted with participants at the conclusion of the program
5. individual interviews conducted with classroom teachers.

Year Five
The assessment program in Year Five was modified slightly. First, individual interviews with participants and classroom teachers were not conducted. In previous years results have been remarkably consistent with respect to interview data, with all participants indicating positive attitudes towards the Environmental Science Club. Secondly, the Parent Rating Scale was not completed in Year Five. Previous years have shown a limited response rate in spite of concerted efforts by PLI staff. The assessment plan for Year Five included two data collection components similar to assessments in previous years:

1. the pre and post test measures of participant knowledge, attitudes, and skills
2. the Teacher Rating Scale completed by science teachers.

Year Six
The assessment program in Year Six was further streamlined. The Teacher Rating Scale completed by science teachers was not included. This decision was made for two reasons. First, the response rate from teachers has been low, and secondly, responses from teachers have been consistently favorable over the past several years. In Year Six, the following data was collected from participants: pre and post-test measures of participant knowledge, attitudes, and skills.

Implementation
As in previous years, the assessments in Year Six were conducted over time (i.e., pre and post-intervention) to determine the effectiveness of these events in having an impact on student knowledge, attitudes, and performance about the environment. In each semester (Fall, 2009 and Spring, 2010) there were two distinct groups of participants for the events of Discover Mojave Outdoor World. One group consists of fifth graders from an Environment Science Club. The other distinct group of participant comes from a range of organizations. In Year Six, data was collected only from the Environmental Science Club.

In Fall, 2009 there were eleven participants from the Environmental Science Club. The Environmental Science Club was an after-school program for fifth graders at an at-risk professional development school, located in the east region of the school district. The club meetings were organized by the PLI project manager and met after school to participate in the recreational events. A classroom presentation by the PLI Project Manager introduced fifth-grade participants to the Environmental Science Club. This club served as the venue of access for participants to the recreational events. Participants were initially asked to complete an application in order to become a member of the Environmental Science Club. These
applications asked such questions as, Why do you want to be a member of this club? What do you like to study about science? Why do you think it is important for kids to learn about their environment?

Fifth graders in the Environmental Science Club participated in five events in the Fall, 2009 semester. In the first event, children went kayaking at Lake Mead. In the second event, children went rock climbing at the Nevada Climbing Center. The third event was geocaching at Sunset Park. In this event, participants are provided with handheld GPS units and coordinates. Participants must find waypoints, read information about the plants and animals of the Mojave Desert, and then answer a question. During the fourth event participants were taught how to bird watch at a local park and then transferred these skills to the local wetlands. The fifth and final event consisted of an overnight camping trip at Red Rock Canyon National Conservation Area.

The Environmental Science Club in the Spring, 2010 semester consisted of 11 participants. These students participated in four events, including bird watching, rock climbing, geocaching, and kayaking. They did not complete their scheduled camping trip in May, 2010 because of lack of participation. See Table 1 for a summary of events.

In addition to the Environmental Science Club participants, nearly 1400 people from a number of different organizations participated in a variety of events (see Table 2). We refer to these programs as Alternate Environments throughout the report, and they included participants from diverse groups such as community and cultural centers (Winchester Cultural Center); recreation centers and programs (North Las Vegas Parks and Recreation, Valley View Recreation Center, Las Vegas City Parks and Recreation, programs from Clark County Parks and Recreation such as the RecMobile and Camp Lee Canyon); youth care facilities; boy scout troops; after school programs from two middle schools; and classes from 13 schools in the school district (three elementary schools, seven middle schools, and three high schools). One event, a free fishing and art adventure day, was open to the general public and drew over 400 participants. Unlike Environmental Science Club participants, participants from Alternate Environments experience the event as a discrete, stand-alone activity. Events for Alternate Environments in Year Six included geocaching, fishing, art adventure, nature activities, kayaking, rock climbing, hiking, camping, bird watching, and snow activities. These events were not assessed. Typically, when events are conducted as part of a larger multi-agency experience, they are not assessed.

Analysis

The knowledge measure, where participants responded to open-ended questions, was analyzed using content analysis (Berg, 2001), in which student responses were coded in three categories (no knowledge, partial knowledge, and more complete knowledge). For example, when a student responded to the prompt “What do you know about geocaching” by writing “I don’t know nothing” this response was coded as no knowledge. Partial knowledge occurred when a student responded with one correct or very general statement (e.g., “You find and go places”). An example of a student response that was coded as more complete knowledge (more than one correct statement) in response to the prompt “What did you learn about geocaching?” was “You walk a lot with GPS units and see lots of trees in public lands. GPS stands for Global Positioning System.”

We calculated the mean across the three knowledge categories (no knowledge, partial knowledge, and more complete knowledge) for all pre- and post- assessments. A no
knowledge response was assigned a 0; a partial response was assigned a 1; and a more complete response was assigned a 2. The analysis of the attitude scales compared pretest and posttest ratings by participants in the events. The performance rubrics were summarized for each event by calculating how many of the participants demonstrated all skills, most skills, or some skills.

Results

Knowledge and Skills

Pre- and post-test knowledge scores are shown in Table 3. Individual scores ranged from 0 to 2. The camping and geocaching activities used one score for a total possible score of 0-2.

Statistically significant gains occurred within both activities. Scores were treated as interval data and compared using paired samples t-tests between post-test and pre-test composite scores. A positive t-score indicates that the post-test mean was higher than the pre-test mean. The increase was between one and two standard deviation units, which is considered a very large effect size. These differences indicate substantial increase due to the intervention.

Table 4 shows the proportion of scores at each level of understanding for each activity. Table 4 reveals that most participants lacked relevant knowledge or possessed partial knowledge prior to the events. In contrast, the majority of participants possessed complete knowledge after the events.

Table 4 also shows all participants could demonstrate all performance skills following the camping event.

Attitudes

Participant Rating Scale

Participants rated each event before and after their participation. Participants made 5-point ratings on five questions; thus, scores ranged from 5 to 25, where 25 represented the most favorable attitude toward the event. Results for each event are shown in Table 5. Dependent sample t-tests were conducted on each of the four events using a two-tail test.

Table 5 presents means, standard deviations, and reliabilities using Cronbach’s alpha for each of the attitude scales. Table 5 reveals that attitudes were very favorable at pre-test, with a mean between 4.4 and 5.0 for each event. Attitudes did not increase significantly for either activity, though they increased slightly for geocaching.

These scores indicate that attitudes were close to the upper ceiling for both events at pretest and posttest; thus, while pre-posttest scores did not differ, attitudes were extremely positive at both time periods.
Conclusions

The purpose of this report was to provide results from the assessment program of Discover Mojave Outdoor World in Year Six of its implementation. Revisions to the assessment program were described. As in Years One through Six we assessed knowledge, attitudes, and performance for each student using the assessment tools that were developed previously. We did not collect data from parents or teachers.

In Year Six, the scope of the program continued to show increases in terms of number of events offered and the number of participants. In particular, the number of participants in the Alternate Environments has increased, with close to 1400 people completing events offered by Discover Mojave Outdoor World.

These findings support the following conclusions. First, the assessments are capable of assessing different measures of growth from the beginning to the end of the program in a comprehensive and reliable manner. Secondly, the program events continue to have a significant impact on participants’ knowledge and skills, based on growth from pre- to post-intervention assessments. Overall, results from the assessments showed that program events have a significant and positive impact on participant’s knowledge, skills, and attitudes.

Recommendations

Findings from six years of collected data suggest that the Discover Mojave Outdoor World program is strong across all instructional interventions. No major changes are necessary in our opinion. However, we offer the following recommendations to further strengthen the assessment program.

- Continue to assess participants’ knowledge, skills, and attitudes.
- Develop assessments for the new events, such as orienteering.
- Alternate Environments participation continues to increase, but none of these events were assessed in Year Six.
- Consider developing ways to collect data from program staff affiliated with the alternate environments, such as interviews and short, open-ended surveys.
- Consider the developing and implementing long term follow-up assessments of program participants (children/youth and teachers/staff).
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<th>Assessment</th>
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<td>Kayaking</td>
<td>Lake Mead</td>
<td>no</td>
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<tr>
<td>Oct. 14</td>
<td>Rock Climbing</td>
<td>Nevada Indoor Climbing Center</td>
<td>no</td>
</tr>
<tr>
<td>Oct. 28</td>
<td>Geocaching</td>
<td>Sunset Park</td>
<td>no</td>
</tr>
<tr>
<td>Nov. 4</td>
<td>Birdwatching</td>
<td>Sunset Park</td>
<td>no</td>
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<td>Nov. 7-8</td>
<td>Camping</td>
<td>Red Rock Canyon</td>
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<td>April 8</td>
<td>Birdwatching</td>
<td>Sunset Park</td>
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<tr>
<td>April 15</td>
<td>Rock Climbing</td>
<td>Nevada Indoor Climbing Center</td>
<td>no</td>
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<td>April 22</td>
<td>Geocaching</td>
<td>Sunset Park</td>
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<td>April 29</td>
<td>Kayaking</td>
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Table 2: Alternate Environment Activities

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<tr>
<td>June 10</td>
<td>Troop 143, Boy Scouts</td>
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</tr>
<tr>
<td>June 13</td>
<td>Troop 143, Boy Scouts</td>
<td></td>
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<td>July 10</td>
<td>Valley View Recreation Center</td>
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<td>July 20</td>
<td>Camp Lee Canyon, Clark County Parks and Recreation</td>
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<tr>
<td>Nov. 10</td>
<td>Neighborhood Recreation Center, NLV</td>
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<td>Nov. 16</td>
<td>Fertitta MS Outdoor Adventure Club</td>
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<td>Gibson Middle School</td>
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<td>Faiss MS</td>
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<td>West Prep Leadership Program</td>
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<td>Westcare Boys</td>
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<td>Location and Details</td>
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<td>JD Smith MS Afternoon All Stars</td>
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Table 3: Student Pre- and Posttest Knowledge

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<th>Activity</th>
<th>Sample Size</th>
<th>Pre-test Mean and Standard Deviation</th>
<th>Post-test Mean and Standard Deviation</th>
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<th>Significance</th>
<th>Effect Size</th>
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<tbody>
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<td>8</td>
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<td>1.50; .53</td>
<td>-7.93</td>
<td><em>p &lt; .001</em></td>
<td>2.80</td>
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<tr>
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<td>0.20; .42</td>
<td>1.70; .48</td>
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Table 4: Summary of Knowledge and Performance Skills for Two Events by Knowledge-Level

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<th>Event</th>
<th>Participants</th>
<th>Knowledge Pre (%)</th>
<th>Knowledge Post (%)</th>
<th>Performance (%)</th>
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<td>50</td>
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<td>80</td>
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<td>61</td>
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Table 5: Student Pre- and Posttest Attitudes

<table>
<thead>
<tr>
<th>Activity</th>
<th>Sample Size</th>
<th>Pre-test Mean, Standard Deviation, and Scale Reliability</th>
<th>Post-test Mean, Standard Deviation, and Scale Reliability</th>
<th>t value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camping</td>
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<td>4.92; .10 (.96)</td>
<td>4.72; .55 (.95)</td>
<td>-1.08</td>
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<td>4.44; .35 (.73)</td>
<td>4.58; .41 (.77)</td>
<td>1.19</td>
<td>n.s.</td>
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</tbody>
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Note: n.s. = not significant
References