

Channel Islands Live at a Glance



What Is Channel Islands Live?

Channel Islands Live is a program that offers students and the public a new way to experience the wild and remote landscapes of Channel Islands National Park using wireless technology. Developed in partnership between Channel Islands National Park and Ventura County Office of Education, Channel Islands Live is bringing the park to the people by providing real-time educational programs and wildlife viewing from the spectacular natural world that lies just off the coast of southern California. Through Channel Islands Live anyone can access remote park locations and understand the value of the Channel Islands.

What Is the Purpose of the Program?

The purpose of this project is to increase public awareness of the island and marine ecosystems of Channel Islands National Park and National Marine Sanctuary through education and outreach programs. Streaming video and audio from the Channel Islands are delivered by a wireless network supported by the park and Ventura County Office of Education. Using the latest educational technology, interactive programs are delivered from the remote Channel Islands to audiences on the mainland. These experiences help connect participants to the values of park science, history, and culture.

What Does It Offer?

- **Real-time hikes and dives.** Channel Islands Live programs highlight the remarkable natural and cultural resources of the park and marine sanctuary. Programs explore various island resources including kelp forests, a historic lighthouse, and active seabird colonies. The interactive Live Dive program is broadcast from the giant kelp forests off Anacapa Island using cameras and two-way communication to allow students and visitors to talk with park rangers during underwater dives.
- **Education programs.** More than 500 students and teachers in Ventura County schools are participating in the Channel Islands Live curriculum-based education program. Students conduct hands-on classroom and field activities to compliment the live broadcasts.
- **Webcams.** Using a personal computer, everyone can access Channel Islands Live webcams to watch a pair of nesting bald eagles in the process of raising this year's chicks on Santa Cruz Island at http://chil.vcoe.org/eagle_cam.htm. In spring 2009 other webcams will be up and running, offering up-close views of California brown pelicans and western gulls nesting on Anacapa Island.

Channel Islands Live: Frequently Asked Questions

What is Channel Islands Live?

Channel Islands Live is a program that offers students and the public a new way to experience the wild and remote landscapes of Channel Islands National Park using wireless technology. Developed in partnership between Channel Islands National Park and the Ventura County Office of Education, Channel Islands Live is bringing the park to the people by providing real-time educational programs and wildlife viewing from the spectacular natural world that lies just off the coast of southern California. Through Channel Islands Live, everyone from school kids to stockbrokers can access remote park locations and understand the value of the Channel Islands.

What is the purpose of Channel Islands Live?

The purpose of this project is to increase public awareness of the coastal and marine ecosystems of the park and sanctuary through education and outreach programs using remote cameras and equipment located in and around Channel Islands National Park. Streaming video and audio from the Channel Islands is delivered by a wireless network supported by the park and the Ventura County Office of Education. Using the latest educational technology, live, interactive programs are delivered directly from the Channel Islands to schools and to the public.

The ultimate outcome will be a suite of live educational and interpretive programs produced by Channel Islands National Park, the Ventura County Office of Education and the Channel Islands National Marine Sanctuary for dissemination through the county schools and to other public and private institutions of formal and informal learning. This partnership will provide students and others an opportunity for interactive, place-based learning— making park science, history and culture more relevant and meaningful.

What types of programs are parts of Channel Islands Live?

- ◆ **Real-time hikes & dives.** Channel Islands Live programs highlight the remarkable natural and cultural resources of Channel Islands National Park and National Marine Sanctuary. Programs include the interactive underwater dive program broadcast live from the giant kelp forests off Anacapa Island. Video cameras and two-way communication allow students and visitors to talk with rangers live as they explore island resources, including the kelp forests, historic lighthouse and lively seabird colonies.
- ◆ **Education programs.** More than 500 students and teachers in Ventura County schools are participating in the Channel Islands Live curriculum-based education program. Students conduct hands-on classroom and field activities to compliment the live, interactive programs.
- ◆ **Webcams.** Using a personal computer, everyone can access Channel Islands Live webcams to watch a pair of nesting bald eagles in the process of raising this year's chicks on Santa Cruz Island. (http://chil.vcoe.org/eagle_cam.htm). In spring 2009, other webcams will be up and running, offering up-close views of California Brown Pelicans and Western gulls nesting on Anacapa Island.

How did this program develop?

Access to the park can be a challenge. Because of its remote location, less than half of park visitors ever get out to the islands. One solution is finding a way to bring the islands to the people. To bring the park to people, the National Park Service developed the underwater dive program 21 years ago, offering visitors a rare glimpse into the park's remarkable marine ecosystem.

From 1995- 2001 a microwave link transmitted this popular program to the park Visitor Center in Ventura. Seeking to expand this program and re-establish a mainland link, the Park joined forces with the Ventura County Office of Education in 2006. The Office of Education recently increased the capacities of its wireless network to accommodate multimedia educational programs for Ventura County schools. By expanding the FCC licensed microwave and fiber optic communications systems, the Office of Education is working to connect all schools in Ventura County to the Internet and Internet2, part of the K12HSN high speed educational network. This network will also help to bring the islands to more people than ever before.

Partnering with the Ventura County Office of Education is a natural fit to bring live science and research

from the park and marine sanctuary to county students and eventually to the public nationwide. Both the Ventura County Office of Education and the Park are dedicated to providing opportunities for teachers, students and the general public to learn more about the park and sanctuary, their significant natural and cultural resources, and the challenges involved in protecting them.

How was this partnership formed?

The partnership between Channel Islands National Park and the Ventura County Office of Education is an outgrowth of a more extended local partnership with the Channel Islands National Marine Sanctuary, Santa Barbara Maritime Museum, and The JASON Foundation for Education. In 2003, the JASON “From Shore to Sea” expedition to the Channel Islands used similar wireless technology to deliver educational programs from Anacapa to over 1.6 million students and over 2,500 teachers in the United States and internationally. The partners assisted JASON in the development of educational curriculum that cover a variety of marine and terrestrial science stories within the Park and the Sanctuary. This curriculum is certified by the State of California, California Learning Resources Network (CLRN.org). It is the intent of this project to continue to utilize the JASON curriculum and develop new education materials to enhance the learning quality and meet the educational objectives of live programming in the park and sanctuary. This joint educational project will be referred to as “Channel Islands Live.”

Who supports Channel Islands Live?

Partners supporting Channel Islands National Park and the Ventura County Office of Education include:

- Channel Islands National Marine Sanctuary
- Institute for Wildlife Studies
- Island Packers, Ventura
- Marine Science Institute, UCSB
- Minerals Management Service
- Montrose Settlements Restoration Program
- The Nature Conservancy
- Santa Barbara County Education Office
- Santa Barbara Maritime Museum

How is this work funded?

Grants that fund Channel Islands Live include a NOAA BWET grant and National Park Service Challenge cost share grants. The program is also supported by settlement restitution funds, including funds administered by the Montrose Settlements Restoration Project.

What's the latest with Channel Islands Live?

- Channel Islands National Park has prioritized Channel Islands Live as its most important interpretive project.
- Ventura County Office of Education received BWET funding for a third year which will increase educational resources to the Program
- Ventura County Office of Education is continuing to develop its ability to deliver high bandwidth signals to area schools and beyond via Internet and Internet2 .
- Archived video and other media to support teaching, learning, and research throughout the year will be deployed May 2008.
- Permanent web cameras placed on Anacapa Island for streaming media will be deployed May 2008

What's still needed?

- Further development of evaluation tools to use with both students and general public
- Meet staffing and funding challenges to expand the program
- Develop additional educational resources for Live programs and continue to enhance website content
- Increase awareness of and access to live and archived footage for scientific research
- Demonstrate how research that shows the effectiveness of distance learning applies to this program

Who do I contact with further questions?

- **Yvonne Menard:** Channel Islands National Park, Yvonne.Menard@nps.gov 805.658.5725
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- **Catharine Reznicek:** Ventura County Office of Education, creznicek@vcoe.org 805.383.9326

Channel Islands Live: How It Works



Technology Transports People to a Hidden World

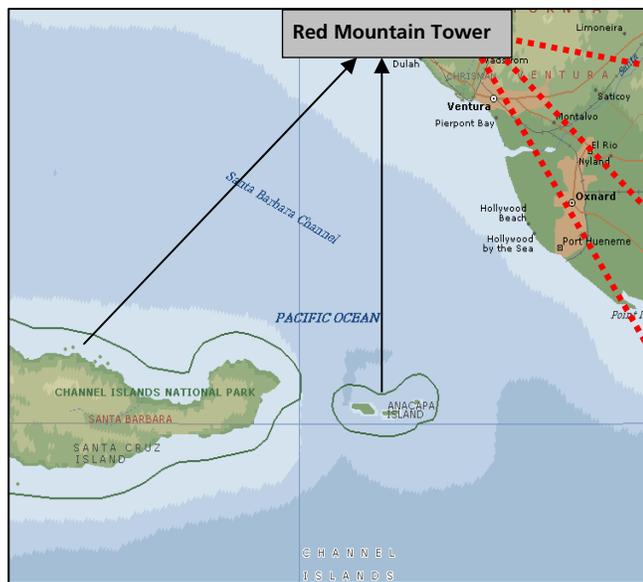
Channel Islands Live programs are transmitted via microwave frequency from the islands across 18 miles of open ocean to the mainland tower sites that are part of Ventura County Office of Education's wireless network. The signal is instantly sent to a receiver at the park's mainland visitor center, where audiences experience the program in real time.

For about 300,000 people who visit the Ventura visitor center annually these virtual programs offer unique opportunities to connect to the rugged beauty and remarkable resources of the islands. Participating schools receive live classroom broadcasts via the Internet. Since the technology is interactive, students can ask questions as they virtually explore Channel Islands National Park.

Using wireless technology, Channel Islands Live programs offer views into a hidden world. Without ever getting wet, students and visitors can take an "underwater hike" through the Channel Islands kelp forest guided by a park ranger. Fitted with a special SCUBA face mask, an underwater ranger communicates with the live audience and answers questions about the marine ecosystem.

The Channel Islands Live EagleCAM transmits similarly from Santa Cruz Island to tower sites in Ventura. This live feed is available on the Web through Ventura County Office of Education at http://chil.vcoe.org/eagle_cam.htm.

Bringing the Islands to the People



Channel Islands National
Park Visitor Center



Ventura County Schools &
Office of Education



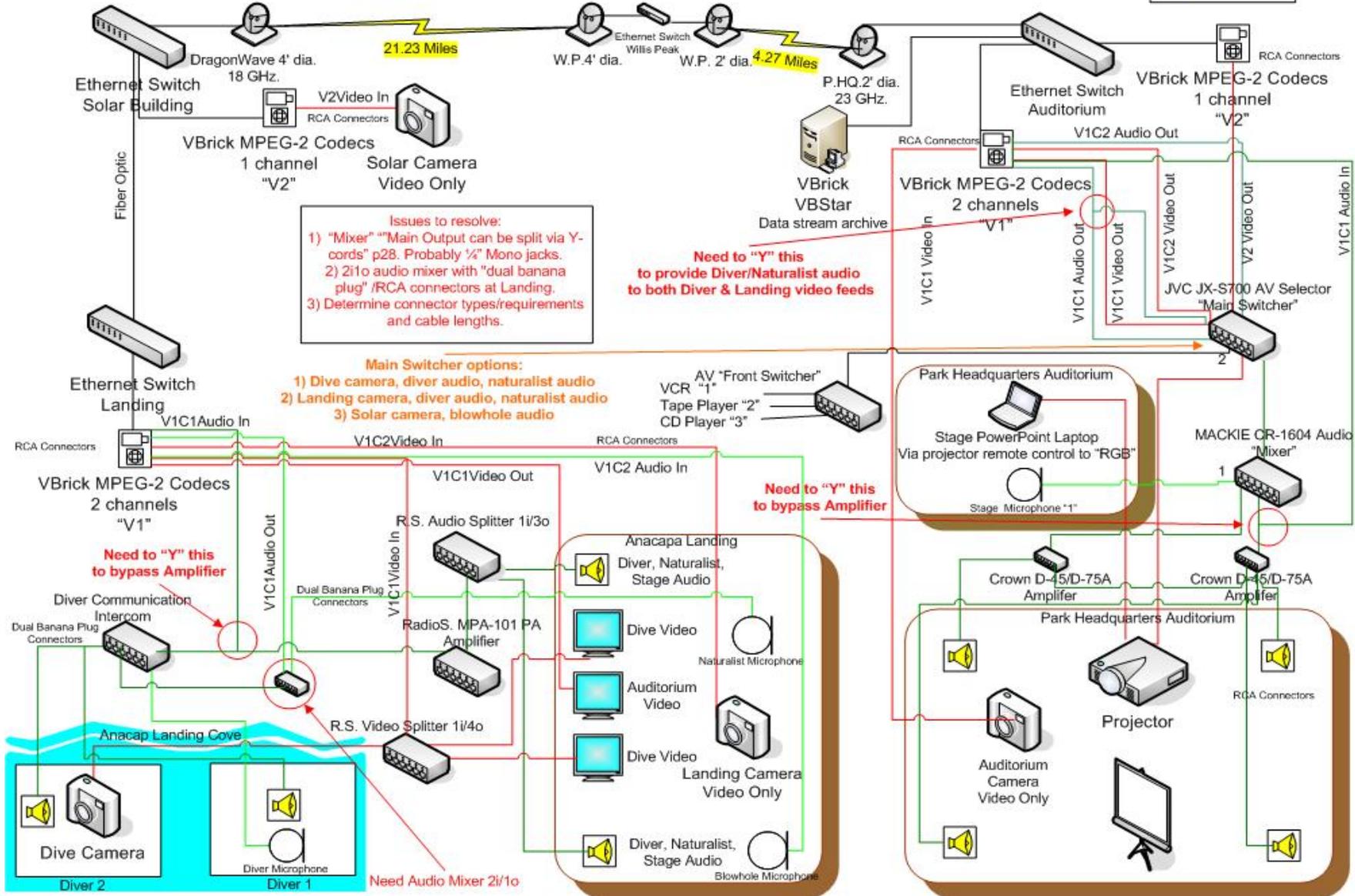
EagleCAM available
worldwide on the Web

The Technology Behind Channel Islands Live

Anacapa Island 2/22/06 Wireless Video Demonstration Network Design

by
David Luff, Technology Services, VCOE
Revised 1/27/06

Green = Audio
Red = Video
Black = Ethernet
Z = Microwave



Channel Islands Live: Partnerships



Partnership Makes It Possible

The National Park Service has been developing innovative ways for the public and students to learn about the Channel Islands. Ventura County Office of Education's wireless project provides just this venue—a way to bring the islands to people wherever they may be. Partnering with Ventura County Office of Education is a natural fit to bring live science and research from the Channel Islands to local students and eventually to the public nationwide. Both Ventura County Office of Education and the park are dedicated to providing opportunities for teachers, students, and the general public to learn more about the significant natural and cultural resources contained within Channel Islands National Park and National Marine Sanctuary and the challenges involved in protecting them.

Collaboration for Education

The partnership between the National Park Service and Ventura County Office of Education is an outgrowth of an extended local partnership with the Channel Islands National Marine Sanctuary, Santa Barbara Maritime Museum, and the Santa Barbara County Education Office. In 2003 this suite of partners collaborated with the JASON Foundation for Education for the "From Shore to Sea" Expedition to the Channel Islands. The Expedition used satellite and microwave technology to deliver educational programs from Anacapa Island to over 1.6 million students and over 35,000 teachers in

the United States and internationally. These partners continue to support Channel Islands Live education programs, using the "From Shore to Sea" curriculum for grades 4–8. Programs will eventually be transmitted via high-speed Internet and Internet2 connections that will serve distance learning programs at a variety of institutions including museums and universities. Financial support has come from Channel Islands National Marine Sanctuary through a NOAA Bay Watershed Education and Training program (B-WET) grant and the Montrose Settlements Restoration Program.

Live Partners

Channel Islands Live is provided by an educational partnership between Channel Islands National Park and Ventura County Office of Education. Various aspects of the program are supported by:

- Channel Islands National Marine Sanctuary
- Institute for Wildlife Studies
- Island Packers, Ventura
- JASON Foundation for Education
- Marine Science Institute, UCSB
- National Park Foundation
- Minerals Management Service
- Montrose Settlements Restoration Program
- The Nature Conservancy
- Santa Barbara County Education Office
- Santa Barbara Maritime Museum

The Value of Distance Learning



Connecting the Park to the People

People are drawn to the Channel Islands by their inherent beauty, rich resources, and isolated nature, yet their remoteness naturally limits the number of people able to visit. Consequently, bringing the park to the people takes on added importance. A core park mission is to foster an appreciation of the islands' unique ecology and human history amongst a diverse and growing population. Through Channel Islands Live, Channel Islands National Park and Ventura County Office of Education are joining forces to provide new opportunities for people to learn more about the Channel Islands and their place in the local ecosystem.

Technology Links People to Remote Resources

Working as partners, the National Park Service and Ventura County Office of Education are providing distance learning opportunities using wireless technology. Through live, interactive programs, students and the public are able to experience some of the remarkable resources of the Channel Islands. Participants view natural and cultural resources inaccessible to large segments of the population. This approach allows people of varying interests, ages, and backgrounds, some of whom may never have the opportunity to visit, to connect remotely to learn about park resources.

Live programs also provide students with opportunities for in-depth interdisciplinary learning supported by standards-based interactive curriculum. Educational research has demonstrated that students better understand key science concepts through multimedia and interdisciplinary approaches. Today's technology extends the reach of this program out from the islands to the park's mainland visitor center and into classrooms and eventually in time to other institutions of learning across the country.

Distance Learning and National Parks

National parks offer great value for formal learning in math, science, and social science. Broadcasts such as the Live Dive, which features the diverse kelp forests at Anacapa Island, have proven successful in teaching marine science. Significant stories about the islands' natural and cultural history are told through these interactive programs, enhancing understanding of park research and resource issues.

Distance learning programs also offer informal experiences for people of all ages, including new and diverse audiences. Distance learning reaches a much larger audience, including non-traditional park users, inviting them to learn about, appreciate, and ultimately participate in preserving the parks' rich natural and cultural heritage.