

# Sea to Shining Sea (StSS) Live Interactive Virtual Explorations (LIVE)

SOUTHERN CALIFORNIA RESEARCH LEARNING CENTER

## StSS LIVE

Hans-Werner Braun & Kimberly Bruch, UC - San Diego  
Susan Teel, Southern CA Research Learning Center

### Introduction

The Sea to Shining Sea (StSS) Live Interactive Virtual Explorations (LIVE) project team is working to meet the September 2009 recommendations of the National Park Service Second Century, which recommends "...that the Park Service and its educational partners ensure access to current and leading-edge technology and media to facilitate park learning. As easily as we now make a phone call, every classroom in America should be able to conduct video conferences with park rangers, natural and cultural resources staff, and other experts, to learn about issues that are important to the parks, and how these issues relate to local, national, and global concerns".

### StSS LIVE Backpack System

An inexpensive backpack system allows park interpreters and scientists to easily move about in the field while broadcasting LIVE distance education programs. The first phase of the StSS LIVE project involved the development of an instruction manual for the backpack system including step-by-step instructions.

*Pala Native American youth participate in an StSS LIVE activity between their rural reservation learning center and the Cabrillo National Monument intertidal area. One student attempts to reach out and touch a hermit crab as it scurries along the crevices of a rock*

*Photo Credit: HPWREN*



The StSS LIVE instruction manual was developed in conjunction with the National Science Foundation funded High Performance Wireless Research and Education Network (HPWREN) and is online at <http://seatoshiningsea.org/images/manual1.pdf>. The team is now updating the manual to include the many ways in which the LIVE backpack system can be used. To date, a range of LIVE broadcasts have been conducted by NPS staff including superintendent presentations to audiences at professional conferences, park scientists to classrooms across the country, and interpreters to audiences in school and museum auditoriums.

Phase Two of the project encompassed the development of a web portal including project news, real-time data, and contact information. The portal is located at <http://seatoshiningsea.org> and <http://seatoshiningsea.net>; efforts are currently focused on improving and maintaining the web portal.



*A National Park Service ranger talks with StSS LIVE participants about the Cabrillo National Monument's intertidal area.*

*Photo Credit: HPWREN*

### LIVE Workshops and Training

Phase Three of the project focused on an array of training sessions. The November 2008 Technology Transfer workshop targeted National Park Service science and information technology staff who learned how to plan and install a wireless bubble to support LIVE programs. They also mastered assembly and operation of the LIVE backpack system.

At the George Wright Society (GWS) conference in March 2009, National Park Service scientists and resource managers viewed a LIVE demonstration, were exposed to the basics of wireless communication, and learned to assemble and operate the LIVE backpacks.

At National Association for Interpretation (NAI) in November 2009, interpreters and educators toured five National Parks via LIVE and then completed a hands-on session where they assembled backpacks and conducted a mini-LIVE program.

In 2010, National Park Service staff will be participating in a safety training conducted by HPWREN researchers while an additional training session will focus on K-12 teachers and how they can use the LIVE backpack system in conjunction with classroom curriculum.

Phase Four focused on several objectives including development of relationships with new audience groups interested in StSS LIVE participation. Researchers also made contacts with many science site collaborators including more than ten National Park Service units, four Research Learning Centers, ten K-12 schools, and three science museums. Specifically, the Marine Science Magnet Program at South Broward High School has participated in StSS from the start by conducting LIVE demos at remote locations throughout Florida, broadcasting programs to conferences and training sessions.

The primary objective of Phase Four focused on twenty StSS LIVE events, which took place in 2008-2010. The activities encompassed broadcasts between collaborative National Parks and education sites gained during the first part of Phase Four such as rural schools, Native American reservations, museums, and professional conferences. The final objective of Phase Four was the development of an evaluation instrument, which took place in conjunction with the Education Department at the Reuben H. Fleet Science Center.

### Evaluation Methods

The evaluation surveys included Likert-scale questions (Strongly Agree, Agree, No Opinion, Disagree, Strongly Disagree) and assessed perceptions of the following:

- The video quality was good.
- The audio quality was good.
- The handouts were helpful.
- The information was presented effectively by the presenters
- I learned a lot from the LIVE activity.
- I would recommend LIVE to others.
- There were sufficient opportunities to interact with presenters.

Open-ended questions included:

- What did you like best about the LIVE activity?
- What did you like the least about the LIVE activity?

The surveys were administered to education site participants of four case studies.

### Results and Discussion

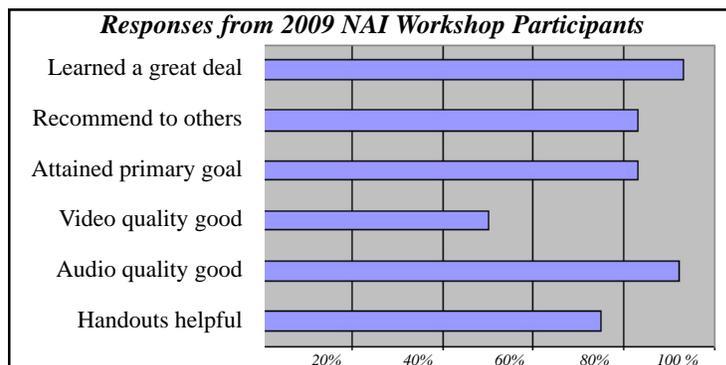
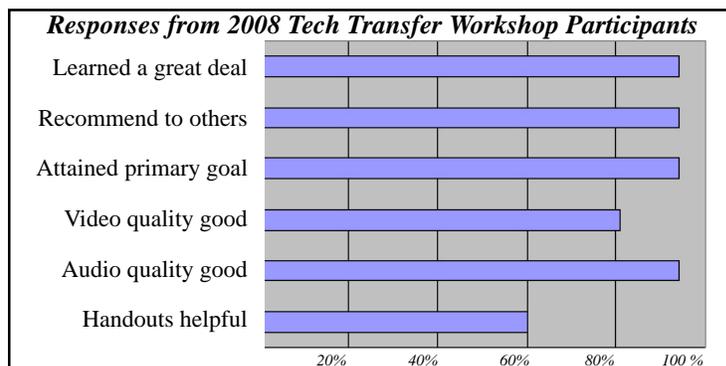
The majority of StSS LIVE survey respondents agree that the video and audio quality are both good, the handouts that accompany the activities are helpful, and that there are sufficient opportunities to interact with the presenter at the remote site. Most of the respondents also agree that they would recommend LIVE to others and that they are more likely to visit the National Park site. Suggestions for improvement include tripod use to improve video quality when zooming into detailed areas such as the tidepools, wind muffle use to improve audio quality when in areas that are frequently windy. Many respondents comment on their interest in visiting the National Park site following the LIVE activity.

Detailed evaluation results are available in a 2009 George Wright Society Conference paper entitled *An Examination of Live Interactive Virtual Explorations at the Cabrillo National Monument in Southern California*, which is available at the following URL:  
<http://hwpwren.ucsd.edu/news/20090331/images/bruch.pdf>.

### Project Contact

Susan Teel, Director, Southern California Research Learning Center, [Susan\\_Teel@nps.gov](mailto:Susan_Teel@nps.gov), 805-370-2332

In addition to administering surveys to StSS LIVE education site participants, data was also gathered from National Park Service employees regarding participation at the two informal training sessions during Phase Three of the project. The tables below summarize LIVE workshop evaluation results.



### Sources

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