

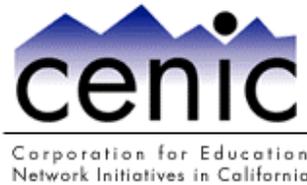


PORTS
Parks Online Resources for Teachers and Students
Distance Learning with California State Parks



Parks Online Resources for Teachers and Students
(PORTS)

- *California State Parks*
- *Digital California Project*
- *California Public Schools*
- *Private Industry*
- *Non-Profit Organizations*



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EXECUTIVE SUMMARY

PORTS is a cooperative venture between the California Department of Parks and Recreation (DPR), the Corporation for Education Network Initiatives in California (CENIC), California public schools, private industry, and non-profit organizations.

PORTS addresses the disparity in access to California State Parks and technology amongst California's school children. It uses a high-speed network (the Digital California Project or DCP) connecting all of California's public schools, to deliver content concerning state parks that is aligned with academic content standards. PORTS bridges the geographic and economic divide that impedes many children from experiencing the values of California State Parks.

PORTS consists of numerous units of study that have been developed by teams of teachers and park employees. These units of study are accessed by schools through two integrated elements:

1) **“On-demand”** multimedia materials concerning state parks and addressing academic content standards presented via the DCP. These materials are available at all times to teachers and students via the PORTS web site (www.ports.parks.ca.gov). The materials include lesson plans, digital pictures, digital video, park maps and brochures, and much more.

2) **“Live Digital Video Lessons”** using video conferencing through which students can interact with park employees, experience park activities, and augment their in-class lessons. Each unit of study contains at least one lesson using video conferencing with park employees.

Typically, County Offices of Education “connect” the parks and schools through the DCP. Individual school districts provide personnel to collaborate with park staff in developing curriculum for each location. Colleges provide expertise, services, interns, and materials. State Parks provides the personnel and supplemental resources for presentations. Non-profit organizations, individuals, and private industry are vital for funding of equipment, services, and personnel.

PORTS proposes to have a series of regional distance learning centers from which PORTS programs can be produced, presented, and managed for the state parks in that region. Some of the video conferencing lessons will be presented from the centers using “green screen” technology, while others will be presented directly from the parks.

Currently, the facility at Sea Cliff State Beach near Santa Cruz is the only regional distance learning center in operation. Borrego Springs, Crystal Cove, Sacramento, Marin, and Columbia all possess several elements that make them candidates for additional centers.

INTRODUCTION

The purpose of PORTS is to further the mission of California State Parks and to improve the education of California school children by using the power of the Digital California Project network. PORTS allows children in urban areas and other locales to experience the grandness of their state parks, while addressing academic content standards. Often these children, due to their physical and cultural environments, are unaware of the values and importance of the California State Park System.

Economically disadvantaged children are able to experience parks hundreds of miles from their homes in areas rarely visited by their families. The inspiring backdrops of our state parks buttress the lessons of history, visual and performing arts, science, math, and English. Through an integrated program using multiple technological approaches, PORTS brings State Parks to the classroom.

OVERVIEW

The “**On-Demand**” element of PORTS will provide a library of on-line, park specific materials including lesson plans and multimedia interpretive presentations. These products will be available to students and teachers at all times. Many DPR materials such as park brochures, costuming guides, park histories, photo archives, maps, and training materials will be available. Projects developed by students participating in PORTS will be available for future classes to access. Other educational publications produced by various entities will also be accessible.

These materials address specific content standards and use a variety of technological techniques to deliver enjoyable, relevant, organized, and thematic material to the students. Educational professionals and park interpreters develop the lesson plans and other curricular materials for each location.

The eventual library of presentations will address all grade levels and content areas. The chart in index “A” describes a few of the programming possibilities for science and history/social science content standards in grades four through eight. Currently available programs and materials can be viewed at http://www.ports.parks.ca.gov/default.asp?page_id=23007 .

“Live Digital Video Lessons”¹ are the hub of the PORTS program. Each live digital video session is a lesson within a unit of study. These lessons use video conferencing. During the lessons there is “real-time”, two-way, audio and video. This allows the students and the rangers to interact much as though the students were in the park. Lifeguards in scuba gear beneath Southern California waters talk directly to students in classrooms anywhere in the state. Docents in character and costume, portraying Gold Rush-era Californians, have dialogs with children in classrooms of the inner city. Guides at the State Capitol Museum are able to give tours of the Capitol to students that are unable to come to Sacramento. Legislators at the Capitol are able to “visit” schools in their district as the students study the legislative process with state park employees.

These programs can stand on their own, enhancing educational efforts and bringing relevancy to California State Parks for large numbers of children otherwise unaware of our parks. They also serve as a catalyst for future park visits, igniting a desire in children to experience personally a resource with which they previously were unacquainted. Conversely, these programs can lessen the impact on DPR locations that are heavily used, such as Southern California tide pool areas. Many parks turn away school children each year because they are “full” and unable to accommodate any further students. These programs increase the numbers of children served by DPR while also helping to preserve the resources of the parks.

All digital video sessions can be recorded and stored for access by students and teachers in an “on-demand” manner. This results in an ever-growing library of materials that teachers can draw upon at their convenience to supplement their efforts at teaching a great variety of content standards. The technology afforded by the DCP will make these materials available nearly instantaneously at any time.

¹ Index “B” consists of several diagrams depicting various digital video configurations DPR uses.

Recent advances in digital video equipment and the implementation of the DCP provide the ability to connect schools and parks in a manner never before possible. State Park employees at far distant and remote locations like the Anza-Borrego Desert, High Sierra parks or isolated North Coast redwood parks can be connected “live” to classrooms throughout the state. State Park scuba divers, using specially designed cameras and microphones can communicate directly with children in their classrooms as they explore our underwater parks. Living history demonstrations performed by docents in historic units of the park system can involve children anywhere in the state as active participants. Archeological projects, wildlife studies, off-road vehicle activities, artifact storage facilities, Native American study sites and a multitude of other state park activities can be shared with school children in an interactive and spellbinding manner.

Due to the immense size of California and financial considerations, many schools are unable to visit state parks beyond their immediate area. At the same time, many schools are unable to visit parks close to them because the parks are full and unable to accommodate any more school groups. Consequently, State Park units like the California State Capitol Museum are used by only a small percentage of California’s school children. The important stories of California’s legislative process and its rich history remain untold to hundreds of thousands of our future voters. Using video conferencing sessions, we can bring these stories to life for California’s children.

PROPOSAL

The Participants

The schools used for the project will initially come from districts that have provided educators to develop curriculum for the project. Schools are the participants in the programs they are helping to develop. Then the schools participate in units of study developed at other locations. Schools in large urban areas with children that have been traditionally underserved by state parks will also be early recipients of the program.

The Program

The individual state parks and school districts involved in the program have a great deal of “ownership” of the program. Hence, determination of which themes and content standards are covered will be largely a local decision. The primary and secondary themes identified for each park unit by their general plans are important but do not preclude other areas of focus.

Staff Development

For the students to realize the full potential of this program, the school and park staffs must be wholly able use the program elements as valuable teaching tools. To accomplish this, effective staff development must take place.

Park staff must be trained in the technical as well as artistic uses of the video conferencing equipment. They must learn to adapt their presentation techniques to the limitations and capabilities of this new mode of communication. The ability to use multiple modalities of information delivery within a video conferencing environment is critical to the success of the presentations. Staff development will be essential to the park employee’s ability to present engaging and effective presentations.

The effective management of the classroom environment during these presentations is equally important. Classroom teachers must be proficient in the use of all major elements of this program. Utilization of all the elements of this program, including the equipment necessary for the “live” presentations, must be adequately addressed through a staff development program. Ideally, this program is integrated into the entire learning process for the children. Adequate staff development ensures that this happens.

Evaluation and Measurement of Success

To ensure that the strengths and weaknesses of this program are effectively assessed and that meaningful recommendations are made for the future of the program, an independent and ongoing evaluation process should be implemented. This process will include an evaluation of both the equipment and methods involved in the project. When considering the measurement of success for the program, all stakeholders will be included. That is, the level of success for students, teachers, parks and benefactors needs to be considered.

An organization such as WestEd, that is familiar with concerns of both the educational system and the State Park System, would be an ideal entity to conduct the evaluation and measurement of success exercises. Many participating colleges may also be able provide

this service. These endeavors will contain continual feed-back for the initial project while it is in progress, and recommendations concerning the possible future continuance or expansion of the project.

FUNDING NEEDS
BUDGET OUTLINE FOR PORTS 2004/2005
(For Each Regional Video Conferencing Center)

Personnel

(\$50,000)

One quarter teacher PY, One quarter IT PY, one half interpreter PY, and \$5,000 for equipment and services.

On-demand materials will consist of on-line, park specific, interpretive and educational material presentations that are accessible and deliverable via the DCP. These products will be available to students and teachers at any time. They are designed to be integrated with the digital video presentations and to supplement classroom instruction on various content standards. They include such materials as lesson plans and teacher's guides. This is a yearly cost.

VIDEO CONFERENCING SESSIONS

\$65,000 for equipment and services.

This section contains all the equipment, services, and materials necessary to perform the digital video presentations described in the pilot project proposal. Each park will need cameras, microphones, lighting, codecs, and various other products to produce the presentations. Each classroom will need video conferencing equipment to participate in the program. Parks and classrooms will need the physical connections to the DCP and any associated fees for maintaining that connection, along with classroom equipment will also be funded from this section. This is a one-year, initial cost. Subsequent yearly costs for maintenance and enhancement would be in the \$5,000 per year range.

EVALUATION / MEASUREMENT OF SUCCESS

\$10,000

This section will consist of an independent, systematic, ongoing evaluation of the methods and materials used in the pilot project, It will also contain a final evaluation of the project that includes recommendations for the future continuance of the project. The success of the program will be measured in relation to the needs of the parks, the school and the benefactors.

COMPLETE BUDGET FOR PROJECT

\$65,000 for equipment and services per location (initial), \$5,000/year ongoing.

\$50,000 for personnel per location

\$10,000 for evaluation for each location.

INDEX “A”

HISTORY AND SOCIAL SCIENCE			
GRADE	CONTENT STANDARD	TITLE	THEME
4th	4.1, 4.2	Historic Distribution of Indigenous Peoples In California Or Where The Indians Lived	Indigenous people lived in all of the major regions of California.
4th	4.1, 4.2	Distribution of Early Non-Indigenous Peoples in California Or Where the Newcomers Lived	For over three centuries, the major influences of non-indigenous people in California were confined to areas near the coast.
4th	4.2, 4.3	Distribution of Non-Indigenous Peoples In California From 1846 to 1850 Or How The Goldrush Changed Where People Live	Where and how people lived in California was forever changed by the discovery of gold.
5 th	5.1	Indigenous Peoples and Their Environment Or Indians and The Land	Their physical environment influenced indigenous people’s lives and they in turn influenced the environment.
5 th	5.2	Early Explorations of California	Explorers from many countries used many routes in their early explorations of California.
5 th	5.8	Experiences of Early Pioneers Along the Overland Trails. Or Life In A Wagon Train	Early pioneers used many routes into California and had countless stirring experiences near “the end of the trail.”

History and Social Science – PAGE TWO

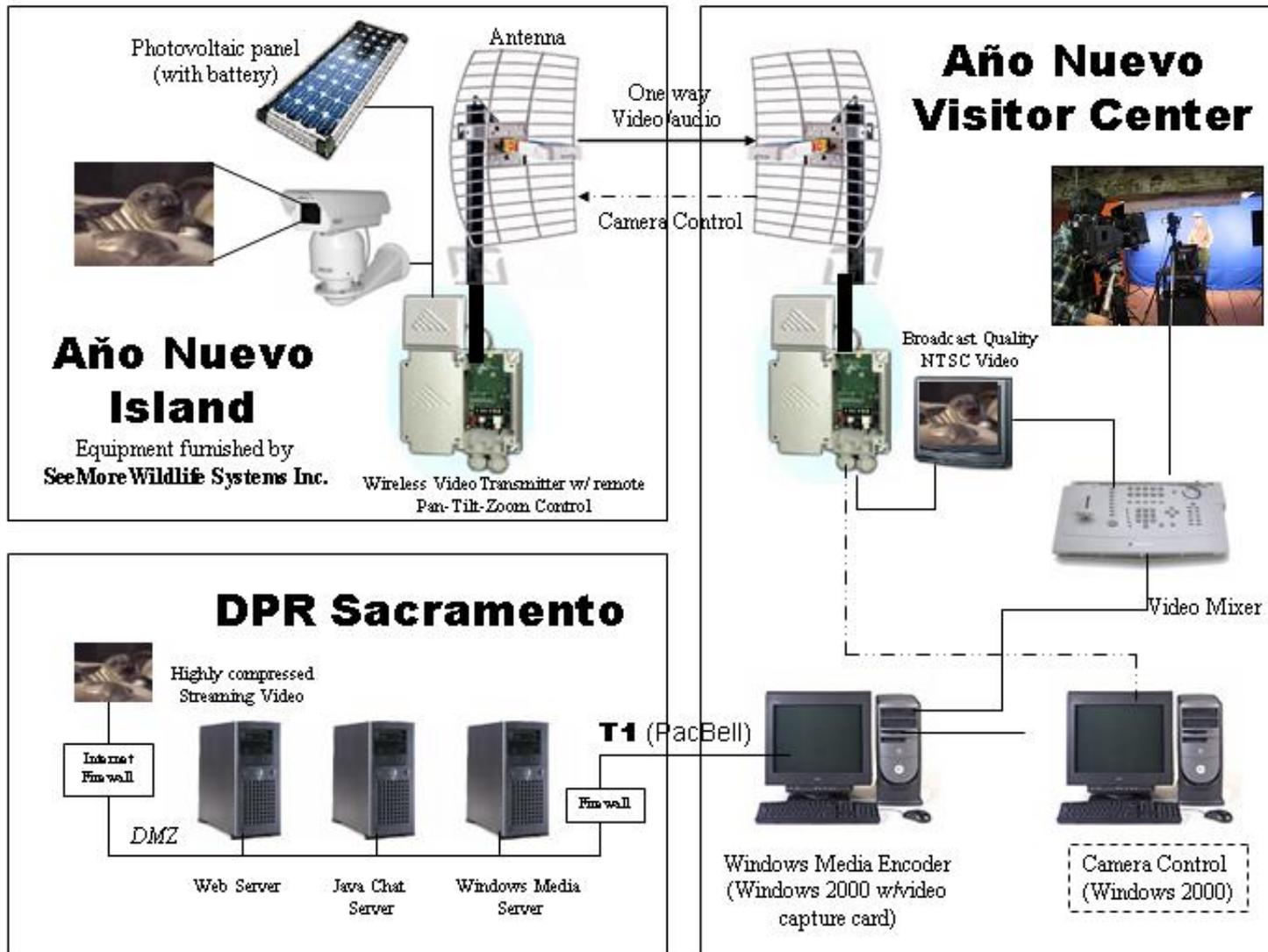
GRADE	CONTENT STANDARD	TITLE	THEME
6 th	6.1	Archeological Resources In the State Park System Or Early Humans In California	There are many places in the State Park System where we study and preserve evidence of the earliest Californians.
8 th	8.8(3)	The Changing Role of Women During Westward Expansion Or Pioneer Women of California	The lives of many great pioneer women are celebrated in the State Park System.
8 th	8.8(4)	The Importance of the Sacramento and San Joaquin Rivers and the Struggle for Water Rights Or The Importance of Water	He, who controls water in California, controls California.
8 th	8.10, 8.11	A study of Black Civil War Participant Allen Allensworth and His Experiences in Post Civil War America or The Life of Colonel Allen Allensworth	The life of Allen Allensworth reflects many of the experiences of black people before, during, and after the Civil War.

SCIENCE			
GRADE	STANDARD	TITLE	THEME
4 th	4, 5	The Formation and Properties of Rocks and Minerals Within the State Park System and the Physical Processes That Shape Them Or Parks Rock!	The state park system protects outstanding examples of sedimentary, igneous and metamorphic rocks.
4 th	2(c), 3(a)	The Importance of Decomposition in a Forest Ecosystem Or Of Maggots and Men	The living and non-living elements of an ecosystem are dependent upon decomposition.
5 th	3	The Water Cycle and Its Importance To Trees or From Sweat To Sap	Water may recycle through several different units of the State Park System.
5 th	4(c)	The Uneven Heating of the Earth and How it Creates Severe Weather Or Violent Weather In State Parks	Severe weather in state parks can be dangerous to humans.
6 th	1 (d), (e), (f)	Evidence of Plate Tectonics within the State Park System Or Parks Are Moving Places	The movements of huge pieces of land called “plates” are responsible for many of the landforms in state parks.
6 th	7	The California State Park System Prescribed Fire Management Program as an Example of the Scientific Method Or Sometimes Rangers Light Fires	The scientific method is not only used in a laboratory, it also is used in the forest.

SCIENCE – Page 2

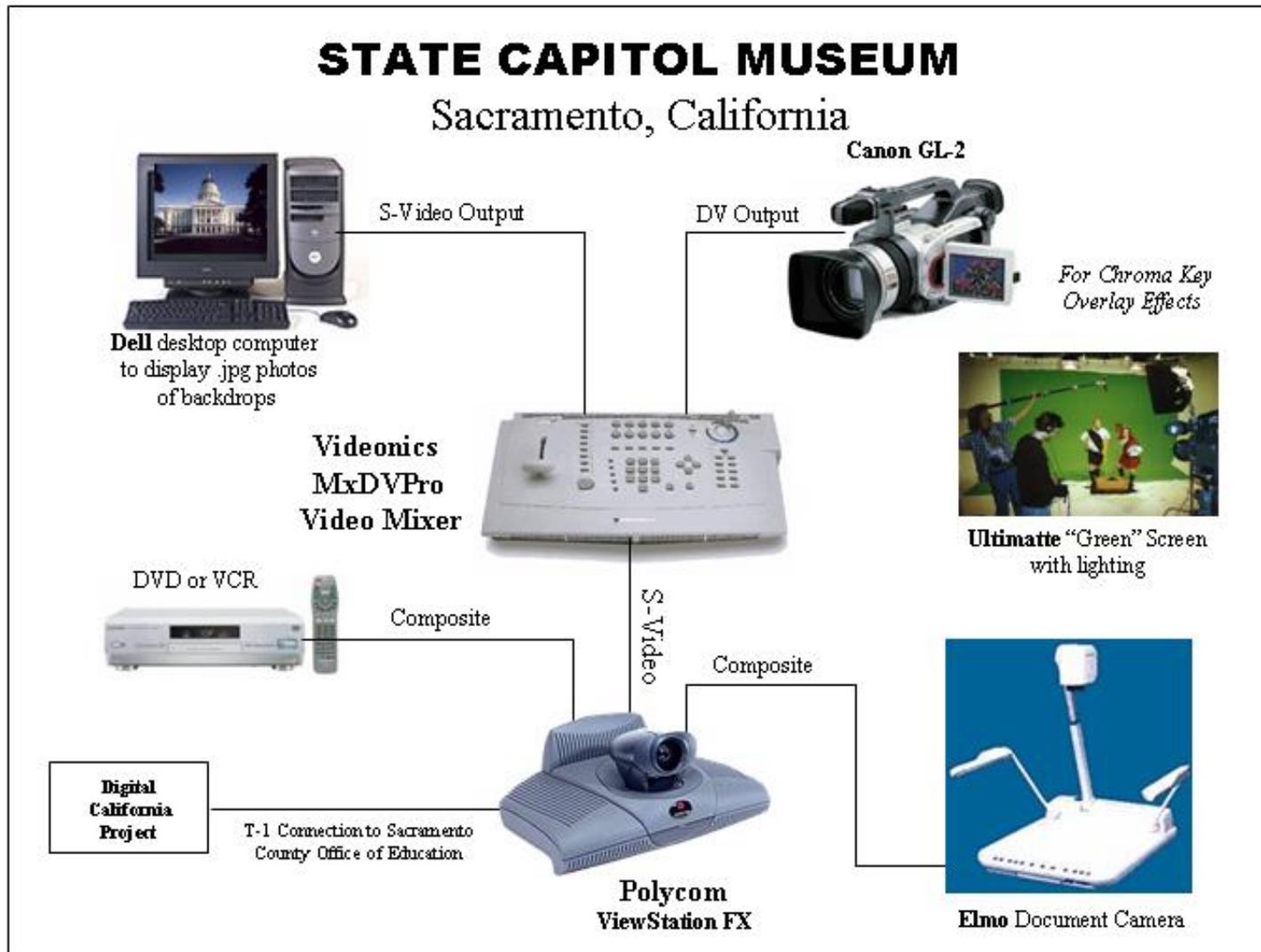
GRADE	STANDARD	TITLE	THEME
7 th	3 (c), (d), (e)	Geologic and Fossil Evidence in the State Park System Representing the Concepts of Evolution and Extinction Or Descent With Modification In The State Parks	The geology and fossils within the state park system tell us a story of climatic change, extinction, and evolution.
7 th	4 (a), (b), (c)	Gradual and Catastrophic Earth Processes Or The Shaping of the Earth	The earth processes that have shaped the earth over millions of years, both gradual and catastrophic, are the same processes shaping the earth today.
7 th	3 (a), (b), (b), & 5 (a), (b)	Evolution and adaptation as revealed by structure and function in an elephant seal Or Evolution of the Elephant Seal	Evolution has resulted in the elephant seal's current structures and the functions they perform.
8 th	1 & 2	Concepts in Force and Motion as Seen During a Physical Confrontation of Male Elephant Seals Or Elephant Seal Fight!	Many ideas concerning motion and force are seen during an elephant seal fight.

INDEX “B”
Technical Diagrams



STATE CAPITOL MUSEUM

Sacramento, California

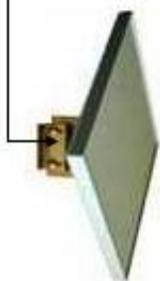


September 2003

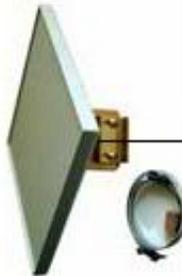
Anza Borrego Desert Paleontology Lab, Borrego Springs



**PolyCom
ViewStationFX**

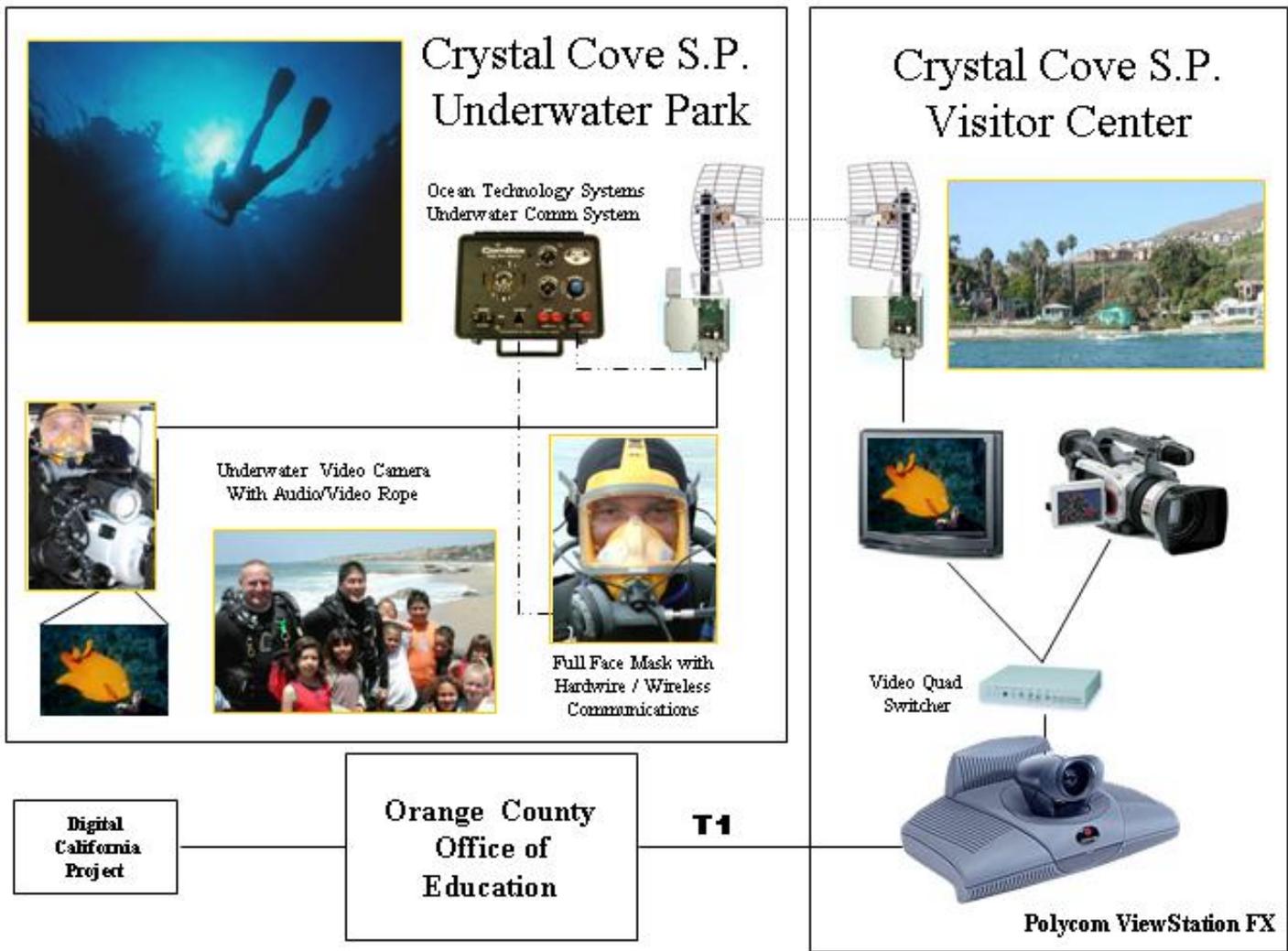


Airaya Bridge
54 Mbps Wireless Link
over 1.3 miles



**Borrego Springs
High School**

**Digital
California
Project**



September 2003

Fish Creek, Anza Borrego Desert



External Canon GL2
Video Camera



12 volt AC power inverter
attached to car battery

PolyCom ViewStationFX
w/13 in TV



High Performance Wireless Research & Education Network

Digital
California
Project



HPWREN Wireless Bridge
45 Mbs over approximately
35 miles

