Park News

National Park Service
U.S. Department of the Interior

Island Views

The official newspaper of
Channel Islands National Park

Volume 4, 2007 — 2008

Tim Hauf, www.timhaufphotography.com

Falcon Chicks Hatch

IN APRIL 2007 BIOLOGISTS DISCOVERED peregrine falcon chicks on Santa Barbara Island for the first time in over 50 years. Although successful nests have been recently recorded on other Channel Islands, this was the first documented successful breeding on Santa Barbara Island since about 1940.

Due to pesticide poisoning, peregrine falcons disappeared from the islands in the mid-1950s. Peregrine falcons, bald eagles and many seabirds in the southern California marine environment have had problems breeding in recent decades due to DDT and PCBs that contaminate the local food web. The chemicals can cause birds to lay thin-shelled eggs that dehydrate or break during incubation.

Brian Latta

Peregrine chicks in Santa Barbara Island nest.

please see FALCON, 23

Fox Recovery Continues

ONE OF AMERICA'S RAREST MAMMALS, the endangered island fox, was released from captivity to the wild on San Miguel, Santa Rosa, and Santa Cruz Islands during the fall of 2007, marking yet another milestone in the recovery of balance to the islands ecosystem.

In 1999, at the depth of the catastrophic island fox decline, 14 foxes were brought into captivity on San Miguel, with only one

Tim Hauf

The endangered Channel Islands fox

please see FOX, 17

Bald Eagles Return

THE U.S. CHANNEL ISLANDS, WHICH ARE home to Channel Islands National Park, are often called the Galapagos of North America. Isolated from the mainland, the islands are home to many species of animals and plants found nowhere else on Earth. However, this amazing oasis of biodiversity was irrevocably altered beginning in the mid-1800s when settlers introduced nonnative livestock. Feral pigs, sheep, rats, and pesticides devastated native plant and animal populations, pushing some species to extinction. Working in cooperation with numerous partners, the National Park Service (NPS) has undertaken a wide range of efforts in recent years to protect and restore the biodiversity of the Channel Islands. In 2006, a program to restore bald eagles—once an important part of the ecosystem—paid off. For the first time in more than 50 years, a bald eagle chick hatched on the Channel Islands unaided by humans.

The bald eagle restoration program was made possible through a partnership among state and federal agencies, including the NPS and the Montrose Settlement Restoration Program. The partnership was assisted by nongovernmental partners such as the Institute for Wildlife Studies (IWS), a nonprofit working for more than 25 years to restore wildlife on the Channel Islands, which carries out the field work for the eagle restoration program.

From 2002 to 2006 biologists imported a total of 61 bald eagle chicks raised in Alaska and at the San Francisco Zoo to Santa Cruz Island, one of five islands that make up Channel Islands National Park. Only four years after starting the restoration program, biologists were surprised in 2006 by two successful bald eagle nests on Santa Cruz Island, each fledging one chick. In 2007 one nest with one chick has been documented; the chick fledged in late June.

Peter Sharpe

In April 2006, the first chick in more than 50 years hatched on the Channel Islands. Now known as "A-49," its radio and satellite transmitters have allowed biologists to track this bird moving among the islands, visiting the mainland of California for a couple of months, and returning to the islands.

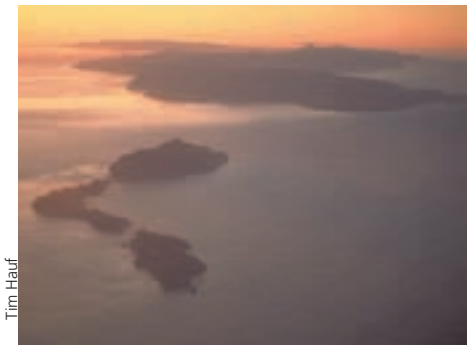
Thrilled with the public interest in the first chick, now known as A-49 (see accompanying picture), Channel Islands National Park,

please see EAGLE, 15

Island Information

Things to Do

Focus on Resources



Tim Hauf

Aerial view of Channel Islands National Park and National Marine Sanctuary

National Park Service
U.S. Department of the Interior

Channel Islands National Park
Named for the deep trough that separates them from the mainland, the islands off the California coast and their encircling waters are home to plants and animals found nowhere else on Earth. Isolation over thousands of years and the mingling of warm and cold ocean currents give rise to the rich biodiversity of these islands. Today, five of the islands, their submerged lands, and the waters within one nautical mile of each island are protected as Channel Islands National Park.

Mailing Address
Park Superintendent
Channel Islands National Park
1901 Spinnaker Dr.
Ventura,CA 93001

Phone
805-658-5730

Park Website
www.nps.gov/chis/

E-mail
chis_interpretation@nps.gov

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

Welcome from the Superintendent

THE PARK STAFF AND I WISH TO WELCOME you to Channel Islands National Park, one of North America's magnificent treasures. Close to the California mainland, yet worlds apart, the park encompasses five of the eight California Channel Islands (Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara) and their ocean environment, preserving and protecting a wealth of natural and cultural resources. The park bridges two biogeographical provinces and in a remarkably small place, harbors the biologic diversity of nearly 2,500 miles of the North American coast. The Channel Islands are home to over 2,000 terrestrial plants and animals, of which 145 are found nowhere else in the world.

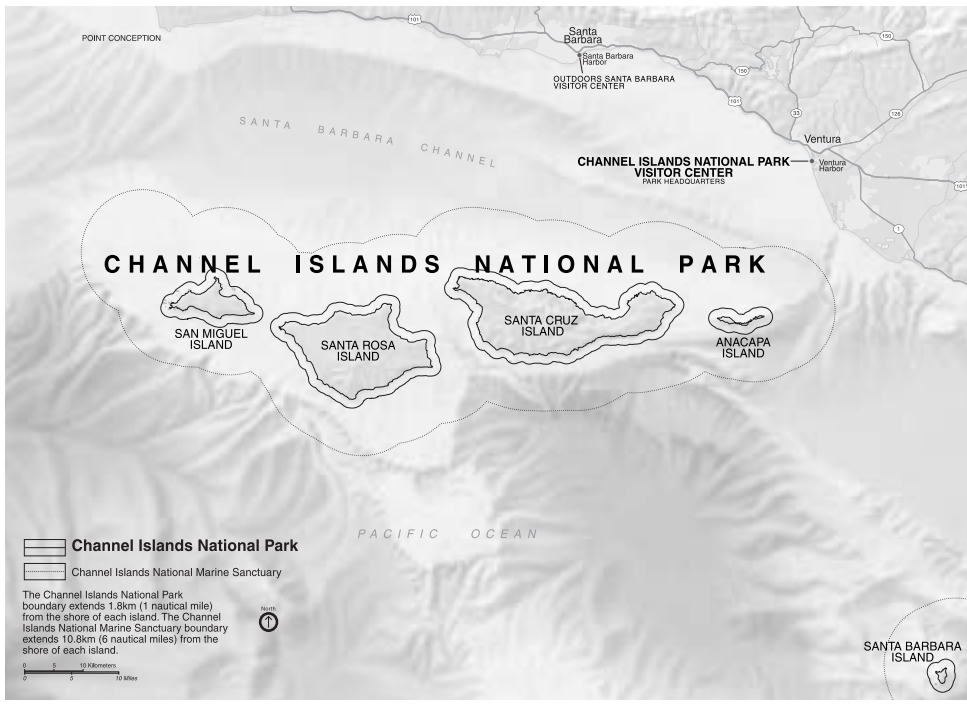
Like the Galapagos Islands of South America, isolation has allowed evolution to proceed independently on the islands. Marine life ranges from microscopic plankton to the blue whale, the largest animal to live on Earth. Archeological and cultural resources span a period of more than 13,000 years of human habitation.

The protection of these fragile island resources was ensured when Congress, in the act that created Channel Islands National Park in 1980, established a long-term ecological monitoring program to gather information on the current health of resources and predict future conditions. This information provides park and natural resource managers with useful products for recreation planning, conservation and restoration programs, and early identification of critical issues.

The islands were set aside by Congress not only to preserve these resources, but also to provide for your enjoyment. If you visit the park, you will be one of a very select group. Few people actually see this park because it is not easy to get to—you can't drive to the islands. A short but exciting ocean voyage or a commercial flight in a small airplane is required. The park is one of the least visited of all of America's national parks, with less than 250,000 annual visitors to the islands. The relatively light visitation enhances the islands' feeling of solitude and assists in the protection of fragile resources. In establishing the park, Congress recognized the value of solitude by allowing only controlled, low-impact visitation. So a visit to this national park will always provide a marked contrast to the bustle of southern California most people experience. It will always be a place where you can step back in time and experience coastal southern California the way it once was.

We are delighted you are interested in this marvelous place. Thanks for making the effort! We hope our park newspaper encourages you to safely explore and discover Channel Islands National Park while taking care to protect and keep these beautiful and fragile islands unimpaired for future generations.

Russell E. Galipeau, Jr., Superintendent



Visitor Information

Visitor Center
The Channel Islands National Park Visitor Center features a bookstore, a native plant garden, a display of marine aquatic life, and exhibits featuring the unique character of each park island. Visitors also will enjoy the 25-minute park movie, "A Treasure in the Sea," in the auditorium.

Channel Islands National Park
1901 Spinnaker Drive
Ventura, CA 93001
(805) 658-5730 www.nps.gov/chis/

·Hours: 8:30 a.m. to 5 p.m., daily
·Closed Thanksgiving and December 25

Outdoors Santa Barbara Visitor Center
This visitor center not only has one of the best views of Santa Barbara, but also offers visitors exhibits and information about Channel Islands National Park, Los Padres National Forest, Channel Islands National Marine Sanctuary, and the City of Santa Barbara. Open daily; call for hours.

113 Harbor Way 4th Floor
Santa Barbara, CA 93109 (805) 884-1475

Interpretive Information
Books and materials about the park are available for sale through the Western National Parks Association either in the park visitor center or by mail order. This nonprofit organization supports the educational and research programs of the park.

Western National Parks Association
1901 Spinnaker Dr.,
Ventura, CA 93001 (805) 658-5730 www.wnpa.org

Interpretive Programs
Weekends and holidays, rangers offer a variety of free public programs. For information about specific program dates and to learn more about the park, call, write, or visit the park's visitor center. On the islands, rangers and volunteer naturalists offer guided hikes throughout the year.

Accessibility
The mainland visitor center is fully accessible. Due to their isolation and transportation requirements, the islands are not readily accessible for individuals in wheelchairs or those with limited mobility. Limited wheelchair access is available on Santa Rosa Island via air transportation. Please call the park for information.

Transportation—How to Get There
Boat Transportation
Public boat transportation is available year-round to all five islands by the park concessionaires, Island Packers and Truth Aquatics. In addition, Island Packers offers whale watching trips while Truth Aquatics also offers scuba diving trips.

For departures out of Ventura and Channel Islands (Oxnard) Harbors contact:

Island Packers, Inc.
1691 Spinnaker Dr.
Ventura, CA 93001
(805) 642-1393 www.islandpackers.com

For departures out of Santa Barbara Harbor contact:

Truth Aquatics at Sea Landing
301 West Cabrillo Blvd.
Santa Barbara, CA 93101
(805) 963-3564 www.truthaquatics.com

Private boaters may land on all five islands within the park throughout the year. Please see "Boating and Kayaking" on page 20 for more information.

Air Transportation
Public air transportation is available year-round to Santa Rosa Island by park concessionaire Channel Islands Aviation. Flights depart from Camarillo Airport. For departures contact:

Channel Islands Aviation
305 Durley Avenue
Camarillo, CA 93010 (805) 987-1301 www.flycia.com

-Private aircraft may not land within park boundaries. All aircraft must maintain a minimum 1000-foot altitude above land and sea surfaces within the park.

When to Visit—Through the Year

VISITORS OFTEN ASK WHAT TIME OF YEAR they should visit Channel Islands National Park. Since the park is located in "sunny" southern California, it may seem that the obvious answer is "any time of year." And, true, you can visit throughout the entire year. But, believe it or not, we do have seasons here in southern California. While the seasonal changes are nothing like one would find in Minnesota, there are differences that visitors should take into consideration when visiting the park. Each season has its own character and casts a unique mood over the islands.

In addition, visitors also should be aware that ocean and weather conditions vary considerably from day-to-day and island-to-island. Although this makes planning your visit a little difficult, we must remember that this unpredictable and, at times, unforgiving weather is one of the main reasons that the islands have been afforded so much isolation and protection from the rapid changes seen on the mainland. It is, in part, what makes the Channel Islands such a unique and wonderful place.

We encourage you to take the opportunity to fully enjoy the islands throughout the entire year. Channel Islands National Park is truly a place for all seasons.

Climate

In general, the islands have a Mediterranean climate year-round. Temperatures are relatively stable, with highs averaging in the mid-60s (°F) and lows in the low-50s. The islands receive most of their precipitation between December and March. Spring starts the warming trend toward summer when temperatures average in the low-70s.

However, visitors must be prepared for high winds, fog, rough seas, and sea spray at any time. Winds are often calm in the early morning and increase during the afternoon. High winds may occur regardless of the forecast, especially on the outer islands, Santa Rosa and San Miguel (30-knot winds are not unusual). Anacapa, eastern Santa Cruz, and Santa Barbara Islands have more moderate winds. The calmest winds and sea conditions often occur August through October. Dense fog is common during the late spring and early summer months, but may occur at any time. Ocean water temperatures range from the lower 50s (°F) in the winter to the upper 60s in the fall.

Spring

· Although temperatures are becoming warmer, strong winds often occur during this season. Dense fog is common during the late spring.

· The islands are green and wildflowers reach peak bloom, especially the brilliant yellow coreopsis flowers. During a normal year of rainfall, this occurs by late January through March.

· Western gulls and other seabirds begin nesting.

· Island fox pups are born.

· Spring bird migration is underway.

· End of gray whale watching season.

· California sea lions and northern fur seals start to gather at their rookery sites.

· Peregrine falcons and other landbirds begin nesting.

Summer

· Afternoon winds are common. Fog diminishes near midsummer. Calm winds and seas become more frequent near the end of summer.

· Ocean temperatures begin to warm, reaching the high 60s (°F) by end of summer. Underwater visibility increases.

· Summer is the ideal time for sailing, snorkeling, diving, kayaking, and swimming.

· The park's underwater interpretive program begins on Anacapa with live broadcasts at mainland visitor center.

· Seabird and landbird chicks fledge (leave the nest and fly).

· Although the vegetation begins to dry out, some plants like gumplant, buckwheat, poppies, and verbena continue to bloom.

· Whale watching begins for blue and humpback whales.

· California sea lions and northern fur seals begin pupping.

· Most people visit the park during the June through August period.

· Backcountry beach camping season begins on Santa Rosa Island.

Fall

· The best chance for warm weather, calm winds, and seas continues. However, beginning around October, strong east or Santa Ana winds are possible.

· Many consider the fall as the best time of year for snorkeling, diving, kayaking, and swimming. Ocean temperatures may reach 70° (F) in early fall and visibility may reach 100 feet.

Tim Hauf

Rainbow and coreopsis, Santa Barbara Island

· Blue and humpback whale watching comes to an end in early fall.

· Fall bird migration is underway.

· Northern elephant seals begin to gather at their rookery sites in late fall.

Winter

· Temperatures begin to cool. Winter storms start to appear, with most rain falling between December and March. Nevertheless, beautiful, sunny, clear winter days occur between storms.

· Some of the best sunsets of the year occur during this time of year.

· Gray whale watching begins at the end of December and lasts until April.

· Northern elephant seals begin pupping in early winter.

· Harbor seals begin pupping in late winter.

· Islands begin to turn green and wildflowers start blooming during the late winter months.

· California brown pelicans begin nesting.

Transportation Information

Island	Frequency of Trips*	Travel Time* (one way)	Landing Conditions
Anacapa	Year-round: 7 days/week	1 hour from Ventura 2 hours from Santa Barbara	Visitors must climb from the boat up a steel-rung ladder to a dock. Once ashore, visitors must climb 154 stairs to the top of the island. Non-landing trips are available.
eastern Santa Cruz (NPS property)	Year-round: 5–7 days/week	1 hour from Ventura 2 hours from Santa Barbara	Visitor must climb from the boat up a steel-rung ladder to a pier at Scorpion Anchorage and Prisoners Harbor. All other landings are skiff (small boat) landings on a beach.
western Santa Cruz (TNC property)	Year-round: 2–5 days/week	1 hour from Ventura 2 hours from Santa Barbara	Visitors must climb from the boat up a steel-rung ladder to a pier at Prisoners Harbor. All other landings are skiff (small boat) landings on a beach. Contact The Nature Conservancy for information: (805) 642-0345.
Santa Rosa	Spring to fall: 8–12 days/month Flights: 7 days/week, year-round	3 hours from both harbors Flight: 45 minutes	Visitors must climb up a 20-foot, steel-rung ladder to a pier or be prepared for beach landings by skiff. Stong winds and rough seas are possible. Plane lands on a graded dirt airstrip. Turbulence is possible.
San Miguel	Spring to fall: 8–12 days/month	4 hours from Ventura 4.5 hours from Santa Barbara	Skiff landings on the beach—be prepared to waterproof gear and possibly to get wet. Strong winds and rough seas are possible.
Santa Barbara	Spring to fall: 4 days/month	3 hours from Ventura 6 hours from Santa Barbara	Visitors must climb a steel-rung ladder to the top of the pier from a skiff. Once ashore, visitors must walk uphill 1/4 mile with 131 long steps to the top of the island.
Multi-island trips (Truth Aquatics)	Year-round: 3 trips/month	Varies depending on destination	Trips include visits to at least two islands. These trips include meals and shipboard lodging.

***Refer to concessionaire's transportation schedule for more information.**

Where to Stay—Accommodations and Services

There are no accommodations or services available on the islands. Visitors must bring all their own food, water, and other supplies. Public phones are not available. Primitive camping is available on every island. Please refer to the camping section on page 10 for more information. For accommodations in Ventura or Santa Barbara contact:

Ventura Visitor and Convention Bureau
89C South California St.
Ventura, CA 93001 (805) 648-2075

Santa Barbara City Visitor Center
1 Santa Barbara St.
Santa Barbara, CA 93103 (805) 965-3021

Camping

Camping is available year-round on all five islands in Channel Islands National Park. Please refer to the "Camping" and "Backcountry Camping" sections on pages 10 for detailed information.

Picnicking

Picnic tables are available for day use on all islands except San Miguel. If weather permits, many visitors enjoy picnicking on the islands' beaches. Visitors must bring their own food and water. Public pit toilets are available on all islands.

continued on page 4

Park to Revise General Management Plan

CHANNEL ISLANDS NATIONAL PARK (CINP) is one of America's newest and most complex national parks. As one of America's "crown jewels," this park will continue to serve as a model for park management. It is important that park resources, both terrestrial and marine, continue to be preserved and protected for future generations.

The current General Management Plan (GMP) was completed in 1985. Since that time much has occurred, such as completion of the park's major land acquisition effort, expansion of park operations and visitor facilities, and an increase in the number of resource issues we are facing.

In 2001 the park began to revise the GMP that will help guide the park's management policies and direction for the next 15 to 20 years. This new GMP will provide a vision for the park's future, as well as guidance in resource preservation, protection, and management that will help achieve that vision. It will also help identify how the National Park Service (NPS) may best protect cultural and natural resources while providing for visitor enjoyment of the park.

Tim Hauf

Lighthouse, Anacapa Island

The park wants to communicate, consult, and cooperate with all individuals and groups of the interested public in this planning process. We urge you to take advantage of all opportunities in this process to share your vision and support for this magnificent national park. Your participation will ensure a strong public voice to help guide us and will result in a better vision than we alone could provide.

What is a general management plan?

GMPs identify the overall direction for future management of national parks. They take a long-range, broad, conceptual view, answering the question, "What kind of place do we want this park to be?" GMPs provide a framework for managers to use when making decisions about such issues as how best to protect resources, what levels and types of uses are appropriate, what facilities should be developed, and how people should access the park. All concepts, strategies, and actions in a general management plan must be consistent with the reasons for the park's establishment—the park's purpose, significance, and mission. Federal legislation, such as the NPS Organic Act, the Endangered Species Act, and the National Historic Preservation Act, along with NPS policies also direct what the plan can and cannot consider.

The Channel Islands GMP will not resolve all the issues facing the park, provide detailed facility designs or management actions, or guarantee funding for the park. Rather, this plan will describe the general path the NPS intends to follow in managing CINP over the next 15 to 20 years. Desired resource condition and visitor experiences that would be appropriate for each part of the park and the strategies for achieving those conditions, will be identified. General locations where certain types of development would be appropriate will also be identified. Specific questions regarding how these desired conditions will be achieved will be answered in new or revised implementation plans, such as resource management and interpretive plans that follow the GMP.

To comply with the National Environmental Policy Act and NPS policy, the GMP will be combined with an environmental impact statement (EIS). The GMP/EIS will identify significant issues and concerns, present a reasonable range of management alternatives, and analyze the environmental impacts of each of the alternatives.

Why does the park revise its GMP?

The National Parks and Recreation Act of 1978 (P.L.95-625) requires the preparation and timely revision of GMPs for each unit of the national park system. CINP's current GMP was first completed in 1980 and was amended in 1984 and 1985. Conditions have substantially changed since 1985. Among the significant changes that have occurred over the past 16 years: the NPS has acquired new lands on Santa Rosa and Santa Cruz Islands, the condition of several resources has declined (particularly in the marine waters surrounding the islands), several actions are underway to eliminate non-native species and restore altered ecosystems, park visitation has tripled, and recreational uses and use patterns have changed.

How can you get involved?

Public involvement is critical to the success of the planning effort. Public input will help the planning team and decision makers learn about the concerns, issues, expectations, and desires of visitors, interested citizens, people with traditional cultural ties to the park, interest groups, and others. The planning team will share information and seek public input at key points throughout the planning process. A variety of methods will be used to encourage public feedback, including publishing newsletters, sending public releases to the media, holding public meetings, and posting information on the Internet.

For more information about the planning process contact: Channel Islands National Park, Attention: GMP Coordinator, 1901 Spinnaker Drive, Ventura, CA 93001-4354; or chis_gmp@nps.gov. You can also log on to the park's home page at www.nps.gov/chis or the NPS planning web page at www.nps.gov/planning. All newsletters will be posted on the web sites, along with an electronic response form. Please let us know your concerns, issues, and thoughts on what should be addressed in the GMP. The CINP planning team appreciates your interest and looks forward to hearing from you.

Visitor Information

(continued from page 3)

Hiking

Many trails and roads traverse the islands, providing visitors with spectacular hiking opportunities. These trails and roads range from the maintained, relatively flat, signed trails of Anacapa to the unmaintained, rugged, mountainous, unsigned paths of Santa Rosa. Please see individual island sections for descriptions of these routes. In addition, trail maps, guides, and topographic maps are available at park visitor centers and at island bulletin boards. Hikers need to assume individual responsibility for planning their trips and hiking safely. To increase your odds of a safe hike, decrease your disturbance to wildlife, and lessen damage to resources, visitors should be in good physical condition and must follow the regulations and guidelines in the "Limiting Your Impact" section and those listed below:

Tim Hauf

Hikers, Webster Point, Santa Barbara Island

- Stay on trails and roads while hiking—**avoid animal trails,** which are narrow, uneven, unstable and dangerous. **Cliff edges should be avoided** at all times since they tend to be crumbly and unstable. Stay well back. Children should be supervised at all times by an adult.
- **Carry plenty of water**—one quart for short walks, more for longer hikes.
- Hikers should **never hike alone—use the buddy system.** This allows someone to go for help if you encounter trouble.
- Be aware of **poison oak, "jumping" cholla cactus, ticks, and scorpions**. Poison oak can be identified by its clusters of three shiny leaflets. Some ticks carry disease; check your clothing and exposed skin after hiking.
- In order to help prevent wildfires, **do not smoke on trails or in brush areas**. Smoking is allowed only on beaches or other designated areas.
- In departing from the islands, **visitors are responsible for meeting the boat concessionaire on time**. Be aware of departure time by asking the ranger or concessionaire employees.

Fishing

To fish in Channel Islands National Park, possession of a valid California state fishing license is required and all California Department of Fish and Game Regulations apply. In addition, thirteen Marine Protected Areas (MPAs) surround the islands. Special resource protection regulations apply. Please refer to the "Limiting Your Impact" section (page 20) for additional regulations and guidelines. Visitors may also contact the Channel Islands National Park headquarters and island rangers for more information on marine resources regulations. **Visitors should also be sure to obtain the Channel Islands National Park brochure/map and the Channel Islands National Marine Sanctuary (NOAA/NMS) *Protecting Your Channel Islands* brochure/map.**

Watersports

Swimming, Snorkeling, and Diving

The kelp forests, sea caves, and coves of the park await the adventurous swimmer, snorkeler, and diver. Some of the best snorkeling and diving in the world can be done right here within the park. These activities are best done on Santa Barbara, Anacapa, and eastern Santa Cruz Islands. Due to extremely windy conditions on Santa Rosa and San Miguel, these activities should not be attempted on these islands by the novice or anyone who is not properly trained, conditioned, and equipped. Please refer to diving books available in the visitor center for more detailed information on island snorkeling and diving sites.

Since the marine environment can be unforgiving, use extra caution when engaging in these activities. **Ocean conditions are highly variable and sometimes dangerous.** Many beaches on the islands have steep, dangerous shore breaks. The wind and swell generally come from the northwest and become stronger as the day continues. From October through January, visitors must also be prepared for strong east or Santa Ana winds. The ocean currents outside of coves and protected beach areas can be strong and extremely dangerous. These conditions should be carefully considered when planning your trip and entering the water. In addition to the regulations and guidelines listed in the "Limiting Your Impact" section, the following suggestions should also be considered:

- There are **no lifeguards on duty**, so all water sports are at your own risk. Visitors should be

National Park Service Centennial Initiative

IN 2016, THE NATIONAL PARK SERVICE (NPS) will be 100 years old. Many believe that national parks are one of America's best ideas, born from the spirit and values that founded this country. The national park idea didn't come from the European old world, where many of the best places were reserved or owned by the wealthy and powerful. It came instead from a new country where "of the people, by the people, for the people," was a founding principle. From its origins in this new nation, the idea has spread throughout the world.

What does it say about the citizens of a country who, through their government, are willing to set aside the most beautiful and significant places for all to enjoy as national park sites? What does it say about all who want to give something back, to support, and to share these best places with everyone? How does setting aside and taking care of our most special places speak to the shaping of our children's current and future values? What message does our actions today send to our children tomorrow?

As the NPS approaches the 2016 Centennial, we have an opportunity to consider how our national park sites meet our needs today—and how we want our parks to serve our needs for the next 100 years. To do that, a 10-year National Park Service Centennial Challenge has begun. In the spring of 2007, a series of nationwide listening sessions was conducted where thousands of Americans, offered recommendations and ideas.

In May 2007 a report was unveiled by the Dirk Kempthorne, Secretary of the Interior, and Mary Bomar, the Director of the National Park Service, entitled "The Future of America's National Parks" that outlines a vision to ensure that the American love affair with national parks endures. Kempthorne explained that the NPS will: 1) lead America in preserving and restoring treasured resources; 2) demonstrate environmental leadership; 3) offer superior recreational experiences; 4) foster exceptional learning opportunities that connect people to parks; and 5) be managed with excellence.

In addition, Kempthorne stated that by 2016, the National Park Service plans to: 1) improve priority facilities to acceptable condition; 2) restore native habitats by controlling invasive species and reintroducing key plant and animal species; 3) improve natural resources in parks as measured by scientific vital signs monitoring; 4) reduce environmental impacts of park operations; 5) double the amount of volunteer hours; 6) enroll two million new Junior Rangers; 7) encourage greater partnership and philanthropy; and 8) reshape the workforce to meet the needs of America.

Bomar said, "The men and women of the National Park Service will transform these goals into reality. We will be accountable to the American people for our actions and develop benchmarks to measure our success. We will report back to the citizens to tell them how we are doing."

The goals, national strategies, and selected centennial projects and programs will be supported by centennial plans for each of the 391 NPS sites. Bomar said, "Superintendents are working with park friends, advocacy groups, and community leaders to prepare the vision and outline specific actions for their own parks. They will also identify and outline the specific projects and programs to be proposed for public/private funding between now and 2016."

While the report includes some potential on-the-ground actions and examples, they are just that, examples. The report is not meant to be a listing of the specific projects.

Some of the actions are summarized by the Secretary in the report: "The 21st-century National Park Service will be energized to preserve parks and welcome visitors. Stewardship and science will guide decisions. An inventory of all wildlife in parks will be completed, a vital baseline to monitor change and adjust management. Strategic acquisitions will protect landscapes. Parks will be known as America's best classrooms. We will work carefully to add new parks to tell America's stories. Facilities will be in better condition. Hallowed battlefields will be preserved. Majestic species that symbolize this nation, such as bison and bald eagles, will thrive in their native habitats. A new era of private-public partnerships will bring greater excellence to parks. More volunteers will add value to park experiences. The latest information technology will captivate young people with the national park story. Children will reconnect to the outdoors and lead healthier lives. A new generation of conservationists will convey parks unimpaired to the next generation."

Bomar will work with the employees of the NPS and with park advocacy groups to recommend criteria for prioritizing and selecting centennial projects.

As proposed in the president's Fiscal Year 2008 Budget, the Centennial Initiative is a potential $3 billion infusion for the National Park System. The president has already proposed $1 billion over 10 years, above existing budgets, be spent on park operations. He also called for Americans to donate $1 billion over 10 years to the National Park Service to be matched by up to $1 billion from a special centennial account.

> ***"A vital goal for this country would be to prepare the parks, to guard the parks, to conserve the parks, to make the parks relevant to the American people in honor of the 100th anniversary."***
>
> -President George W. Bush
> February 7, 2007

Bomar said it will take "an army of supporters" to help reach the centennial goals. "From national organizations like the National Park Foundation to more than 160 park friends groups and 66 park cooperating associations to 140,000 volunteers, we will rely on them to augment the efforts of the 20,000 men and women of the National Park Service."

Bomar said, "This is not only a report to the president but a pledge to the American people, who are shareholders in the greatest system of parks and special places in the world . . . a pledge that the men and women of the National Park Service will continue to preserve these wonderful places for generations yet to come."

aware of boat landing operations at all times—**avoid water sports near skiffs that are conducting surf landings**.

- Snorkelers, kayakers, divers, and swimmers should always **use the buddy system.** This allows for someone to go for help if you encounter trouble.
- For your own safety, the law requires divers to **display a dive flag while diving**. It is recommended that spear guns be unloaded at least 50 feet from the beach.
- Before departing, swimmers, kayakers, snorkelers and divers **should leave an itinerary and/or float plan with someone** who is on shore and can be easily contacted.
- Sea caves can be very dangerous—large waves or swells can fill a cave unexpectedly. Be extremely careful and **wear a helmet at all times when exploring sea caves**.
- Due to cold water conditions (55° to 70° F), **wetsuits and hoods are recommended**.

Tim Hauf

Snorkelers, Landing Cove, Santa Barbara Island

Surfing

Depending on the swell direction, surfing can be done at several locations on Santa Cruz, Santa Rosa, and San Miguel Islands. Generally, the north shore is best during the north-west swells of winter/spring and the south shore is best during the south swells of summer/fall. All surf spots are remote and are best accessed by private boat due to the islands' rugged terrain and the hiking distance from the designated landing areas where the park concession vessels drop off visitors. Contact local area surf shops for more information.

Boating and Kayaking

Please refer to the "Boating and Kayaking" article on page 20.

Tidepooling

Please refer to the "Tidepooling" article on page 23.

Rodents and Hantavirus

Hantavirus has recently been found in deer mouse populations at Channel Islands National Park. This mouse-carried virus also has been found in many locations on the mainland. This is a potentially fatal disease, and some basic precautions should be taken.

- ***Avoid contact with rodents***. Rodents are hosts for a variety of diseases and parasites, including ticks and fleas, which may carry plague and rabies. Hantavirus is transmitted through the body fluids of the deer mouse and can become aerosolized when large masses of feces and dried urine are disturbed. People hiking and camping on the islands are considered to be at low risk; most cases of hantavirus infection have occurred when people have cleaned out or lived in buildings that have been inhabited by large numbers of rodents for many years. The precautions for avoiding infection by hantavirus are the same as those for the avoidance of any illness that may be contracted from rodents. When camping or hiking on the islands, the basic practices of cleanliness will reduce your chance of rodent contact.
- ***Do not feed any wild animals.*** Viruses and diseases are often passed through saliva. To reduce your chances of being bitten, avoid contact with wild animals.
- ***Keep food and drink in rodent-proof containers.*** On the islands, the mice are mostly active at night, but will also come out during the day while you are away from your site. It is best to keep food and dishes in plastic coolers or other containers that mice cannot chew through. This also applies to trash. It is not recommended to store food within tents, backpacks, or clothing since mice have been known to chew through these items.
- ***Prevent entry of mice into your tent.*** Mice will go everywhere in their search for food, so keep your tent screen zipped even when you are nearby. Keep your clothing and footwear inside your sealed tent especially at night.
- ***Symptoms of hantavirus infection***: Infection by hantavirus causes flu-like symptoms followed by acute respiratory distress. If you experience fever, aches, and/or stomach cramps and believe you may have had contact with rodents within the last 30 days, contact your physician immediately and inform your physician that you have had contact with rodents and possibly hantavirus.

Anacapa Island

CROSSING THE CHANNEL TO ANACAPA ISLAND, ONE BEGINS TO understand why the island's name was derived from its Chumash Native American Indian name, "Ennepah." Seeming to change shape in the summer fog or afternoon heat, the three islets of Anacapa look like an island of deception or a mirage. Almost five miles long, these islets (appropriately named East, Middle, and West Islands) are inaccessible from each other except by boat. They have a total land area of about one square mile (700 acres). Waves have eroded the volcanic island, creating towering sea cliffs, sea caves, and natural bridges, such as forty-foot-high Arch Rock—the symbol of Anacapa and Channel Islands National Park.

Exploring East Anacapa's 1.5-mile trail system allows visitors to experience the island's native vegetation, wildlife, and cultural history. Although for much of the year the island vegetation looks brown and lifeless, the winter rains transform the landscape. Emerging from dormancy, the native plants come alive with color. The strange tree sunflower, or coreopsis, blossoms with bright yellow bouquets that are so vivid and numerous they can sometimes be seen from the mainland. Vibrant red paintbrush, island morning glories, and pale buckwheat add touches of color to the island's palette.

Seabirds are probably the most conspicuous wildlife on Anacapa Island. Thousands of birds use Anacapa as a nesting area because of the relative lack of predators on the island. While the steep cliffs of West Anacapa are home to the largest breeding colony of endangered California brown pelicans, all the islets of Anacapa host the largest breeding colony of western gulls in the world. Western gulls begin their nesting efforts at the end of April, sometimes making their shallow nests just inches from island trails. Fluffy chicks hatch in May and June and fly away from the nest in July.

The rocky shores of Anacapa are perfect resting and breeding areas for California sea lions and harbor seals. The raucous barking of sea lions can be heard from most areas of the island. Two overlooks (Cathedral Cove and Pinniped Point) provide excellent spots to look down on seals and sea lions in the island coves.

Anacapa's rich kelp forests (ideal for kayaking, snorkeling, and diving) and tidepool areas provide visitors with the opportunity to meet some of the resident ocean animals up close. Visitors may also catch a glimpse of the fascinating undersea world of the kelp forest without getting wet. During the summer, park rangers dive into the Landing Cove on East Anacapa with a video camera. Visitors can see, through the eye of the camera, what the diver is seeing—bright sea stars, spiny sea urchins, and brilliant orange Garibaldi—by watching video monitors located on the dock or in the mainland visitor center auditorium. Divers answer questions from visitors while they are underwater with a voice communication system and some help from a park interpreter on the dock. This program is simultaneously transmitted to the mainland visitor center.

Anacapa Island has a rich human history as well. Shell midden sites indicate where Chumash people camped on the islands thousands of years ago. In addition, visitors can view the 1937 light station whose Mission Revival style buildings include the lighthouse, fog signal building, one of four original keeper's quarters, a water tank building, and several other service buildings. The original lead-crystal Fresnel lens, which served as a beacon to ships until an automated light replaced it in 1990, is now on exhibit in the East Anacapa Visitor Center.

Tim Hauf

Lighthouse, coreopsis, and Indian paintbrush

Tim Hauf

Arch Rock with tall ship

Hiking Information

Destination (from visitor center)	Distance (miles, round-trip)	Difficulty	Description
Inspiration Point	1.5	Easy	Extraordinary views. Not to be missed.
Lighthouse	.5	Easy	View the historic lighthouse built in 1932.

- Hikers must stay on trails to protect fragile vegetation and nesting seabirds and for visitor safety.
- Access to Middle (ranger-guided only) and West Anacapa (Frenchys Cove only) Islands is from the water only. Concession trips are offered throughout the year to Frenchys Cove.

Tim Hauf

Western gull with chick

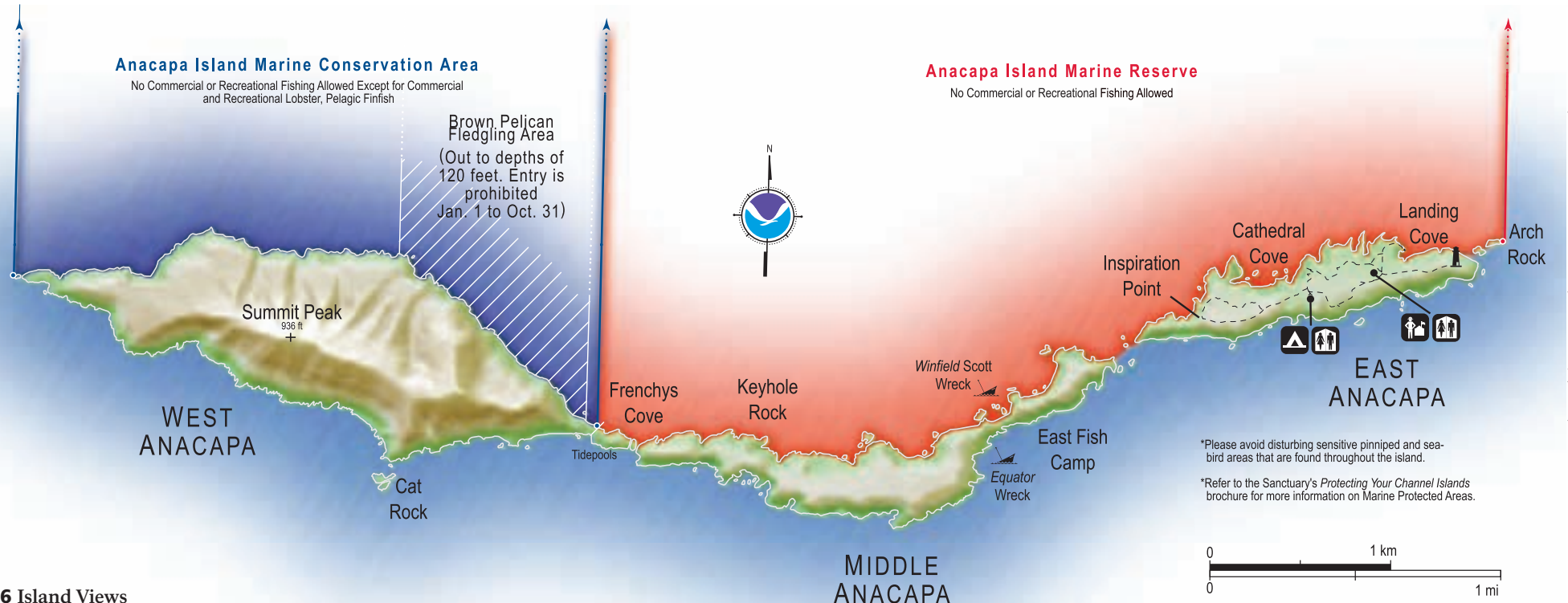
Things To Do

- The perfect place for a half-day, one-day, or short overnight camping trip. If you have time to visit just one island, this may be the place.
- Almost all trips to Anacapa are to East Anacapa Island. A limited number of trips are offered throughout the year to Frenchys Cove on West Anacapa Island.
- Although hiking options are limited with only two miles of trails, the scenery is unmatched. Except for the staircase to the top of the island, the trails are relatively flat and easy. Access to West Anacapa is from the water only and is limited to Frenchys Cove.
- Ideal place for swimming, snorkeling, diving, kayaking, and fishing (see regulations p. 20). Since Anacapa is a cliff island, access to the water is only at the Landing Cove on East Anacapa (no beaches) and at Frenchys Cove on West Anacapa.
- Underwater interpretive program is offered during the summer.
- Excellent wildlife viewing—seabirds (gull chicks in early summer), seals, and sea lions.

Refer to related articles for more information.

Island Facts

- Located in Ventura County.
- Five miles long and 1/4 mile wide
- Average rainfall is between eight and thirteen inches per year.
- The Anacapa deer mouse is only found on Anacapa Island.
- Frenchy LeDreau lived at Frenchys Cove from 1928 to 1956.
- 29 Chumash archeological sites
- 130 sea caves
- The Anacapa lighthouse, turned on in 1932, was the last permanent lighthouse built on the west coast.
- Harbor seals and California sea lions rest and breed on the island.



Channel Islands Live

Despite its location just off the coast of Santa Barbara and Ventura—and a mere stone's throw from the suburban sprawl of Los Angeles—Channel Islands National Park and National Marine Sanctuary are worlds away from the 21 million people who call southern California home.

Bringing the Islands to the People

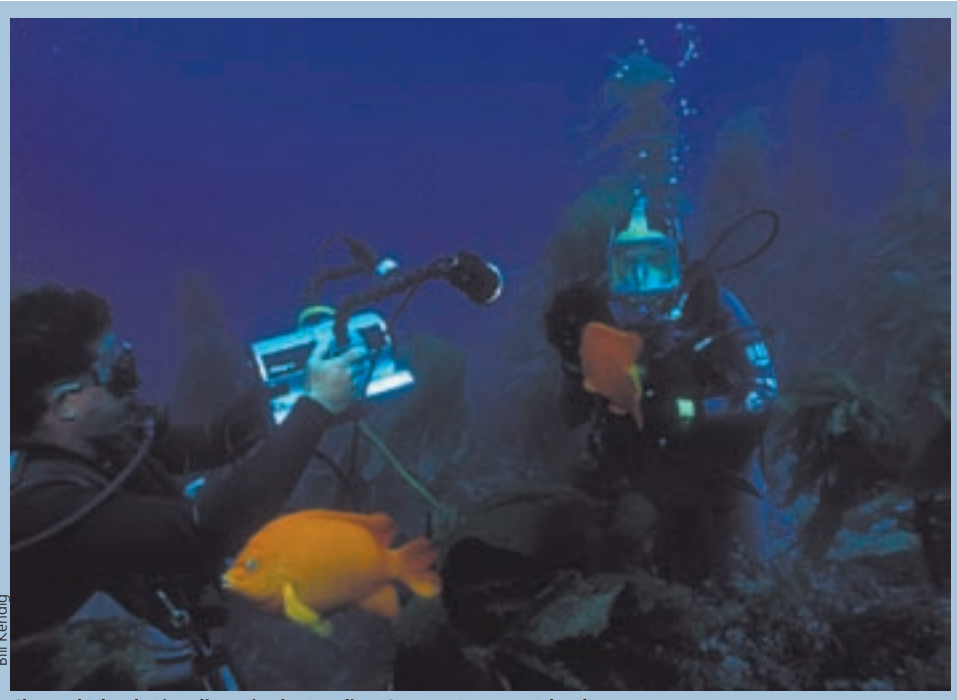
Because of the park's and sanctuary's remote location, the National Park Service developed the underwater interpretive program over 21 years ago to offer visitors a rare glimpse into the marine ecosystem off Anacapa Island. Few visitors to Channel Islands National Park are aware that almost half of the park's resources are located beneath the sea. The park boundary extends one mile around each of the five park islands and the sanctuary boundary extends six miles, encompassing one of the most diverse marine environments in the world.

Off the southern California coast and within the boundaries of the park and sanctuary lie great forests of seaweed called kelp. These towering ocean algae flourish in the waters surrounding the Channel Islands and are an integral part of the park resources. Over 1,000 species of plants and animals live in the upper 60 feet of the water column in a kelp forest. Seals, sea lions, algae, fishes, and marine invertebrates all blend together under the kelp canopy to form one of the most biologically diverse ecosystems in the world.

Traditionally, this unseen yet crucial marine ecosystem has suffered from an out-of-sight, out-of-mind philosophy. Like ocean habitats the world over, the kelp forests of the Channel Islands are increasingly affected by coastal development, offshore oil drilling, toxic dumping, and commercial and recreational fishing—but receive very little human understanding.

With the advent of the underwater interpretive program in 1985 that situation is being remedied. Through advanced underwater technology, many park and sanctuary visitors are enjoying their first journey into the marine world—without ever getting wet! The audience joins the program via television monitors on Anacapa Island or in the visitor center on the mainland. Park divers don a special microphone-equipped dive mask for communication to the surface and descend into the kelp forest camera in hand. The camera is turned on and the kelp forest comes to life. From underwater, the divers explain what the TV monitors are revealing. The kelp forest and its many inhabitants are unveiled and explained as the visitors and divers "hike" among spiny sea urchins, iridescent abalone and soft, slow-moving sea cucumbers. Brightly colored fish move through the forest and are captured through the camera's eye. The story of the kelp forest is told, and those that hear it are the very ones who will determine its future. With this program, the seeds of understanding are planted. It is the hope of the National Park Service that from these seeds will grow the desire to preserve and protect this irreplaceable resource.

During the summer, this live dive is presented on Tuesdays, Wednesdays, and Thursdays at 2:00 p.m. in the Landing Cove of Anacapa Island and broadcast back to the mainland visitor center in Ventura. It is open to the public free of charge. Thousands of people have seen this program—foreign visitors, national and local politicians, biologists, environmentalists, teachers, schoolchildren, and the general public from all over the country have participated. Hopefully, few leave unaffected by its message of conservation and protection.



Bill Kendig

Channel Islands Live divers in the Landing Cove at Anacapa Island

The Future of Channel Islands Live

The National Park Service is now looking to expand this program and develop innovative ways for the American Public and students to learn about the Channel Islands. The Ventura County Office of Education's (VCOE) wireless project provides just this venue—a way to bring the islands to the people wherever they may be. Partnering with the VCOE is a natural fit to bring live science and research from the park and sanctuary to county students and eventually to the public nationwide.

This project has special educational importance as research shows that students better understand key science concepts through multimedia and interdisciplinary approaches. Live access to the resources and scientists better prepares students with science and technology literacy needed for the 21st century.

Please visit www.nps.gov/chis for more information on the Channel Islands Live program.

Restoring Anacapa Island

ANACAPA ISLAND PROVIDES CRITICALLY important habitat for seabirds, pinnipeds, and endemic plants and animals. The island's steep, lava rock cliffs have numerous caves and crevices that are particularly important for the increasingly rare seabird species, Xantus's murrelet and ashy storm-petrel. The largest breeding colony of the California brown pelican in the United States is Anacapa Island, and a unique subspecies of deer mouse occurs only here as well.

The Anacapa ecosystem, however, has been degraded by the presence of non-native black rats (*Rattus rattus*). Rats have been introduced to over 80% of the world's islands, accounting for an estimated 40-60 percent of all bird and reptile extinctions in the world. On Anacapa, rats were introduced prior to 1940, most likely as stowaways on ships to the island. They have had large impacts on nesting seabirds, preying heavily on eggs and chicks of seabirds as their food source. Approximately 40 percent of Xantus's murrelet nests on Anacapa have shown evidence of egg predation. Rats also prey directly on the native island deer mouse.

In the mid-1990s the park teamed with the Island Conservation and Ecology Group (ICEG) to determine if and how rats could be eradicated from Anacapa Island. ICEG, active internationally in the restoration of island ecosystems through the eradication of non-native species, was aware of several successful eradications of rats from islands, particularly in New Zealand. Rats have been eradicated on over 100 islands worldwide by applying rodenticide bait; trapping alone has never succeeded.

Anacapa Island presented special challenges. The island has extensive steep cliffs, making placement of bait into the territory of every rat difficult. The endemic deer mice would feed on any bait that was attractive to rats. The endangered California brown pelican, extremely sensitive to disturbance, breeds and nests on a large portion of the island during eight months of the year.

Following extensive consultation with experts, the park and ICEG determined that rats could be eradicated through the distribution of bait pellets with brodifacoum, the anticoagulant used in the majority of successful rat eradications. This product contains half the amount of rodenticide found in products that homeowners commonly purchase in the local grocery store, and it would not accumulate in the environment since it breaks down into harmless carbon dioxide in water.

Fortuitously, the American Trader Trustee Council (ATTC), consisting of California Department of Fish and Game, National Oceanic and Atmospheric Administration, and the U.S. Fish and Wildlife Service, had court settlement monies resulting from an oil spill in southern California. The purpose, in part, of the settlement monies was to restore seabird populations injured by the oil spill. The trustees supported eradication of the black rat from Anacapa Island because it is one of the most significant islands for breeding seabirds in southern California.

The bait application (from a hopper suspended under a helicopter) was scheduled during the fall, the end of the dry season, when rats were very hungry and both visitation and bird populations were low. Protection of the native deer mice had two components: a) holding a small population of mice in captivity, and b) maintaining deer mice in the wild by treating East Anacapa one year prior to treating Middle and West Anacapa.

Phase I, application of bait to East Anacapa Island, was completed in December 2001 and Phase II, treatment of Middle and West Anacapa, was completed in fall 2002. Extensive ecological monitoring pre- and post-rat eradication was conducted to determine the environmental impacts of the project. This monitoring has found substantial recovery of rare seabirds and other native wildlife on Anacapa Island following the eradication of rats. Mouse populations have returned to normal, and they are breeding abundantly in the wild, while juvenile side-blotched lizards and slender salamanders are thriving in the absence of rats.

Scientists have recorded a dramatic and positive response by Xantus's murrelets. Thomas Hamer, of Hamer Environmental, reports, "We have detected increases in the number of birds visiting nesting colonies ranging from 58 percent to more than two times higher when compared to the number of detections that we recorded per night in any of the previous years." Nest surveys by researchers from Humboldt State University have found 14 murrelet nests, including the first documented on Cat Rock since 1927.

Channel Islands National Park Superintendent Russell Galipeau, comments, "This project was critical to protecting and restoring the rare and unique wildlife on Anacapa. The National Park Service is dedicated to ensuring a diverse, naturally functioning island ecosystem."

Numerous environmental groups endorsed the project including the American Bird Conservancy, Pacific Seabird Group, California Audubon Society, Endangered Species Recovery Council, Audubon Living Oceans, and Jean-Michel Cousteau's Ocean Futures. American Bird Conservancy President, George H. Fenwick, stated, "The Anacapa Island project is precisely the type of well-designed, extensively researched, and responsibly implemented program that the American Bird Conservancy supports and encourages. The long-term benefits of rat eradication on Anacapa Island are enormous for the conservation of one of North America's most distinctive ecosystems."

Partners in Preservation

THE PARK HAS MANY PARTNERS THAT assist in preserving and protecting the Channel Islands. Together, we are a bulwark for cultural and biological diversity, preserving the islands' history and prehistory, and protecting vital habitat for scores of marine and terrestrial plant and animal species. In addition, we provide for the enjoyment of these resources in such a manner that will leave them unimpaired for future generations.

In this issue, we are highlighting two of the partners, Channel Islands National Marine Sanctuary and Western National Parks Association. Please visit "Our Partners" at www.nps.gov/chis for a complete list of park partners.

Western National Parks Association

Western National Parks Association (WNPA) is a nonprofit cooperating association of the National Park Service. Headquartered in Tucson, Arizona, the association was founded in 1938 with the mission of promoting the preservation of the National Park System and its resources by creating greater public appreciation through education, interpretation, and research. Today, WNPA operates bookstores at sixty-five National Park Service sites throughout the western United States, plus an online store with more than 600 educational products. In addition to developing publications, WNPA supports park research and helps fund programs that make park visits more meaningful.

One of WNPA's founding goals was to create and publish park-related information unavailable elsewhere. Currently, the WNPA has more than 175 books in print with many new publications introduced yearly.

WNPA supports parks by producing more than a half million pieces of free literature annually, including trail guides, newspapers, schedules, and brochures.

Since 1938, the WNPA has contributed more than $25 million to national parks, generated through store sales to park visitors and the support of its members.

For more information about WNPA, please visit www.wnpa.org.

Books and materials about Channel Islands National Park are available for sale through WNPA at the park visitor center or by mail order by calling (805) 658-5738.

Western National Parks Association's *Channel Islands National Park* is just one of the books available for sale at the Vistor Center and online.

Channel Islands National Marine Sanctuary

In 1980 approximately 1,128 square nautical miles of the Santa Barbara Channel was given special protected status with the designation of Channel Islands National Marine Sanctuary (CINMS). The sanctuary is an area of national significance because of its exceptional natural beauty and resources. CINMS is part of a large network of 13 National Marine Sanctuaries and one Marine National Monument. The sanctuary encompasses the waters that surround Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara Islands, extending from mean high tide to six nautical miles offshore around each of the five islands. The sanctuary's primary goal is the protection of the natural and cultural resources contained within its boundaries. CINMS protects resources and connects to the public with the programs described below.

Research: Sanctuary research efforts focus on evaluating ecosystem health, collecting data on living marine resources, assessing the impact of human activities, implementing effective resource management strategies, and increasing understanding of the importance of the sanctuary. The sanctuary works with a variety of partners to manage the resources of the sanctuary, such as research on seabirds, deepwater characterization, and monitoring of kelp forests and marine reserves. CINMS provides a staff with a wealth of expertise as well as the use of its research vessels—the R/V *Shearwater* and the R/V *Xantu*—and its aerial monitoring program in moving forward with its commitment to furthering research and understanding.

Resource Protection: The sanctuary emphasizes the protection of the marine environment for the long-term benefit and enjoyment of the public. Most of the sanctuary is open to multiple uses, and the harvesting of kelp, fish, and invertebrates is permitted in many areas. Within the boundaries of the sanctuary there are several regulatory agencies (federal, state and local) that have overlapping jurisdictions and management responsibilities. A network of Marine Protected Areas (MPAs) that restrict and/or prohibit harvest has been established by NOAA and the California Fish and Game Commission to protect and restore habitats and ecosystems in 21 percent of the sanctuary. See the next page for a complete description of the Channel Islands MPAs.

To protect the natural and cultural resources of the sanctuary, discharge of untreated sewage and certain food wastes, drilling, dredging, oil exploration, and disturbance of cultural artifacts, seabirds and marine mammals are prohibited. For a complete listing of sanctuary regulations please visit channelislands.noaa.gov.

The National Marine Sanctuary Program (NMSP) is updating the management plan for the Channel Islands National Marine Sanctuary. This includes a review of resource protection actions, education and research programs, the program's resource and staffing needs, and sanctuary regulations and boundaries. The management plan is a road map for sanctuary management that serves to: 1) guide site management toward achievement of the sanctuary's goals using the best means available; and 2) inform sanctuary constituents, including the general public, about the sanctuary, its regulations, and the management actions it has planned for the next five years. The sanctuary anticipates publishing the final plan in early winter 2008.

CHIS Marine Sanctuary

Garibaldi and diver in kelp forest, Anacapa Island

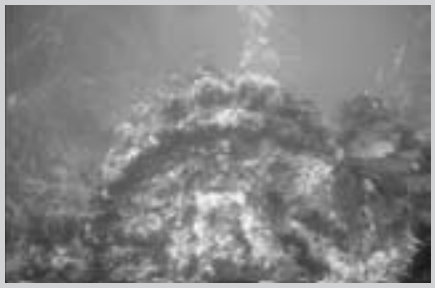
Maritime Heritage: CIMNS is responsible for the protection and preservation of submerged remains of the past that occupy the seafloor of the sanctuary. Cultural and historic submerged sites include archeological remains of shipwrecks and prehistoric land sites. Sanctuary stewardship responsibilities include a mandate to inventory sites, encourage research, provide public education, and oversee responsible visitor use.

Education and Outreach: The goal of the CINMS's education and outreach program is to promote understanding, support, and participation in the protection and conservation of marine resources. The sanctuary provides a variety of outreach and educational programs for teachers, students, resource users, and the general public. Current programs include annual workshops for teachers and marine educators including teachers at sea program; internship and volunteer opportunities (for information about the Channel Islands Naturalist Corps, a joint sanctuary and park volunteer program, see page 24); multicultural outreach through the MERITO program (Multicultural Education for Resources Issues Threatening Oceans); exhibits and signage in museums, aquaria, and public sites; sanctuary Interactive Kiosks; community outreach events, educational brochures and posters; and a website that hosts over 7,000 pages of information about the sanctuary. CINMS also provides additional opportunities for community involvement through the Sanctuary Advisory Council. The council provides a public forum for consultation and community deliberation on resource management issues affecting the waters surrounding the Channel Islands.

Contact Information:
Channel Islands National Marine Sanctuary
113 Harbor Way #150
Santa Barbara, CA 93109
(805) 966-7107

3600 S. Harbor Blvd. Ste.111
Oxnard, CA 93035
(805) 382-6149

http://channelislands.noaa.gov



One of over 140 protected shipwrecks in the sanctuary and park, the steamer *Winfield Scott* grounded and sank off the north shore of Middle Anacapa in 1853.

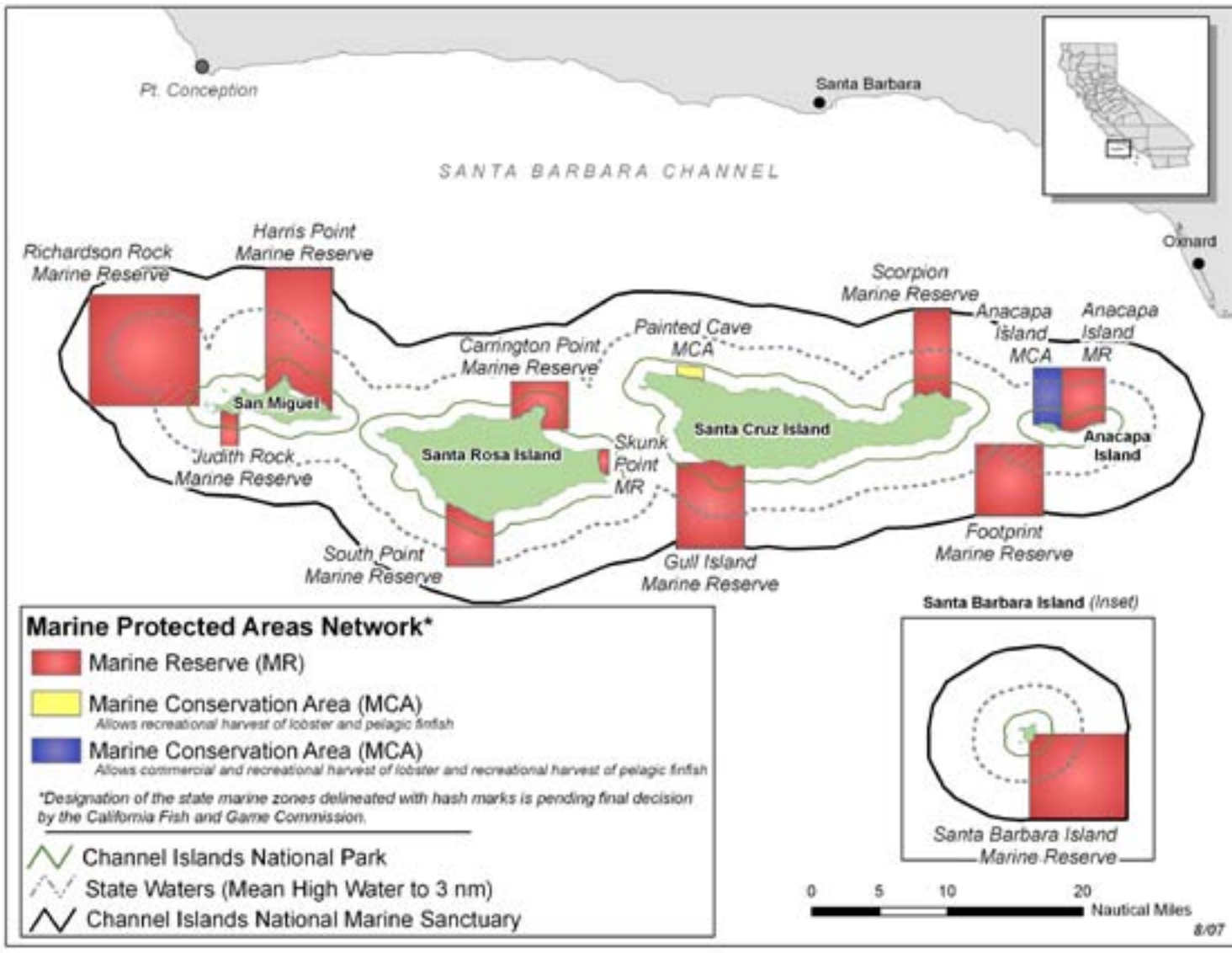
Sanctuary and Park Shipwrecks

There are many documented shipwrecks in the waters of the sanctuary and park such as the four-masted schooner *Watson A. West*, stranded off of San Miguel Island and the California Gold-Rush passenger steamer *Winfield Scott* which stranded on Anacapa Island and is listed in the National Register of Historic Places. The significant number of shipwrecks within the sanctuary's and park's boundaries can largely be attributed to prevailing currents and weather conditions, combined with natural hazards.

The shipwreck remains of the Channel Islands reflect the diverse range of activities and nationalities that traversed the Santa Barbara Channel. European sailing and steam vessels, California-built Chinese junks, American coastal traders, vessels engaged in island commerce, and a Gold-Rush-era side-wheel steamer have all been lost in these waters. Each has a story to tell about the history, technology and society of earlier times. Between the years 1853 to 1980, an inventory of over 140 shipwrecks has been documented in Channel Islands National Marine Sanctuary and National Park. To date about twenty sites have been located. The sanctuary and park have a very active shipwreck reconnaissance program, and several of the submerged sites have been recorded through the development of underwater maps.

Channel Islands Marine Protected Areas

MARINE PROTECTED AREAS (MPAs) ARE special marine zones established to protect and restore habitats and ecosystems, conserve biodiversity, provide a refuge for sea life, enhance recreational and educational opportunities, provide reference areas for scientific research, and may help rebuild depleted fisheries. One type of MPA is a marine reserve, a new tool in marine ecosystem management, where all forms of take, such as fishing, are prohibited. Currently, less than one percent of the world's oceans and less than 0.01 percent of U.S. waters are designated as marine reserves.



Designation Process

In 1998 a local recreational fishing group recommended the establishment of MPAs around the Channel Islands as a response to declining fish populations. In April 1999 the National Marine Sanctuary Program (NMSP) and the California Department of Fish and Game (CDFG) worked with the Sanctuary Advisory Council (SAC) to create a community group to consider MPAs in the water around the Channel Islands. The community group was comprised of fishermen; conservationists; divers; and park, sanctuary, and CDFG personnel. For two years, the group met monthly to receive, weigh, and integrate advice from a science advisory panel, a team of economists, and the public.

Ultimately, the community group agreed MPAs could protect, maintain, and restore marine ecosystems, provide a precautionary measure against the impacts of an expanding human population and management uncertainties, offer education and research opportunities, and provide reference areas. The community group did not agree on a single MPA network, rather it forwarded all of its advice to the SAC and on to the NMSP and CDFG to craft an MPA network recommendation. Based on the community's work and scientific input (incluing over 20 years of scientific monitoring of the kelp forest by the National Park Service), the agencies developed an MPA network that connected nearshore and deeper offshore waters, representative portions of each marine habitat, such as kelp, rocky reef, soft sediment and submarine canyons.

In October 2002 the CDFG Commission approved the NMSP and CDFG MPA network recommendation. In 2003 the state of California established 102 square nautical miles of MPAs in state waters (0 to 3 nautical miles). In June 2006, to provide protection to the seafloor and groundfish, National Ocean and Atmospheric Association's (NOAA) Fisheries Service designated the federal waters (3 to 6 nautical miles offshore) beyond the state MPAs as habitat areas of particular concern and prohibited bottom fishing under the Magnuson-Stevens Fishery Conservation and Management Act. On July 29, 2007, the NMSP prohibited any other take within the federal water MPAs under the National Marine Sanctuaries Act, adding 110.5 square nautical miles as marine reserves and 1.7 square nautical miles as marine conservation areas. As of July 2007, the MPA network in state and federal waters is 214.1 square nautical miles.

The total size of the MPA network will be 240.4 square nautical miles and encompass 21 percent of the sanctuary waters in 11 marine reserves and two marine conservation areas. When completed the Channel Islands MPA network will be the largest in the continental United States. Nearly 80 percent of the sanctuary remains open to fishing in accordance with normal state and federal fishing regulations.

There are a variety of types of MPAs in state, sanctuary, and park waters, including:

MARINE RESERVE (MR)
Prohibits all take of living, geological, or cultural resources. Scientific take may be permitted.

MARINE CONSERVATION AREA (MCA)
Prohibits the same activities as a marine reserve, except in the Anacapa MCA com mercial and recreational harvest of lobster and recreational harvest of pelagic finfish[1] is allowed, and in the Painted Cave MCA recreational harvest of lobster and pelagic finfish is allowed. Scientific take may be permitted.

Unless specifically prohibited, activities such as diving, surfing, swimming, and boating are allowed as long as take restrictions are followed. Anchoring within and transit through MPAs with catch onboard is allowed, so long as fishing gear is stowed and not in use.

Working Together—Monitoring, Outreach and Enforcement

The sanctuary, park, state of California, US Coast Guard, university partners, and the public are working together to monitor MPA effects, develop and distribute information to enhance compliance, and enforce the network.


Robert Schwemmer

The sanctuary's research vessel *R/V Shearwater* serves as an important platform for scientists to study the MPAs around the Channel Islands.


Robert Schwemmer

California sheephead populations off southern California have declined because of fishing pressure and reduced kelp beds.

Agency and university scientists are looking at how well the MPAs in the Channel Islands restore fishes and invertebrates and their habitats. Within MPAs, the abundance, size, biomass, and diversity of targeted (fished) species are expected to increase as compared to areas outside of the MPAs[2]. Also, habitats supporting marine populations are expected to benefit via reduced disturbance by fishing gear.

The sanctuary, park, and state continue to monitor impacts of the nearshore MPAs created in 2003. For the offshore MPAs established in 2007, the sanctuary predicts the impacts to be minimal on existing commercial and recreational fishing because there is little fishing activity in the deeper offshore waters as compared to the near shore waters. The sanctuary expects beneficial impacts to occur for non-consumptive recreational users because of increases in wildlife diversity providing enhanced viewing opportunities. Benefits may also be derived from the decrease in the density of users or in the reduction in conflicts with consumptive users within MPAs. The MPA network is expected to be beneficial to management, research, and education too, because relatively undisturbed areas (i.e., reference areas) will be available for comparison with areas outside the MPAs. Lastly, the network is expected to be beneficial for intrinsic values and for future generations.

In February 2008 the sanctuary, CDFG, and Partnership of Interdisciplinary Studies of Coastal Oceans will host a special session at the California Islands Symposium and provide a five-year comprehensive review of the state MPAs established in 2003. There will be presentations on the biological and economic monitoring, education and outreach efforts, and compliance over the last five years.

[1]Pelagic finfish are defined as: northern anchovy *(Engraulis mordax)*,barracudas *(Sphyraena* spp.*)*, billfishes (family Istiophoridae), dolphinfish *(Coryphaena hippurus)*, Pacific herring *(Clupea pallasi)*, jack mackerel *(Trachurus symmetricus)*, Pacific mackerel *(Scomber japonicus)*, salmon *(Oncorhynchus* spp.*)*, Pacific sardine *(Sardinops sagax)*, blue shark *(Prionace glauca)*, salmon shark *(Lamna ditropis)*, shortfin mako shark *(Isurus oxyrinchus)*, thresher sharks *(Alopias* spp.*)*, swordfish *(Xiphias gladius)*, tunas *(*family Scombridae*)*, and yellowtail *(Seriola lalandi)*.

[2]Species that are not fished or not fished heavily may not show significant changes in abundance and size as a result of the MPA designation.

Camping

CAMPING IS AVAILABLE YEAR-ROUND ON ALL FIVE ISLANDS IN CHANNEL ISLANDS NATIONAL Park in National Park Service-managed campgrounds. There is currently one established campground on each island: above the landing cove on Santa Barbara; on the east islet of Anacapa, at Scorpion Ranch on Santa Cruz, at Water Canyon on Santa Rosa, and above Cuyler Harbor on San Miguel. No camping is allowed on The Nature Conservancy's western 76 percent of Santa Cruz Island. Limited backcountry camping is available on Santa Cruz and Santa Rosa Islands. Please refer to the "Backcountry Camping" section below for more information.

Camping Transportation

Because concession boats fill to capacity much faster than campground limits are met, campers must first secure transportation for an overnight trip to Channel Islands National Park. For transportation information, please refer to the "Transportation—How To Get There" section on page 2.

Camping Reservations

Camping reservations are required for all of the campgrounds. There are no entrance fees to visit the park, however, campground fees are $15.00 per night per site. Reservations can be made no more than five months in advance. Information required for the reservations includes camping dates, transportation information, and number of campers. Reservations can be made by calling (877) 446-6777 or visiting www.recreation.gov. A confirmation notice will be mailed to campers.

Campground Facilities

Camping conditions are primitive, and users must camp within designated areas. All campgrounds are equipped with picnic tables and pit toilets. Water is not available at campgrounds and must be brought with you except at the Santa Rosa and Santa Cruz Island campgrounds. No fires are permitted. Enclosed camp stoves are permitted. Outer island campgrounds (San Miguel and Santa Rosa) have windbreaks for each campsite. Campsites are generally located close to one another. No trash containers are provided; campers must pack out their own trash.

Due to scavenging animals (including birds), campers are required to store all food and trash in animal-proof containers. National Park Service food storage boxes are provided at campsites, but coolers, plastic Rubbermaid-type boxes, or other types of containers with sealing lids may be used as well.

Weather

Campers should be prepared for a variety of weather conditions, especially on the outer islands. Thirty-knot winds are not uncommon on Santa Rosa and San Miguel Islands. Sturdy, low-profile tents, stakes, and line for securing tents to ground, table, or wind shelters are recommended. Fog can occur on the islands during any season producing cool, damp conditions. All of the campgrounds, except eastern Santa Cruz, are located away from trees and shade. Overexposure to the wind and sun can be a serious problem. Visitors are advised to bring supplies for an extra day in case boats are unable to pick up campers due to sea conditions.

Tim Hauf

Anacapa Island campground

Tim Hauf

San Miguel Island campground

Kathy deWet-Oleson

Scorpion Ranch campground, Santa Cruz Island

Tim Hauf

Water Canyon campground, Santa Rosa Island

Campground Information

Island	Required Reservation	Distance From Landing to Campground	Number of Campsites	Campground Capacity
Anacapa	Yes	154 stairs, 1/2 mile	7	30
eastern Santa Cruz (Scorpion Ranch)	Yes	1/2 mile, flat	40	240
western Santa Cruz (The Nature Conservancy)	NO CAMPING ALLOWED			
Santa Rosa	Yes	1 1/2 miles, flat	15	75
San Miguel	Yes	1 mile; steep uphill	9	30
Santa Barbara	Yes	1/2 mile, steep uphill	10	30

Suggested Camping Gear

Campers must be prepared for the primitive campground facilities and weather conditions. Supplies and gear are not available on the islands. Gear must be transported up ladders at most landing areas, and carried some distance to the campgrounds. Packing your gear in backpacks, duffle bags, and containers with handles makes transportation easier. The boat concessionaire requires that items weigh no more than 45 pounds each. On some islands, visitors may get wet during loading and off-loading, so waterproof your gear. An extra pair of shoes packed in waterproof material is recommended. Campers should plan to layer clothing, as weather conditions tend to change from cool and damp in the mornings to bright, warm, and windy during the afternoons. Clothing that protects against wind is advisable year-round. Hiking boots are recommended for most island trails.

Additional "needed" gear includes: hat/visor/cap; sunglasses; windbreaker/light jacket; shirts and pants that can be layered; normal clothing needs; food; sturdy tent; campstove/cooking gear; water (1 gallon per person, per day); sunscreen; flashlight; sleeping bag; matches; and first aid kit. "Suggested" gear includes: bathing suit; gloves; poncho/rain jacket; sneakers/light footwear; towel; seasick pills; garbage bags; camera/film; binoculars; toiletries; and sleeping pads.

Backcountry Camping

BACKCOUNTRY CAMPING IS AVAILABLE YEAR-ROUND AT THE DEL NORTE CAMPSITE NEAR Prisoners Harbor on Santa Cruz Island. Also, during certain times of year, backcountry beach camping is allowed on Santa Rosa Island. The National Park Service opened these islands to limited backcountry camping in recognition of their rare wilderness values. As you explore these wild areas by kayak or on foot, please take the responsibility to help us protect and preserve these delicate natural resources for future generations. The following information is just an introduction to backcountry camping in the park. Please refer to the "Backcountry Camping" site bulletin for more information. This site bulletin is available at our website, www.nps.gov/chis, or from the park visitor center and is required reading prior to making your backcountry reservations.

WARNING: While backcountry camping is an incredible experience, it is not for the inexperienced backpacker or kayaker. Due to difficult weather, rugged terrain, and off-trail hiking, backcountry camping is an arduous endeavor and should be undertaken only by experienced, well-conditioned backpackers and kayakers.

Santa Cruz Island

Del Norte is currently the only backcountry campground on Santa Cruz Island. It is nestled in a shaded oak grove, about 700 feet above sea level, and provides scenic views of the island's pristine coastline. The hike to the site is 3.5 miles from Prisoners Harbor and 12 miles from Scorpion Anchorage. The campground has four primitive campsites (four persons per site) and users must camp within these designated sites. A picnic table, animal-proof container, and pit-style toilet are provided (campers must bring their own toilet paper). Water is not available.

Santa Rosa Island

Backcountry camping on Santa Rosa Island is currently limited to certain beaches between June 1st and December 31st. Hiking is along the beach and rugged, unsigned dirt roads or unmaintained animal paths. The closest beach for camping is 10 miles from the boat/plane drop-off location. Water is available year-round in some of the island's canyons.

Weather and Reservations

Campers should be prepared for a variety of weather conditions. Strong winds are not uncommon. Fog can occur on the islands during any season producing cool, damp conditions. Shade is limited and overexposure to the wind and sun can be a serious problem. Visitors are advised to bring supplies for an extra day in case boats are unable to pick up campers due to sea conditions.

Backcountry campers must first secure boat transportation through the park's boat or plane concessionaires or by their own private vessel. Camping reservations are required in advance. For Del Norte, call (877) 446-6777 or visit www.recreation.gov. For Santa Rosa beachcamping, call (805) 658-5711.

Help Stop the Spread of Non-Native Species

Non-native, invasive species threaten endangered animals and plants on the Channel Islands and are costly to control. Learn how you can help prevent the introduction and spread of non-native species before they become a problem.

Islands on the Edge: The Threat of Non-Native Plants and Animals

Plants and animals living on islands are especially vulnerable to extinction due to the physical boundaries, limited populations, and lack of genetic variability. One threat to these island species are non-native, invasive species. Non-native, invasive species are also called introduced species or exotic species. These terms refer to plants and animals that originate elsewhere and are brought into a new area, where they may dominate the local species or in some way negatively impact the environment for native species.

For example, many non-native, invasive weed species are plants that grow or spread aggressively, taking over important wildlife habitat, devastating shelter and forage, and reducing the diversity and quality of native habitat. These weeds often do not hold and protect the soil the way native plants do, so erosion increases and causes sedimentation of streams, harming fish populations and water quality.

The primary visitor landing points on the park islands are often where we first find non-native, invasive species. Nearly half of the endangered plants and animals in the United States have been negatively affected by non-native, invasive species. In addition, these species cause an estimated $138 billion in economic damage each year in the United States.

How You Can Help

If you plan to visit the Channel Islands, you probably care a great deal about protecting them from harm. Ironically, those who enjoy visiting the islands can also be responsible for spreading non-native, invasive species. You can help prevent the introduction and spread of these non-native plants and animals, which is far more effective than costly eradication programs.

• Clean and Inspect Clothing, Gear, and Containers for Weeds and Other "Hitchhikers"

Many weed seeds readily stick to clothing and camping gear. These seeds can later fall off and germinate, establishing new weed colonies. Weeds and other non-native organisms can hitch a ride in camping equipment, food containers and baggage. Visitors should clean and inspect their footwear, clothing, and gear (especially shoe treads and Velcro) for seeds and soil before boarding boats and moving between campsites and islands. Socks and cuffs of pants should be given particular attention. Sleeping bags, sleeping pads, and tents should be cleaned and inspected for soil, invertebrates, and seeds before leaving the mainland. If you are already on the island, please use the nearby boot brushes—simply run each foot though the brush several times to remove weed seeds and other "stowaways" caught in shoe treads and laces.

• While Hiking

Trails can be pathways for a lot more than just people. Weeds often spread along trails and then to adjacent uninfested areas. You can help prevent this from happening by always staying on designated trails, avoid weed-infested areas, and by not picking or transporting plants when hiking on the islands. Pack out all trash. Just because a bit of trash—apple cores, orange seeds, etc.—is organic, doesn't mean it can be left behind. Please be sure to pack out all trash. While most domestic fruit and vegetable species are not invasive, some can germinate and become pests.

• Campfires

Campfires are prohibited on the islands and common sense will tell you that they are dangerous and potentially harmful in other ways. In addition to the threat of wildfire, firewood brought from the mainland can harbor organisms that can be very destructive. This includes the fungal-like disease "Sudden Oak Death" that kills several species of native trees. You can help prevent the spread of this disease and other harmful organisms by not transporting firewood under any circumstances.

• Domestic Animals

Although most people know that landing of pets on the islands is prohibited, they probably never imagine the danger domestic animals can pose to wildlife. In 1999 canine distemper killed almost all of the island foxes on the eastern portion of Catalina Island. Island foxes are highly sensitive to disease, and pets and their droppings can spread pathogens and cause other problems for wildlife. Even vaccinated and apparently healthy animals can be carriers of diseases that are potentially lethal to island foxes. Although no one wants to leave a pet at home when they visit the islands, this is probably the best way of avoiding the temptation to land your pet on the islands.

• Private Boaters and Rodents

Private boaters should be particularly diligent to ensure that no unwelcome animals are living on their boats that could be accidentally transferred to an island. Rats and mice should be eliminated on all boats through the use of traps. Proper storage of food and monitoring for signs of rodents will go a long ways to ensuring that your boat does not become the accidental conveyance for rodents to the Channel Islands.

This information was compiled in collaboration with Channel Islands Restoration, a non-profit group established to restore habitat in sensitive and unique natural areas in the park and adjacent mainland. Visit www.channelislandsrestoration.com or www.nps.gov/chis for more information.

Channel Islands

National Park Service
U.S. Department of the Interior

Channel Islands National Park

Public Notice

Affected Areas—All Park Islands

Pursuant to the Authority of the Superintendent under the Code of Federal Regulations Title 36 section 1.5 (a)(1)&(2) and section 2.1(a)(2) the following public use restrictions are imposed on the aforementioned area, to prevent introduction of non-native species and use of unauthorized motorized vehicles and bicycles.

Therefore the following types of items shall not be transported or delivered to any island within Channel Islands National Park:

- Pets or any animal
- Service animals, except by permit from the superintendent
- Live or Potted Plants
- Soil
- Cut Flowers
- Firewood or any wood with attached bark
- Corrugated boxes
- Tools or equipment with attached soil
- Motorized vehicles
- Bicycles

4-16-2007

By Order of the Superintendent, Russell E. Galipeau, Jr. Date
Channel Islands National Park

Pursuant to CFR title 36 1.5 (c) - Determination - this restriction action is necessitated for the protection of the islands unique values, ecological systems and protection of breeding populations of marine mammals, endangered species of seabirds, eagles, islands foxes and other unique and rare species of flora and fauna inhabiting the Channel Islands National Park. Less restrictive measures would have the potential for introduction of non-native species that could adversely effect many species and/or endanger the islands ecosystems. Additionally the unauthorized vehicle and bicycle use would pose significant safety risks and adversely affect visitor experience and park values.

EXPERIENCE YOUR AMERICA


Ken Owen, Channel Islands Restoration

Horehound


Ken Owen, Channel Islands Restoration

Yellow star-thistle


Ken Owen, Channel Islands Restoration

Cocklebur


Ken Owen, Channel Islands Restoration

Bur-clover


Kathy de Wet-Oleson

Fennel

Black rat

Please help us prevent the spread of these non-native species throughout the islands.

Santa Cruz Island

ACCORDING TO LEGEND, SANTA CRUZ ISLAND WAS NAMED FOR A PRIEST'S STAFF accidentally left on the island during the Portola expedition of 1769. A Chumash Indian found the cross-tipped stave and returned it to the priest. The Spaniards were so impressed that they called this island of friendly people "La Isla de Santa Cruz," the Island of the Sacred Cross. Today the protection and preservation of Santa Cruz Island is divided between The Nature Conservancy and the National Park Service. The Nature Conservancy owns and manages the western 76 percent of the island, while the eastern 24 percent is owned and managed by the National Park Service.

In its vastness and variety of flora, fauna, and geology, Santa Cruz Island resembles a miniature California. At over 96 square miles in size and the largest island in California, Santa Cruz contains two rugged mountain ranges; the highest peaks on the islands (rising above 2,000 feet); a large central valley/fault system; deep canyons with year-round springs and streams; and 77 miles of craggy coastline cliffs, giant sea caves, pristine tidepools, and expansive beaches. One of the largest and deepest sea caves in the world, Painted Cave, is found on the northwest coastline of Santa Cruz. Named because of its colorful rock types, lichens, and algae, Painted Cave is nearly a quarter-mile long and 100 feet wide, with an entrance ceiling of 160 feet and a waterfall over this entrance in the spring.

These varied landforms support more than 600 plant species in 10 different plant communities, from marshes and grasslands to chaparral and pine forests. There are 140 landbird and 11 land mammal species; three amphibian and five reptile species; large colonies of nesting seabirds, breeding seals, and sea lions; and other diverse marine animals and plants. Owing to millions of years of isolation, many distinctive plant and animals species have adapted to the island's unique environment, including the island scrub jay and eight plant species found only on Santa Cruz and nowhere else in the world.

The island is also rich in cultural history with over 9,000 years of Chumash Native American Indian habitation and over 150 years of European exploration and ranching. Santa Cruz Island, known by the Chumash people as *Limuw* (translates to "in the sea"), was home to a dozen villages that housed over 1,000 people. Many of these islanders mined extensive chert deposits for tools and produced "shell-bead money," used as a major trade item by tribes throughout California. The largest village on the island as well as on the northern Channel Islands, *Swaxil*, occupied the area of Scorpion Ranch at the time of Spanish contact (1542). Large plank canoes, called *tomols*, provided transportation between the islands and mainland. Remnants of their civilization can still be seen in thousands of shell middens on the island.

Remnants of the ranching era also can be seen throughout the landscape of the island. Adobe ranch houses, barns, blacksmith and saddle shops, wineries, and a chapel all attest to the many uses of Santa Cruz in the 1800s and 1900s. At the Scorpion Ranch adobe, the massive oven that produced bread for the entire island is still intact.


Tim Hauf

Smugglers Cove, Santa Cruz Island


Tim Hauf

Scorpion Anchorage, Santa Cruz Island


B. Moose Peterson

Island scrub-jay

Things To Do

- One-day trips and short or long overnight camping trips. (Only one-day trips are offered to The Nature Conservancy property, including one of the best hikes in the park—along the coast from Prisoners Harbor to Pelican Bay.)
- Hiking options are unlimited with over 14,500 acres to explore on Eastern Santa Cruz Island.
- Great place for swimming, snorkeling, diving, and kayaking. Beach access is available at Scorpion Anchoage, Smugglers Cove and Prisoners Harbor.
- Shade is available in the campground.
- Birdwatchers will not want to miss the endemic island scrub-jay—only found on Santa Cruz Island and no other place in the world.

Refer to related articles for more information.

Island Facts

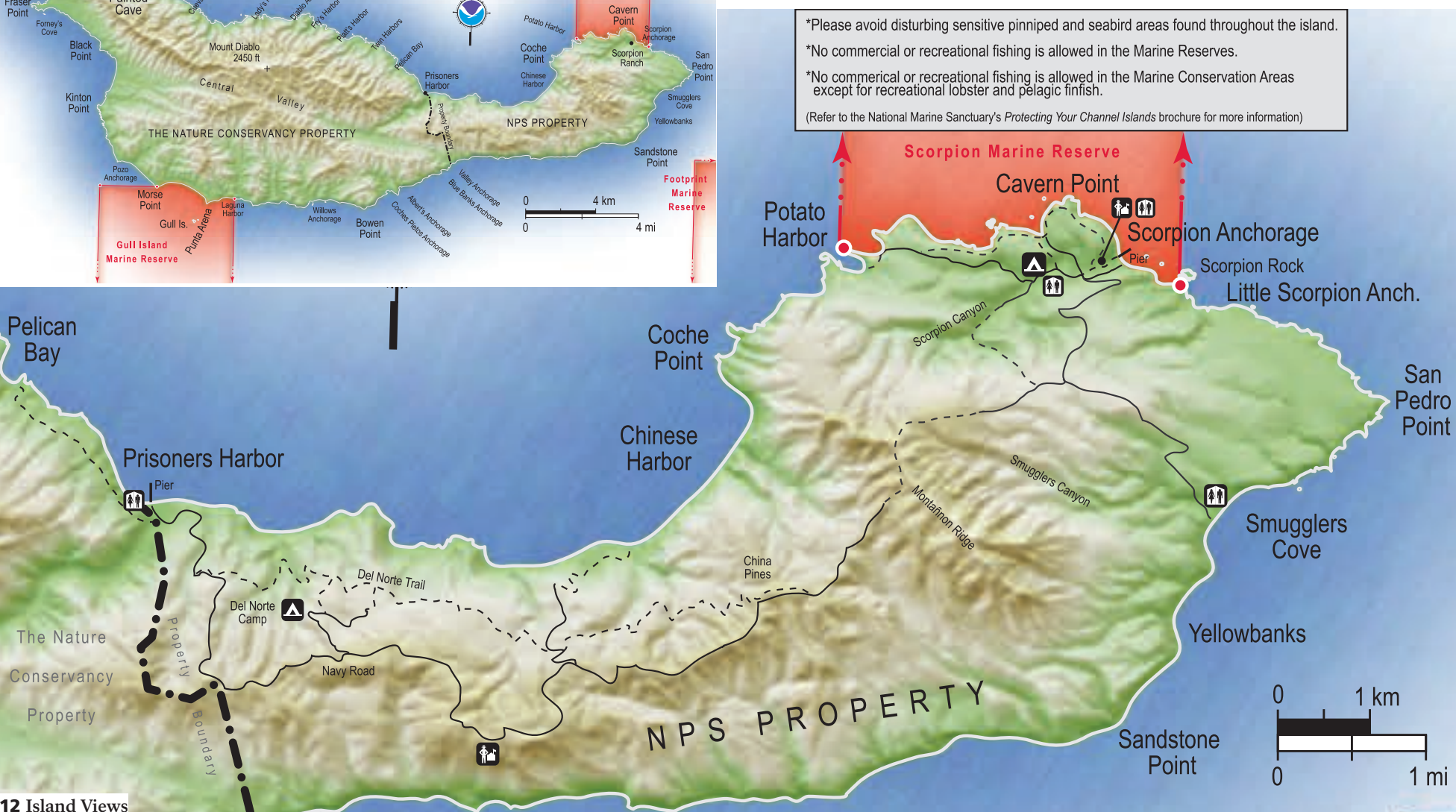
- Located in Santa Barbara County.
- Santa Cruz is California's largest island, almost three times the size of Manhattan. Approximately 24 miles long and up to 6 miles wide; 96 square miles; 62,000 acres.
- Average rainfall—20 inches. Temperature range—20° F to 100° F.
- Painted Cave is one of the largest known sea caves in the world.
- Diablo Peak (Devil's Peak) is the tallest peak on the Channel Islands at 2,450 ft.
- Santa Cruz has the greatest number of plant and animal species of all the Channel Islands.

*Please avoid disturbing sensitive pinniped and seabird areas found throughout the island.

*No commercial or recreational fishing is allowed in the Marine Reserves.

*No commerical or recreational fishing is allowed in the Marine Conservation Areas except for recreational lobster and pelagic finfish.

(Refer to the National Marine Sanctuary's *Protecting Your Channel Islands* brochure for more information)



Restoring Santa Cruz Island

CLOSE TO THE MAINLAND YET WORLDS apart, Santa Cruz Island is home to plants and animals that are found nowhere else on Earth. Like the Galapagos Islands of South America, the Channel Islands exist in isolation, allowing evolution to proceed independently, fostering the development of 145 endemic or unique species. Santa Cruz Island is host to 70 of these endemic species. Some, like the island scrub-jay and the Santa Cruz Island silver lotus, are found only on Santa Cruz Island.

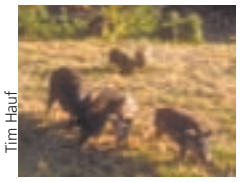
Unfortunately, this isolation has also made these species vulnerable to extinction. The melodic song of the Santa Barbara Island song sparrow and the crimson flower of the Santa Cruz Island monkey flower are no longer heard or seen within the park. The destruction of these species' habitats by non-native, exotic plants and animals has caused their extinction along with eight other rare and unique island species. Once found only on the Channel Islands, they have been lost forever.

In order to save 10 other island species, including the island fox, from the brink of extinction as well as protect 3,000 internationally significant archeological sites, the National Park Service (NPS) and The Nature Conservancy (TNC) have embarked upon a multi-year program to restore Santa Cruz Island. This restoration program is part of the NPS mission, as mandated by Congress, to preserve unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations.

The NPS, TNC, and natural and cultural resource experts identified non-native feral pigs and non-native fennel (an invasive weed) as the most significant disturbances to the island's sensitive resources. Both pigs and fennel cause major impacts to native plant communities, rare plant species, and archeological sites.

Pig rooting causes massive destruction of native species, resulting in bare ground that is easily eroded and colonized by invasive weeds, especially fennel. This activity was a factor in the decline of nine island plant species listed as threatened or endangered by the U.S. Fish and Wildlife Service.

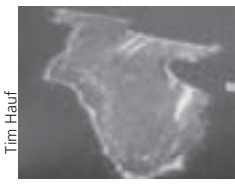
Pig rooting also damaged a large number of archeological sites on the island that are associated with the Chumash Native Amercian people who occupied the island from at least 9,000 years ago until the early 1800s. Rooting to a depth of three feet was noted in a number of sites, completely disturbing and desecrating these sacred sites and destroying their archeological value.


Tim Hauf


NPS

Non-native, feral pigs damage archeological sites, native plant communites, and rare plants and spread non-native, invasive weeds throughout the island. They also attract new predators to the islands such as golden eagles. The eagles then prey on the endemic island fox, pushing it to the brink of extinction.


NPS


Tim Hauf

San Miguel Island in 1930 when non-native animals overgrazed the island, reducing it to "a barren lump of sand." (top). San Miguel in January 2000. Just 30 years after the removal of non-native animals, vegetation has returned and started to stabilize the island (middle). San Miguel's native vegetation as it appears today above Cuyler Harbor (bottom).


Brad Sillasen

In addition, feral pigs played a pivotal role in the catastrophic decline of island foxes. Piglets provided a year-round food source for golden eagles, allowing these former rare or occasional visitors to expand their range and establish resident populations on the island and prey on island foxes. Golden eagle predation placed the fox on the brink of extinction on Santa Cruz, Santa Rosa, and San Miguel Islands.

The consensus among numerous experts was that the eradication of feral pigs was the most important action that could be taken to protect and restore Santa Cruz Island. The NPS has had tremendous success restoring other islands in the park through the removal of non-native animals. The eradication of European rabbits from Santa Barbara Island and sheep and burros from San Miguel Island has resulted in tremendous natural recovery. Feral pigs have also been eradicated from Santa Rosa Island in a similar program. Pig eradication began on Santa Cruz in 2005 and was completed in 2007.

Other management actions to initiate recovery of the island ecosystem have also been implemented. Golden eagles have been captured and relocated to northeast California. A captive breeding program for island foxes was established as insurance against losses due to golden eagles. This program has been so successful in reestablishing a wild population that the program will be shut down after releases in summer 2007. Monitoring of the island fox population will continue.

Also, native bald eagles have been reintroduced. This predator disappeared in the 1960s due to DDT poisoning. Bald eagles eat fish, seabirds and carrion, not live foxes, and are very territorial. It is expected that once they mature, they will establish territories and drive off any newly arriving golden eagles. In 2006 this program paid off. For the first time in more than 50 years, a bald eagle chick hatched unaided by humans on the Channel Islands.

This multi-year program to remove golden eagles, reintroduce bald eagles, breed island foxes, eradicate pigs, and control fennel has helped restore Santa Cruz Island to a naturally functioning ecosystem, providing one of the last opportunities to experience the nationally significant natural and cultural heritage of coastal southern California.

For further information on the "Santa Cruz Island Primary Restoration Plan," please contact the park headquarters or visit www.nps.gov.chis.

Hiking Information

Destination (from Scorpion beach)	Distance (miles, round-trip)	Difficulty	Brief Description*
Historic Ranch	1/2	Easy	View the historic Scorpion Ranch complex.
Cavern Point	2	Moderate	Magnificent coastal vistas and whale viewing.
Potato Harbor	4	Moderate	Spectacular coastal views. No beach access.
Scorpion Canyon	4 (loop)	Moderate to strenuous	A scenic loop hike that includes steep canyon walls and a chance to see the unique island scrub-jay.
Smugglers Cove	7	Strenuous	An all-day hike with beach access at Smugglers Cove.
From Smugglers Cove:			
Smugglers Canyon	2	Moderate to strenuous	Opportunities to view native island vegetation. Be prepared for uneven terrain and loose rock.
Yellowbanks	3	Moderate	This hike leads to an overlook. No beach access.
San Pedro Point	4	Moderate	For experienced, off-trail hikers.
Montañon Ridge	8	Strenuous	For experienced, off-trail hikers. Great views.
From Prisoners Harbor:			
Prisoners Harbor	1/4 –1/2	Easy	View the historic Prisoners Harbor area and search for the island scrub-jay.
Del Norte Camp	7	Strenuous	Follow the rugged Del Norte trail east to the back-country camp.
Navy Road-Del Norte Loop	8.5	Strenuous	Route includes the Navy Road and the Del Norte Trail. Good views.
Chinese Harbor	15.5	Strenuous	A long hike that ends at the only beach accessible by land on the isthmus.
China Pines	18	Strenuous	Explore the Santa Cruz Island pine grove.
Montañon Ridge	21	Strenuous	For experienced, off-trail hikers. Must be able to read topographic maps.
Pelican Bay	4	Moderate to strenuous	This trail may only be traveled by those who have a obtained a permit in advance from The Nature Conservancy or are accompanied by Island Packers (a boat concessionaire) staff.

- No hiking is allowed beyond the national park boundary onto The Nature Conservancy property. Private boaters, please see page 21 for landing information. The boundary is the property line (marked by a fenceline) between Prisoners Harbor and Valley Anchorage.
- **Before hiking, please refer to more detailed descriptions in the hiking guides available at island bulletin boards or mainland visitor center.**

Wetland Restoration

Prisoners Harbor on Santa Cruz Island is the principal gateway to the largest of the Channel Islands. The harbor sits at the mouth of Cañada del Puerto, an ephemeral creek that drains 13 square miles of the island's interior, including the island's Central Valley. Historically, the Prisoners area was one of the largest backbarrier coastal wetlands on the Channel Islands. This rare habitat, comprised of a freshwater stream, coastal lagoon/wetland, and riparian woodland, provided respite from the long dry summers for a diverse array of species including the island fox and bald eagle. The wetland most likely served as a resting and feeding stop for migratory birds traveling the Pacific flyway, as well as nesting and foraging habitat for resident waterfowl.

Prisoners Harbor also has an extensive legacy of human occupation. Chumash people occupied a village at the harbor for at least 5,000 years. Nineteenth- and twentieth-century landowners constructed a pier, buildings, and other structures at Prisoners Harbor. To facilitate the island ranching operations and protect their investments at the harbor, ranchers channelized the creek and filled in the adjacent wetland with gravels from the surrounding hills and creekbed. This effectively eliminated the ecological value of the coastal wetland system, its floodplain functions, and much of its biological diversity.

The National Park Service is exploring options for protecting and enhancing resources at Prisoners Harbor. National Park policy directives guide park staff to restore wetlands where feasible. The following actions are being considered at Prisoners Harbor: 1) reestablish a habitat that is rare both in California and on the Channel Islands; 2) reestablish wetland and floodplain functions; 3) restore natural biological diversity of the Prisoners Harbor area; 4) provide a more productive habitat for plants and wildlife; and 5) provide an enhanced experience for visitors.

Concurrently, this restoration will: 1) protect the archeological village site from erosion; 2) provide better protection to the historic warehouse building from flooding; 3) interpret the cultural and natural history of the Prisoners Harbor area; and 4) maintain vehicle access to the pier.

Please visit www.nps.gov/chis for more information and to comment on this project.

Michumash: The Island Chumash

Robert Schwemmer, CINMS

2004 Chumash Maritime Assocation channel crossing to Santa Cruz Island

TRADITIONALLY THE CHUMASH PEOPLE lived in an area extending from San Luis Obispo to Malibu, including the four Northern Channel Islands. Today, with the exception of the islands, Chumash people live in these territories and areas far beyond. Approximately 148 village sites have been identified, including eleven on Santa Cruz Island, eight on Santa Rosa Island, and two on San Miguel Island. Due to the lack of a consistent water source, Anacapa and Santa Barbara Islands was likely inhabited on a seasonal basis. A true maritime culture, the Chumash hunted and gathered natural resources from both the ocean and the coastal mountains to maintain a highly developed way of life. Today we have evidence of more than 13,000 years of Native occupation of the islands, highlighted by the discovery of Arlington Springs Man. Among the oldest dated human remains in North America, radio-carbon dating indicates he lived approximately 13,000 years ago. This rich, continuing history is a testament to the Chumash people and their Island home.

What's in a Name: *Michumash* is the word from which the name Chumash is derived. Roughly translated, *Michumash* means "makers of shell bead money," and is the term mainland Chumash used to refer to those inhabiting the islands.

'Achum, or shell bead money was "minted" by the island Chumash using small discs shaped from olivella shell and drills manufactured from Santa Cruz Island chert. The shell bead money was exchanged with mainland villages for resources and manufactured goods that were otherwise unavailable on the islands.

Over time, many Chumash place names have been altered to reflect the uses or perceptions of various other cultures. Anacapa Island, however, retains a name closest to the Chumash *Anyapakh*, meaning "mirage."

Santa Cruz Island, known by the Chumash people as *Limuw*, translates to "in the sea," while Santa Rosa Island, or *Wi'ma*, means "redwood driftwood." Though no translation to modern English is known, San Miguel Island was refered to as *Tuqan*.

***Limuw*—A Story of Place:** *Hutash*, the Earth Mother, created the first Chumash people on the island of *Limuw*, now known as Santa Cruz. They were made from the seeds of a Magic Plant.

Hutash was married to the *Alchupo'osh*, Sky Snake, the Milky Way, who could make lightning bolts with his tongue. One day, he decided to make a gift to the Chumash people. He sent down a bolt of lightning, and this started a fire. After this, people kept fires burning so that they could keep warm, and so they could cook their food.

In those days, the Condor was a white bird. But the Condor was very curious about the fire he saw burning in the Chumash village. He wanted to find out what it was. So he flew very low over the fire to get a better look. But he flew too close; he got his feathers scorched and they turned black. So now the Condor is a black bird, with just a little white left under the wings where they did not get burned.

After *Alchupo'osh* gave them fire, the Chumash people lived more comfortably. More people were born each year, and their villages got bigger and bigger. *Limuw* was getting crowded. And the noise people made was starting to annoy *Hutash*. It kept her awake at night. So, finally, she decided that some of the Chumash people had to move off the island. They would have to go to the mainland, where there weren't any people living in those days.

But how were the people going to get across the water to the mainland? Finally, *Hutash* had the idea of making a bridge out of a *wishtoyo* (rainbow).She made a very long, very high rainbow which stretched from the tallest mountain on *Limuw* all the way to *Tzchimoos*, the tall mountain near Mishopshno (Carpinteria).

Hutash told the people to go across the rainbow bridge and fill the whole world with people. So the Chumash people started to go across the bridge. Some of them got across safely, but some people made the mistake of looking down. It was a long way down to the water, and the fog was swirling around. They became so dizzy that some of them fell off the rainbow bridge, down through the fog, into the ocean. *Hutash* felt very bad about this, because she told them to cross the bridge. She did not want them to drown. So, to save them, she turned them into dolphins. Now the Chumash call the dolphins their brothers and sisters.

The *Tomol*: Chumash society featured an upper class of chiefs, shaman, boat builders and artisans; a middle class of workers, fishermen, and hunters; and a lower class of the poor and outcast.

The brotherhood of the *tomol*, an elite group of boat builders in the upper echelons of Chumash society, constructed the plank canoe, or tomol, which is the oldest example of ocean watercraft in North America.

Preferably constructed of redwood, which drifted down from northern California and was collected on *Wi'ma* (Santa Rosa Island), the *tomol* ranged from eight to 30 feet in length and held three to 10 people.

The *tomol* was constructed of a single piece of wood for the floor, with three or four rows of planks. Milkweed, yucca, dogbane, or sinew from deer were used as cordage to ie the *tomol* together. *Yop*, a glue consisting of a mixture of pine pitch and asphaltum was used to seal the space between boards. Sharkskin was used for sanding, red ochre for staining, and abalone for inlay and embellishment.

The use of the *tomol* allowed for an elaborate trade network between the islands and mainland, between natives and non-natives, and amongst the island communities themselves.

Today the Chumash Maritime Association, in partnership with Channel Islands National Marine Sanctuary and Channel Islands National Park, continues the tradition of the tomol. In September 2001 paddlers rowed the tomol *'Elye'wun* (swordfish) across the Santa Barbara Channel, completing the first channel crossing in more than 125 years.

Missionization: The Spanish were the first Europeans to visit the Chumash in 1542. Juan Rodriguez Cabrillo was impressed by the friendliness of the Chumash people who he encountered. However, along with European contact came European diseases and conflict.

Even relatively minor illnesses, such as the common cold, were devastating to the previously unexposed people of North America, and many Chumash people succumbed to disease.

In an attempt to convert the native population to Christianity and secure the area for Spain against the Russian and Aleut fur traders, the Chumash people were removed from their traditional lands. The Mission Era (1772-1822) was marked by the construction of five Spanish missions in Chumash territory and continued outbreaks of disease, further decimating the population.

The mission system depended on the use of native labor to propel industry and the economy. The social organization of Chumash society was restructured, leading to the erosion of previous power bases and further assimilation.

When California became part of Mexico, the government secularized the missions and the Chumash sank into the depths of poverty. By the time of the California gold rush, the Chumash had become marginalized, and little was done to understand or help the remaining population.

***i sari wa*; It Will Continue Indefinitely:** Today Chumash community members continue to move forward in their efforts to revive what was becoming a forgotten way of life. Much has been lost, but Chumash community members take pride in their heritage and their culture.

With a current population nearly 5,000 strong, some Chumash people can trace their ancestors to the five islands that now constitute Channel Islands National Park. The Chumash reservation in Santa Ynez represents the only federally recognized band, though it is important to note that several other Chumash groups exist.

The National Park Service invites you to visit Channel Islands National Park, Santa Monica Mountains National Recreation Area, and other local areas to learn more about the Chumash and other Native American cultures. For more information please write or call:

Channel Islands National Park
1901 Spinnaker Drive
Ventura, California 93001
(805)658-5730

Santa Monica Mountains
National Recreation Area
401 West Hillcrest Drive
Thousand Oaks, California 91360-4223
(805)370-2300

Chumash Indian Tribal Elders Council
P.O. Box 517
Santa Ynez, California 93460
(805)688-8446

Candelaria American Indian Council
1650 Palma Dr.
Ventura, California 93003
(805)650-8352

Santa Barbara Museum of Natural History
2559 Puesta del Sol Road
Santa Barbara, California 93105
(805)682-4711

Friends of Satwiwa
4126 Potrero Road
Newbury Park, California 91320
(805)499-2837

Tomol Crossings Continue

Although the historic Brotherhood of the Tomol disbanded in 1834, a contemporary group built *Helek*, which means peregrine falcon, in 1976 based on ethnographic and historic accounts of *tomol* construction. It was the first *tomol* built in 142 years. and the modern paddlers travelled from San Miguel Island to Santa Rosa Island and finally to Santa Cruz Island.

Twenty years later, the Chumash Maritime Association completed a 26-foot-long *tomol* which they named *'Elye'wun* (pronounced "El-E-ah-woon"), the Chumash word for swordfish.

On September 8, 2001, *'Elye'wun* made the historic crossing from the mainland to Santa Cruz Island. Over 150 Chumash families and friends gathered to greet the *tomol* and paddlers on the beaches of Santa Cruz.

Three years later, on September 11, 2004, *'Elye'wun* again crossed the Channel to Santa Cruz Island, this time greeted by more than 200 Chumash and American Indians at the historic Chumash village of *Swaxil*, now known as Scorpion Valley. The 21-mile trip took over ten hours. A crew of Chumash youth aged 14 to 22 joined the paddlers, a significant accomplishment for the next generation of Chumash leaders.

Additional *tomol* crossings took place in September 2005, August 2006, and August 2007. Members of the Chumash community continue to celebrate their heritage and culture through this event.

Centuries ago, the *tomol* was used to connect different island Chumash groups with each other and the mainland. Today, it links past generations of Chumash with the present-day Chumash community.

(continued from page 1)

in partnership with the IWS and the Ventura County Office of Education, established a webcam in 2006 that brought live, streaming images of the chick and its parents into schools and homes of people around the world.

The Channel Islands EagleCAM and associated discussion board, which can be found at http://chil.vcoe.org/eagle_cam.htm, developed a devoted following. The discussion board proved to be a fun and easy way to find play-by-play descriptions of the nest action, explore updates from biologists in the field, and get to know other eagle enthusiasts around the world. The projects was so engaging that in July 2006 when the first eagle chick fledged at three months of age, EagleCAM devotees held a world-wide virtual toast.

Because of the success of the webcam, it was reestablished on Santa Cruz Island to watch nesting activity in 2007. Volunteer observers took shifts throughout the day documenting the behavior of the birds. The solar-powered camera ran daily between dawn and dusk. Additional park webcam information and archival footage can be found at www.nps.gov/chis.

Bald eagles were once a very important component of the Channel Islands' ecosystem. However, human harassment, collection of eggs, and, ultimately, the pesticide DDT resulted in the complete extirpation of the species from the islands. Southern California, once the center for manufacture of DDT, trails the rest of the United States in the recovery of bald eagles because high levels of DDT continue to remain in the surrounding marine ecosystem. A successful federal and state lawsuit against manufacturers and distributors of DDT provided the funds to begin the bald eagle restoration program at Channel Islands National Park in 2002.

DDT severely reduced not only bald eagle numbers, but also peregrine falcons, California brown pelicans, and other seabirds. Bald eagles, feeding higher on the food chain, have been the slowest to recover. All of the bald eagle chicks introduced through this program are outfitted with blue wing tags, a conventional radio transmitter, and a satellite GPS transmitter. These have provided essential data on mortality and movements of the birds following fledging and departure from release sites. Additionally, movement-activated cameras mounted at bait stations help to detect unmarked birds and birds whose radio transmitters are no longer active.

Reestablishing bald eagles has been part of a larger effort to restore and protect the special ecosystem of the Channel Islands. In recent years, the park and partners like The Nature Conservancy, which co-owns Santa Cruz Island with the NPS, have eliminated nonnative animals, such as feral pigs, sheep, rats, and cattle. Species once threatened with extinction, like the island foxes, are moving toward recovery. The story of the restoration of the Channel Islands is featured in a recent edition of The Nature Conservancy magazine. Restoring a healthy bald eagle population is a significant piece in bringing back the natural productivity and diversity of the Channel Islands.

The goal of the program is to eventually establish bald eagle nests on all five islands. Many of the birds introduced into the ecosystem are still too young to reproduce. In the next several years, many of these birds will reach maturity and more nesting territories will likely be established. The signs are good, and the bald eagle may be back to stay on the Channel Islands.


NPS

Two juvenile bald eagles exercise their wings and think about taking their first flight from one of two hack towers on Santa Cruz Island.

History and Culture of the Channel Islands

SURFACING OVER THE HORIZON FROM THE depths of the Pacific Ocean, the coastal mountains of California's Channel Islands offer an extraordinary gateway to the past, spanning more than 13,000 years of human history.

The Channel Islands have attracted many explorers, scientists, and historians during the past few centuries. Today, island visitors can explore the world of the native Chumash, walk the shores where European explorers landed, discover new tales from California's ranching history, and witness the remains of off-shore shipwrecks.

The northern Channel Islands were home to many native Chumash communities who are believed to have inhabited the islands for thousands of years. When Europeans first reached the islands in the 16th century, they discovered a rich culture dependent upon the resources of the land and the sea for sustenance and survival. By the nineteenth century, the islands were fulfilling different purposes: vast sheep and cattle ranches occupied Santa Cruz, Santa Rosa, and San Miguel islands and the channel waters were aggressively harvested for fish and marine mammals. The remains of ancient Chumash villages are intermingled with historic ranch complexes and later military structures, testifying to the diverse heritage of human experience on these offshore islands.

Each of the five Channel Islands has a unique history. Channel Islands National Park invites you to learn more about the people, places, and stories associated with each of these islands and to experience the fascinating heritage of coastal southern California!

Please visiit www.nps.gov/chis for more information on the history and culture of Channel Islands National Park.

Diversity of People and Culture

For over thirteen thousand years, the northern Channel Islands have hosted a diverse range of peoples and cultures.The large number and undisturbed condition of archeological sites on the islands are shedding light on coastal migration patterns of the earliest Americans and their subsistence in the marine environment. Human remains discovered in 1959 at Arlington Springs on Santa Rosa Island have been dated to more than 13,000 years of age, among the oldest dated human remains in North America.

New information about the Island Chumash, the native population that inhabited these islands for thousands of years, continues to fascinate historians and visitors alike. These native people relied on the sea for much of their sustenance and manufactured tools and trade items from shells and stones. The Chumash were able to travel between the islands and the mainland in plank canoes, called *tomols*, which were constructed out of redwood trees that had drifted down the coast.

In 1542 explorer Juan Rodriguez Cabrillo reached San Miguel Island while voyaging along the American coast seeking new lands for conquest and development. For two hundred years, explorers and traders visited the islands where they hunted otters, seals, and sea lions for their pelts and oil, greatly increasing the exploitation of the marine resources and introducing diseases that decimated the native populations.

Claimed for Spain by the early explorers, the islands fell under Mexican rule in 1821. Santa Cruz and Santa Rosa were awarded as Mexican land grants with the intent of raising livestock. Initial ventures into sheep and cattle ranching began on these islands in the 1830s. With California statehood in1850, the islands became part of the United States. Each of the five northern Channel Islands was developed for livestock ranching during some period of the 19th and 20th centuries. Taking advantage of the expansive fields and altering much of the natural environment, ranchers and vaqueros, or cowboys, built successful sheep and cattle ranches. Many historic ranch buildings remain on Santa Cruz and Santa Rosa Islands today.


William Dewey

The Scorpion Ranch House was built between 1886 and- 1887 to house workers for the Santa Cruz Island Company's ranching operation.

The U.S. Army, Navy, Air Force, and Coast Guard all established posts on the northern Channel Islands during the 20th century. Light towers were constructed on Anacapa and Santa Barbara Islands in the 1910s, and a full light station built on East Anacapa Island in 1932, was run by the Coast Guard into the 1960s. Coastal defense build-up led to the establishment of an Army base in 1943 and an Air Force Base in 1950, both on Santa Rosa Island. The Navy managed San Miguel Island from 1948 until it transferred management to the National Park Service (NPS) in 1967. The Navy continues to maintain a small post on Santa Cruz Island.

Today NPS personnel and park visitors form the primary population of the five northern islands. Established as a national monument in 1938, Anacapa and Santa Barbara Islands were the first two islands under NPS management. In 1980 legislation creating Channel Islands National Park added the three remaining northern Channel Islands. Today the NPS protects and preserves the historic resources associated with the various historic inhabitants of the islands to help tell their stories to the public.

Santa Rosa Island

SANTA ROSA ISLAND ILLUSTRATES THE PROCESSES OF A NATIONAL park in development. Though the island was included as part of Channel Islands National Park upon the park's inception on March 5, 1980, it wasn't until December 1986 that the island came under the ownership of the National Park Service. Although the former owners run a private hunting operation a few months of the year for introduced deer and elk under a special use permit, visitation is welcome throughout the year.

Located 40 nautical miles from the Channel Islands National Park visitor center in Ventura, Santa Rosa is the second largest island in California at approximately 53,000 acres in size. The island's relatively low profile is broken by a high, central mountain range, rising 1,589 feet at its highest point. Its coastal areas are variable, ranging from broad sandy beaches gently sloping toward a dynamic ocean to sheer cliffs plunging toward the turmoil of a sea intent on changing the contour of the land.

As on its larger neighbor, Santa Cruz Island, these varied landforms support a diverse array of plant and animal species. About 500 plant species can be found within nine plant communities, including six plant species which are found only on Santa Rosa and nowhere else in the world. One of these species, the Santa Rosa Island subspecies of Torrey pine, is considered one of the rarest pines in the world—the last enduring members of a once widespread Pleistocene forest. A remnant, mainland subspecies of Torrey pine also can be found near La Jolla, California, at Torrey Pines State Reserve. Santa Rosa Island also hosts over 100 landbird and three land mammal species (including the island's largest native mammal, the endemic island fox); two amphibian and three reptile species; and colonies of seabirds, seals, and sea lions.

Remains of an ancient endemic species, the pygmy mammoth, have been uncovered on Santa Rosa, along with Santa Cruz and San Miguel Islands. These miniature mammoths, only four to six feet tall, once roamed island grasslands and forests during the Pleistocene. The fossil skeleton discovered on Santa Rosa Island in 1994 is the most complete specimen ever found.

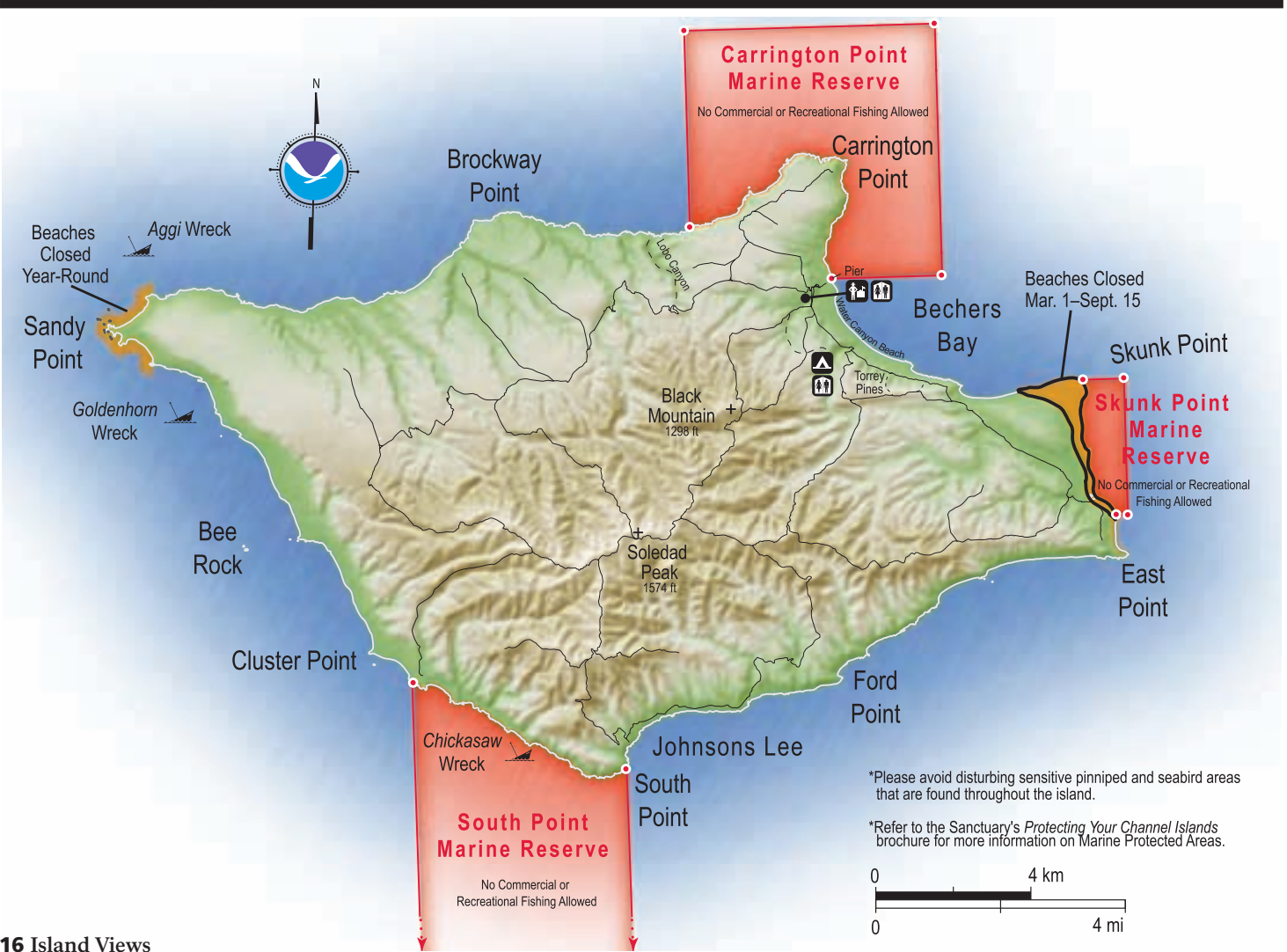
Along with extensive paleontological resources, Santa Rosa Island has rich archeological resources. Home to the Island Chumash until approximately 1820, *Wima* (as the Chumash refer to the island) contains thousands of significant and federally protected archeological sites. Archeological investigations on the island have enabled archeologists to construct a more complete picture of Chumash life on the islands. Radiocarbon dating on some of these sites indicates that humans have been using the island for more than 13,000 years.

Others have come to the island during more recent centuries to exploit its rich resources, sometimes making it their home. In addition to the native Chumash, European explorers, Aleut sea otter hunters, Chinese abalone fishermen, Spanish missionaries, Mexican and American ranchers, and the U.S. military all have left their mark on the Santa Rosa landscape. Visitors can see relics of these occupations in remnants of fishing camps, water troughs and fence lines, the pier where cattle were loaded and unloaded since 1901, buildings and equipment of the historic Vail and Vickers ranch at Bechers Bay, remains of the military installations, and a great diversity of sites to be discovered all around the island.

Hiking Information

Destination (from pier)	Distance (miles, round-trip)	Difficulty	Description
Water Canyon beach	2	Easy	If the wind is not too strong, this is a wonderful 2-mile-long white sand beach to explore.
East Point	12	Strenuous	A beautiful coastal hike with opportunities to explore the Torrey pines and unrestricted beaches.
Lobo Canyon	13	Strenuous	Spectacular canyon with wind and water sculpted sandstone cliffs, a stream and native plants.
Torrey Pines	5	Moderate	View the Torrey pines and get great views from the top of the grove.
Black Mountain	8	Strenuous	Great views (weather permitting) of Santa Rosa, San Miguel, Santa Cruz and the mainland.

- Please respect the privacy of the ranching operation by following the signed path from the pier through the ranch area.
- Each year for a few months, Vail & Vickers operates a private hunt for stocked deer and elk. During these hunting periods, hiking may be restricted in certain areas. Please check with the ranger before hiking and be aware of the hunting operation.



Things To Do

- One-day trips, multi-day boat trips and overnight camping trips (minimum stay is generally 3 days—Friday to Sunday).
- Be prepared for adverse weather.
- Backcountry beach camping is available during certain times of year.
- Hiking options are unlimited with over 54,000 acres of rugged peaks, magnificent canyons, and beautiful beaches.
- Due to high incidence of strong winds, swimming, snorkeling, diving, and kayaking are limited and recommended for the experienced visitor only.
- Despite the wind, Santa Rosa offers exceptional beach walking on white sand beaches. Access to one of the best beaches, Water Canyon Beach, is just over a mile from the pier in Bechers Bay and just down canyon from the campground.

Refer to related articles for more information.

Island Facts

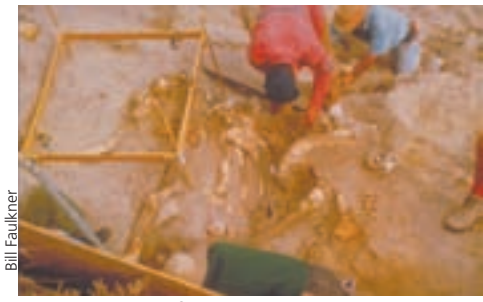
- Located in Santa Barbara County.
- Approximately 15 miles wide by 10 miles long; 84 square miles; 53,000 acres.
- Santa Rosa Island is 26.5 miles from the nearest mainland, three miles east of San Miguel Island, and six miles west of Santa Cruz Island.
- Average rainfall is 15 inches per year.
- Five endemic plant species occur only on Santa Rosa Island.
- Santa Rosa Island is home to only 3 native terrestrial mammals—the island fox, spotted skunk, and deer mouse. They are all endemic to the Channel Islands.
- Reptiles and amphibians include the gopher snake, alligator lizard, western fence lizard, Pacific tree frog, and slender salamander.

Tim Hauf

Torrey pines, Bechers Bay

Tim Hauf

Historic barns (1870s), Santa Rosa Island



Bill Faulkner

1994 excavation of pygmy mammoth

Streams Recover on Santa Rosa Island

IN 1995 THE STATE OF CALIFORNIA directed Channel Islands National Park to correct water quality problems on Santa Rosa Island, presumably caused by year-round grazing of approximately 5,000 cattle; 1,500 deer; and 800 elk. Later that year, an interdisciplinary team from the National Park Service (NPS), the U.S. Forest Service, and the Bureau of Land Management (BLM) assessed the condition of 10 stream sections on the island.

The team used the BLM's "Process for Assessing Proper Functioning Condition" method for the assessment. This rapid assessment method evaluates conditions according to 17 hydrology, vegetation, and stream geomorphology factors. Assessment ratings include "proper functioning condition," "functional at risk," and "nonfunctional."

The proper functioning condition of a riparian area refers to the stability of the physical system, which in turn is dictated by the interaction of geology, soil, water, and vegetation. A riparian system in proper functioning condition is in dynamic equilibrium with its streamflow forces and channel processes. The system adjusts to handle larger runoff events with limited change in channel characteristics and associated riparian-wetland plant communities. Because of this stability, properly functioning riparian areas can maintain water quality, fish and wildlife habitat, and other important ecosystem functions even after large storms. In contrast, nonfunctional systems in the same storms might exhibit excessive erosion and sediment loading, loss of fish habitat, and loss of associated wetland habitat.

Three of these sections studied were inaccessible to cattle and served as "reference areas," while the other seven were grazed year-round by cattle. The study found that of the seven stream sections that were subject to year-round cattle grazing, six were "nonfunctional" and one was rated "functional at risk." Of the three reference areas, two were in "proper functioning condition" and one was rated "functional at risk." In the nonfunctional systems, an oversupply of sediment from upland and channel sources had exceeded the streams' transport capabilities, resulting in mostly braided channel forms, high lateral instability, and other characteristics that were out of balance with the landscape setting. In addition, riparian-wetland vegetation was almost completely absent, exposing banks to excessive erosion in each flood event.

By 1998 all 5,000 cattle were removed from the island, and the nonnative deer population was substantially reduced. In 2004 the NPS assembled a comparable team to reassess the same stream sections that were evaluated in 1995, using the same assessment method, in order to evaluate riparian system response to removal of cattle and deer.

The post-cattle grazing assessment team found that all six areas that were rated nonfunctional in 1995 had regained proper functioning condition. Sediment-choked, braided channels evident in 1995 had recovered to narrower, deeper, meandering channels with well-developed floodplains that are in balance with the landscape setting. Herbaceous riparian-wetland vegetation that was nonexistent in 1995 now covers more than 90 percent of the area along most of these areas.

The remarkable improvement in Santa Rosa Island's riparian conditions since 1995 demonstrates the ability of these systems to restore themselves once the major stressor—year-round cattle grazing—was removed. The transition from nonfunctional to properly functioning riparian systems became possible when vegetation recovery in the watersheds led to decreased runoff and sediment delivery to the island's stream systems and when appropriate riparian-wetland vegetation became established.

However, the expected woody riparian components (willows and cottonwoods) have not reestablished. Although willows and cottonwoods may not be absolutely necessary for bank and floodplain stabilization in these areas, they would enhance such stability, help dissipate flood energy, and provide valuable wildlife habitat that likely occurred historically in the canyons. The absence of willow and cottonwood establishment may be due to a lack of nearby seed sources or browsing of seedlings by nonnative deer or elk remaining on the island. Interventions, such as planting and protecting willows and cottonwoods, may be necessary to put the recovering riparian systems on a trajectory toward desired vegetative conditions.

1995

1995

1995

2004

Arlington Canyon changed from an unvegetated, braided stream channel considered nonfunctional (upper photo) to one with appropriate riparian-wetland vegetation that is functioning properly (lower photo). In 1995 excess sediment derived from the overgrazed watershed and unvegetated stream banks filled the channel and degraded water quality. By 2004 sediment deposits had created a properly functioning floodplain, and the narrower, meandering channel showed improved water quality and aquatic habitat characteristics.

2007

In 1995 Old Ranch Canyon provided an especially good example of a riparian system that was nonfunctional. The 2007 photo shows the dramatic recovery of channel morphology and vegetation (both riparian-wetland and upland) since removal of cattle. Herbaceous wetland species now provide nearly 100 percent cover in the channel, but the expected willow and cottonwood plants are almost completely absent. The 2004 team found clear evidence of browsing on the few small willow plants encountered, indicating that any seedlings that do get established may soon be eaten by the remaining introduced deer and elk.

2007

There was substantial improvement between 1995 and 2007 in this area of Lobo Canyon. Although the canyon was considered to be in proper functioning condition in 1995, there were significant changes following removal of cattle due to the strong recruitment and spread of herbaceous and woody riparian-wetland vegetation. There is now a diverse native community covering nearly 100 percent of the potential riparian-wetland zone. Arroyo willow, absent in 1995, is now well-established.

Removal of Non-Native Mammals

Islands are particularly vulnerable to the impacts of non-native animals. Fortunately, it is often feasible to eliminate non-native animals from islands and initiate ecological recovery. The five islands within the park provide habitat for many endemic species and critical habitat for animals and plants that depend on the naturally lower levels of predation, herbivory, and disturbance typical of islands.

Since the 1970s, the National Park Service and our partners have eliminated most of the introduced non-native mammals. Three of the park islands—Santa Barbara, Anacapa, and Santa Cruz—are free of non-native mammals. Deer and elk remain on Santa Rosa Island, and black rats remain on San Miguel Island. There has been substantial ecological recovery as a result of the removals. However, some areas, such as highly eroded habitats, have been very slow to change. Efforts will continue to remove impacts that could result in the impairment of park resources.

Removing non-natives may also further control invasive plants that rely on exposed soils and poor vegetative cover.

Fox

(continued from page 1)

remaining in the wild. The following year, the remaining island foxes on Santa Rosa—15 animals—were brought into captivity. In 2002 foxes on Santa Cruz were brought into captivity when biologists discovered that the fox population had declined by over 90 percent and fewer than 100 foxes existed on the island.

After eight years of captive breeding on Santa Rosa, seven years on San Miguel, and five years on Santa Cruz, captive foxes had produced 53 pups on San Miguel , 77 on Santa Rosa, and 85 pups on Santa Cruz. Initial releases back to the wild began in 2003 on Santa Rosa, 2004 on San Miguel, and 2003 on Santa Cruz. Since that time 50 foxes have been released on Santa Rosa, 48 on San Miguel, and 91 on Santa Cruz.

Since releases began, survival and reproduction have been higher for San Miguel and Santa Cruz foxes. On San Miguel, annual survival was 92% as of mid-2007, and reintroduced foxes produced 32 pups in spring 2006. On Santa Cruz, annual survival was 71% as of mid-2007, and reintroduced foxes produced 66 pups in spring 2007. Annual survival was 73% for Santa Rosa foxes, and released foxes produced 15 pups on that island in 2006. The current wild population estimate is over 100 foxes on San Miguel, over 300 on Santa Cruz, and over 50 on Santa Rosa.

The high fox survival on San Miguel and Santa Cruz coupled with the high reproductive success—much higher than in captivity—results in population recovery being accomplished, at this point, by the recovering wild population, rather than by further captive breeding and release. Therefore, the remaining captive foxes on San Miguel and Santa Cruz were released in fall 2007, and captive breeding ceased. On Santa Rosa, captive breeding will continue for several more years, until wild fox survival increases and reproductive success in the wild is greater than in captivity.

The high survival of released foxes is due primarily to the successful live-capture and removal of golden eagles. Predation by golden eagles was the cause of the massive fox declines in the 1990s, and until recently remained the primary mortality factor for released and wild island foxes in the northern Channel Islands. Raptor biologists from the Santa Cruz Predatory Bird Research Group began live-capturing golden eagles on the Channel Islands in 1999 and then releasing them in northeastern California. Since that time a total of 44 golden eagles have been relocated to the mainland. As of 2007 only one eagle was thought to remain, and 2007 marked the first year in more than a decade that golden eagles did not attempt to breed on the northern Channel Islands.

Two other ecosystem-level changes will help insure that golden eagles do not gain a toehold on the northern Channel Islands in the future. The recent removal of feral pigs from Santa Cruz Island by The Nature Conservancy and the National Park Service removes a major prey base for golden eagles. Moreover, the successful reintroduction of bald eagles to the islands adds back the last important missing element of the island ecosystem, with indirect benefits to island foxes: golden eagle use of the islands is likely to be discouraged by territorial bald eagles.

San Miguel Island

WIND AND WEATHER CONSTANTLY SWEEP ACROSS THE NORTH Pacific to batter the shores of the westernmost of all the islands, San Miguel. This extreme weather creates a harsh but profoundly beautiful environment. The 9,500-acre island is primarily a plateau about 500 feet in elevation, but two 800-foot rounded hills emerge from its wild, windswept landscape. Although lush native vegetation covers this landscape today, a century's worth of sheep ranching and overgrazing caused scientists in 1875 to describe the island as "a barren lump of sand." With the grazing animals removed, vegetative recovery is in progress. Giant coreopsis, dudleya, locoweed, lupine, buckwheat, coastal sagebrush, and poppies are all recolonizing the island to their former extent, returning San Miguel to its more natural state.

Also making a comeback, after years of hunting, are the thousands of pinnipeds (seals and sea lions) that breed, pup, and haul out on the island's 27 miles of isolated coastline. Hikers who make the all-day, ranger-guided, 16-mile round-trip hike across the island to Point Bennett will never forget seeing one of the world's most spectacular wildlife displays—over 30,000 pinnipeds and up to five different species hauled out on the point's beaches at certain times of year.

Other wildlife include the island fox and deer mouse. Both of these little creatures are "endemics"—they are found only on the Channel Islands. The island fox, the size of a house cat, is the largest land animal on the island. In the waters surrounding San Miguel, the marine animals get much larger. Dolphins and porpoises are often spotted along with gray whales, killer whales, and the largest animal of all, the blue whale.

In the spring and summer the skies are filled with birds. Boaters entering Cuyler Harbor receive a greeting from western gulls, California brown pelicans, cormorants, and Cassin's auklets that nest on Prince Island. Black oystercatchers, with their bright red bills and pink feet, feed along the beach. Terrestrial residents include the western meadowlark, rock wren, and song sparrow, an endemic subspecies. Peregrine falcons have recently been restored to the island and are nesting successfully once again after years of decimation by the pesticide DDT.


Brad Sillasen

Spring flowers, Cuyler Harbor, San Miguel Island

In addition to the variety of natural resources, San Miguel hosts an array of cultural resources as well. The Chumash Indians lived on San Miguel almost continuously for over 11,000 years. Today there are over 600 fragile, relatively undisturbed archeological sites. The oldest one dates back to 11,600 years before the present—some of the oldest evidence of human presence in North America. Juan Rodriguez Cabrillo and his men laid eyes on San Miguel Island in 1542. Upon claiming the island for the Spanish crown, Cabrillo named it "La Posesion." Some stories say that Cabrillo wintered and died on San Miguel Island. No one knows where Cabrillo is buried, but there is a memorial commemorating the explorer on a bluff overlooking Cuyler Harbor.

Other outstanding island resources that visitors may experience on San Miguel include the caliche forest (sand-castings of ancient vegetation), fossil bones of the Pleistocene pygmy mammoths that stood 4 to 6 feet at the shoulders, 150 years of ranching history, and numerous shipwrecks. Whether you are interested in life of the past or life of the present, San Miguel Island has it in abundance. Visit, explore, and enjoy.

Things To Do

- One-day trips, long overnight camping trips (minimum stay is generally three days—Friday to Sunday), and multi-day boat trips.
- Be prepared for adverse weather.
- Hiking options are limited. Visitors may explore a small area on their own—including the 2-mile-long Cuyler Harbor beach and the 1-mile trail to the ranger station. To see other parts of the island you must go with a ranger. Rangers are generally available to lead hikes, but check with the park or concessionaires in advance.
- Ideal place for viewing native vegetation, the unique caliche forest, and seals and sea lions (with ranger escort).
- Due to high incidence of strong winds, swimming, snorkeling, diving, and kayaking are limited and recommended for the experienced visitor.
- Despite the wind, Cuyler Harbor is one of the most scenic beaches in the park.

Refer to related articles for more information.

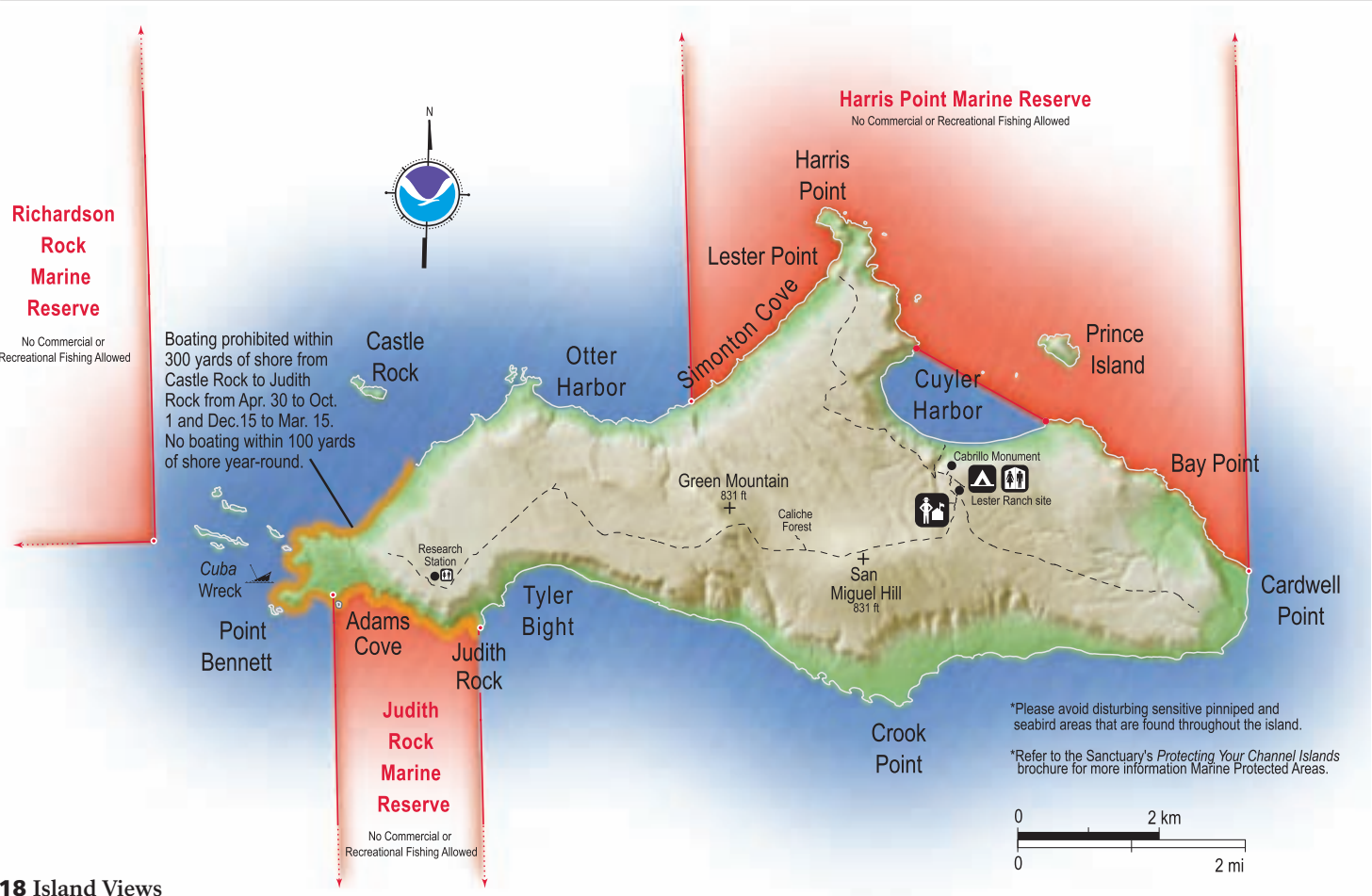
Island Facts

- Located in Santa Barbara County.
- 14 square miles; 9325 acres; 8 miles long by 4 miles wide.
- The San Miguel Island fox, deer mouse and introduced rat are the only land mammals found on San Miguel Island.
- Up to five different pinniped species and 30,000 individuals can be found at Point Bennett, one of the largest concentrations of wildlife in the world.
- One of the oldest known Chumash archeological sites (11,600 years ago) is on San Miguel Island.
- Over a dozen Channel Islands endemic plants.

Hiking Information

Destination (from Cuyler Harbor)	Distance (miles, round-trip)	Difficulty	Description
Cuyler Harbor Beach	2	Easy	A wonderful 2-mile-long white sand beach to explore. Use caution around rockfalls.
Lester Ranch site	2	Moderate	Hike up a spectacular canyon with lush native vegetation to an overlook and two historic sites.
Caliche Forest	5	Strenuous	View sand-castings of ancient vegetation. Must be accompanied by a park ranger.
Point Bennett	16	Strenuous	Continue past the caliche forest with a park ranger to view over 30,000 seals and sea lions.
Lester Point	5	Strenuous	Hikers must be accompanied by a park ranger on this hike to an incredible, windswept overlook.

• Hikers must stay on island trails to protect fragile vegetation and for visitor safety.
• Hikers must be accompanied by a park ranger beyond the ranger station.




Tim Hauf

Caliche forest, San Miguel Island


Tim Hauf

Cuyler Harbor from Harris Point trail, San Miguel Is.


Tim Hauf

Elephant seals, Point Bennett, San Miguel Island

Seals and Sea Lions

WALKING TO POINT BENNETT ON THE western tip of San Miguel Island requires some stamina, for it is a fifteen-mile roundtrip hike. About halfway across the island, however, there is something that will help spur you on and encourage your feet to keep moving. That something is a sound—faint at first, but gradually getting louder and louder. The noise is a sort of rumble, low and rolling. What can be making this strange sound? As you come over the rise at Point Bennett you find your answer. There are thousands of elephant seals on the beach—flipping up sand over their huge torpedo-shaped bodies, moving like globs of JELL-O over the sand, and carving out territories to call their own. The originators of the noise that you have been listening to are the gigantic males with their long proboscises that gives the species its name. You are witnessing a timeless ritual of which sound is just a small part.

The elephant seal is one of four species of pinniped (or "wing or feather-footed") marine mammals that are commonly sighted around Point Bennett. Other species include California sea lions, northern fur seals, and harbor seals. At one time, two other species were found here in abundance—Steller, or northern, sea lions and Guadalupe fur seals. While

Dan Richards

Elephant seal pups

Steller sea lions have not been seen since the 1980s, a few Guadalupe fur seals are occasionally sighted. Nevertheless, not only are more species sighted at this remote spot than at anywhere else on the planet, but this gathering represents one of the largest congregations of wildlife in the world. Staggering populations of over 70,000 California sea lions; 5,000 northern fur seals; 80,000 northern elephant seals; and 1,100 harbor seals breed and pup on the island each year.

The diversity of pinnipeds is part of a larger picture of biological diversity found in the Santa Barbara Channel. San Miguel Island lies in an area of water that overlaps two currents—a cold current moving down the Pacific coast from Alaska and a warm current moving up the Pacific coast from Mexico. Those two currents meet and intermingle not only water, but many of the species associated with corresponding cold and warm currents.

Islands also bring diversity by providing shelf areas where sunlight can penetrate the water, and algae, such as the giant bladder kelp, can grow. The dense kelp forests around the islands provide food and shelter for many varieties of plants and animals. Diversity is also linked to upwelling conditions that exist near San Miguel Island. Upwelling sucks cold, nutrient-rich water that normally lies at the bottom of the ocean to the surface, providing food for hundreds of species.

The isolation of the islands also plays a role. A beach all to themselves with no disturbance from people must be very enticing for seals and sea lions. Therefore, the Santa Barbara Channel, the islands, and Point Bennett, specifically, provide all the necessary ingredients they need—wide sandy beaches, plenty of food, and others of their kind.

Researchers from the National Marine Fisheries Service, in cooperation with the park, have been studying the seals and sea lions of San Miguel since 1968. Long-term behavior studies on marked animals provide information about reproductive behavior as well as migratory and feeding patterns. Current studies focus on winter feeding and maternal behavior of California sea lions, northern elephant seals' diving and migration patterns and, of course, the impacts of El Niño on the pinniped population. Visit the park's web site (www.nps.gov/chis/) for more information on these research projects.

These pinnipeds are protected by spending at least part of their lives in a national park—or are they? Some threats to these animals know no boundaries. Threats made by water pollution, plastics and debris in the ocean, oil spills, overharvesting of fisheries, toxins, and pesticides affect even isolated areas like Point Bennett. These threats can also affect people. Without protection, the spectacular rituals performed on the beaches of Point Bennett can become a thing of the past. Generations to come may only experience the grandeur of Point Bennett through stories and photos.

People can make sure pinnipeds of the park and world survive into the future. Simple things like recycling plastics can make a difference to a curious young sea lion looking for something to play with. That plaything does not need to be a piece of plastic webbing that may strangle it. The most important action people can take is to visit Point Bennett. Discover the world of the pinnipeds for yourself—then tell others how important it is to keep the rituals continuing.

Whale Watching

THE WATERS SURROUNDING CHANNEL Islands National Park are home to many diverse and beautiful species of cetaceans (whales, dolphins, and porpoises). About one third of the cetacean species found worldwide can be seen right here in our own backyard, the Santa Barbara Channel. The 27 species sighted in the channel include gray, blue, humpback, minke, sperm, and pilot whales; orcas; Dall's porpoises; and Risso's, Pacific white-sided, common, and bottlenose dolphins.

This diversity of cetacean species offers a great opportunity to whale watch year-round. The most common sightings are of gray whales from mid- to late-December through mid-March, blue and humpback whales during the summer, and common dolphins throughout the entire year. Whales and dolphins can be seen either from shore or from a boat. The best shore viewing is from a high spot on a point that juts out into the ocean. Some examples include Point Dume in Malibu, the Palos Verdes Peninsula near Los Angeles, and Point Loma in San Diego. The park visitor center has a tower with telescopes, which can be used for whale watching as well as island viewing. Watching in the early morning hours, before the wind causes whitecaps on the water's surface, will provide you with the best opportunity to see whales from shore.

Closer viewing of whales is possible from public whale watching boats or private boats. Whales have been known to approach boats quite closely. Under the Marine Mammal Protection Act, boaters must stay at least 100 yards from whales unless the whale chooses to approach the boat.

Many whales are on the endangered species list and should be treated with special care. All whales are protected by the Marine Mammal Protection Act; it is illegal to disturb or harm any marine mammal. Boaters who use private craft to watch whales must remember to stay at least 100 yards away from whales. Boaters who frighten or interrupt the whales' activities by approaching too closely could drive the whales away from food or young calves. Please remember that whales are wild animals and can be unpredictable.

We need to continue to explore the world of whales and dolphins. The well-being of the cetacean population is a good indication of the health of the marine ecosystem. Our ability to bring these species into the next century and beyond is an indication of the future of life on this planet. Every day we learn more about these mysterious and unique creatures that dwell beneath the water, yet rise above it to breathe.

The park concessionaires offer whale watching during the year. Please refer to the "Transportation—How To Get There" section on Page 2 for contact information.

Whale Habits

Whether you are watching from shore or in a boat, here are a few distinctive habits to look for.

Spouts Your first indication of a whale will probably be its spout or "blow." It will be visible for many miles on a calm day, and an explosive "whoosh" of exhalation may be heard up to 1/2 mile away. The spout is mainly condensation created as the whale's warm, humid breath expands and cools in the sea air.

Breaching No one knows why whales perform this most spectacular of their behaviors. It may be part of the courtship display, a signal, an effort to dislodge parasites, an expression of stress, or just for fun. When breaching, three-quarters or more of the whale's body bursts forth from the water, pivots onto its side or back, and falls back with an enormous splash.

Diving Diving is preceded by whales thrusting their tail flukes out of the water. Typically, whales make a series of shallow dives, followed by a deep dive.

Footprints Ripples caused by the vertical thrusts of the tail as the whale dives are called "footprints."

Spyhopping Whales and dolphins are believed to have reasonable vision in air as well as water. On occasion, a whale will extend its head vertically from the sea. Supported by thrusting flukes, the whale's head can rise 8-10 feet above the surface, sometimes turning slowly for thirty seconds or more before slipping back underwater.

Brad Sillasen

Blue whale with spout

NPS

Breaching humpback whale

Brad Sillasen

Blue whale fluke

NPS

Gray whale spyhopping

Limiting Your Impact

Regulations and Guidelines for Protecting Natural and Cultural Resources

Jeff Foot

Harbor seals, Santa Rosa Island

NPS

Brown pelican, Anacapa Island

THE PROTECTION AND PRESERVATION OF your park's biological, cultural, and historical resources is a major mission of the National Park Service. By following the park regulations and guidelines, you can help protect these rare and unique treasures of Channel Islands National Park for future generations to enjoy.

Regulations

There are a number of federal and state laws and regulations that protect Channel Islands National Park and the people who visit here. Visitors to the park are responsible for knowing and abiding by those rules. Listed below are some of the most important rules you need to know. Further information is available from park rangers in Ventura and on the islands or under the "Laws and Policies" section of our website (www.nps.gov/chis).

- Fishing is prohibited in the marine reserves.
- Personal watercraft such as jet skis are not allowed in park waters.
- Pets are not allowed on the islands. Service animals require a permit from the Superintendent.
- Fires are not permitted. Smoking is only allowed in designated areas.
- Landing is not permitted on offshore rocks and islets.
- Waters around Point Bennett on San Miguel Island are closed to protect seals and sea lions.
- Hikers must stay on established trails on Anacapa, Santa Barbara, and San Miguel Islands.
- Some sea caves at Santa Cruz Island are closed to protect nesting seabirds.
- The shoreline of Santa Barbara Island is closed to landing except for the cove below the ranger station.
- The shoreline of San Miguel is closed to landing except at Cuyler Harbor.
- The beaches at Skunk Pt. and Sandy Pt. on Santa Rosa are closed to protect wildlife.
- The waters on the north side of West Anacapa Island are closed most of the year to protect nesting pelicans.
- Collecting of plants, rocks, animals, and artifacts is prohibited.
- The following items may not be brought to the park: live or potted plants, soil, cut flowers, firewood or any wood with attached bark, corrugated boxes, tools or equipment with attached soil, motorized vehicles, and bicycles.
- Channel Islands National Park local regulations: Each national park has specific local regulations established under the superintendent's discretionary authority under Title 36 CFR. These regulations are compiled annually and available at www.nps.gov/chis or in print at park headquarters.
- Title 36 Code of Federal Regulations governs all national parks including Channel Islands and is available by visiting our website.
- Fishing in the waters of Channel Islands National Park is governed by the state of California. The state sport fishing regulations for ocean waters apply in the park. A valid California fishing license with an ocean enhancement stamp is required to fish within the park.
- Marine Protected Areas in the Channel Islands were established in 2003. Within these reserves it is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource, except under a permit or specific authorization from the commission for research, restoration, or monitoring purposes. There are 10 marine reserves and two conservation areas in the Channel Islands. Visit http://www.dfg.ca.gov for more information, including maps and details of the regulations.

Guidelines

Avoid areas—sea caves (including dry caves], offshore rocks, cliffs, and beaches)—where birds, seals, and sea lions are roosting, resting, nesting, or pupping. These animals are easily disturbed. Under federal law it is illegal to disturb and/or harm these animals. They are sensitive to any type of human disturbance including loud noises and artificial light. Disturbance while animals are resting can cause a fatal depletion of energy reserves. During the nesting or pupping season, disturbance may cause them to crush or abandon their nests, eggs, chicks, or pups. Without parental protection, the eggs or young may overheat and are vulnerable to predation. Entire colonies have been lost this way. Be careful not to disturb seal pups that appear stranded on beaches. These pups are being weaned by their mothers.

Look ahead and give animals at least a 100-yard clearance. Approach new territory slowly and quietly. If an animal starts to look alarmed (appears agitated or starts watching you), then you are too close. This can cause an animal severe stress. Sit calmly at a safe distance. Let the animals adjust to your presence, and you will be rewarded with exciting displays of natural behavior.

For your safety as well as theirs, do not approach sick or injured animals. Alert a ranger or a boat concession employee.

Take advantage of the islands' best weather by kayaking during September and October. Most seabirds, shorebirds, and pinnipeds have completed their reproductive cycles by this time. In addition, calm seas and wind are common during these months.

Remember, you're in their habitat. Help educate others. Let's protect our wildlife for all to see.

Boating and Kayaking

BOATING (EXCLUDING PERSONAL WATERcraft—see regulations on page 20) and kayaking are unique and rewarding ways to experience the pristine marine environment of Channel Islands National Park. You will find solitude and splendor. Here you will also face new challenges and may encounter unexpected dangers. This section is designed to help in planning a safe, enjoyable, and environmentally sound sea kayak trip in the park.

Planning Your Trip

Kayaking: Sea kayaking is a high-risk activity that has caused the death of park visitors, and annually numerous near-fatal incidents with sea kayakers occur in the park. The challenging and quickly changing weather and, at times, extreme sea conditions and dangerous sea caves greatly add to the risks of sea kayaking in the park. Sea kayaking on your own in any area of the park should not be attempted by novice or first-time kayakers or anyone who is not properly experienced, trained, conditioned, and equipped.

Visitors may kayak on their own or with a park authorized guide/outfitter. For your safety, the National Park Service (NPS) strongly recommends that sea kayaking be done with one of the park's authorized guide/outfitters. The guided trips are moderate to strenuous in nature but some do not require previous kayaking experience.

Visitors with their own kayaks who would like to explore the park may contact the park concessionaires, who will transport kayaks on their public trips for an extra fee. The concessionaires offer year-round transportation to the islands for day visits and camping trips.

Sea kayaking opportunities are available throughout the park. To help you decide which island to visit, specific island information is available at www.nps.gov/chis or from the visitor center through publications, exhibits, and the park movie.

The area of the park that is most popular for sea kayaking is centered around Scorpion Beach on East Santa Cruz Island. This location is a world-class destination for sea kayaking because of easy beach access, clear ocean waters, nearby camping, readily available concessionaire boat transportation service, and a spectacular shoreline with beautiful sea cave and cliffs to explore.

Sea kayaking at San Miguel and Santa Rosa Islands is recommended to only the most highly experienced (expert), skilled, conditioned kayakers with all necessary safety equipment due to the consistently extreme weather and sea conditions that regularly dominate these areas.

Due to the many hazards of crossing the channel from or to the mainland to the park islands the NPS does not recommend this be attempted by sea kayakers.

Boating: To help you decide which island to visit, specific island information is available at www.nps.gov/chis or from the visitor center through publications, exhibits, and the park movie. Boaters may land on all five islands within the park throughout the year.

Detailed boating information about the channel and islands may be obtained from the U.S. Coast Guard's (USCG) "Local Notice to Mariners" publication by contacting the Coast Guard at (510) 437-2981. Cruising guides to the Channel Islands and nautical charts are available from local marine stores and online bookstores. Refer to the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Survey charts 18720, 18721, 18725, 18727, 18728, 18729, and 18756.

Visitors may boat on their own or with a park authorized commercial service operator. Due to challenging weather conditions, boating should not be attempted by the novice or anyone who is not properly trained, conditioned, and equipped. Currents, shifting swells, fog, and strong winds can change quickly in the channel. The trip to the islands also takes the boaters across some of the busiest shipping lanes in California. Ship speeds of 25 to 35 knots present a special hazard to boaters while crossing the channel.

There are no public moorings or all-weather anchorages around the islands. It is recommended that one person stay on board the boat at all times. Boaters are responsible for any damage to the resources caused by their boat.

Weather

Conditions in the Santa Barbara Channel and around the islands are variable, and the ocean is unforgiving. Only experienced boaters with vessels capable of withstanding severe weather are advised to make the cross-channel passage. Boaters should obtain the latest weather broadcast provided by the NOAA Weather Service by calling (805) 988-6610, visiting its web site at www.wrc.noaa.gov/, and by monitoring the weather radio—VHF-FM 162.475 MHz (weather station 3) for marine forecasts and VHF-FM 162.55 MHz (weather station 1) and VHF-FM 162.40 MHz (weather station 2) for land-based observations.

Weather conditions vary considerably in the channel. The calmest winds and sea conditions often occur August through October, making kayaking ideal. Kayaking is possible during other months, but with a much greater chance for adverse wind and seas with sudden unexpected changes. High winds may occur regardless of the forecast. Forty-knot winds are not unusual for Santa Rosa and San Miguel Islands. Anacapa and Santa Barbara Islands have more moderate winds.

Winds are often calm in the early morning and increase during the afternoon. Generally the wind comes from the northwest, but kayakers and boaters must be also be prepared for strong east or Santa Ana winds at anytime, especially from September through April. Dense fog is common during the summer months, but may occur at any time, making chart and compass navigation mandatory. Ocean currents of considerable strength may be encountered both near- and offshore from the islands. Ocean water temperatures range from the lower 50s (°F) in the winter to the upper 60s (°F) in the fall.

Safety

Due to challenging weather conditions, boating and kayaking should not be attempted by the novice or anyone who is not properly trained, conditioned, and equipped. Safety requires good planning and common sense. Boating and kayaking are potentially hazardous, even for experienced operators. Please follow these saftey recommendations:

Use the buddy system. There are no lifeguards on duty. Boating and kayaking is at your own risk. Stay together and paddle within the skills of the least experienced paddler in the group.

Tim Hauf

Kayaking near the Arch Rock, Anacapa Island

Boating and Kayaking Landing Information

Island	Permit Required	Fee	Landing Areas	Landing Facility
East Anacapa	No	No	Landing Cove	Small dock*
Middle Anacapa	Yes*	No	Schedule with ranger	Rocky shoreline
West Anacapa	No	No	Only at Frenchys Cove	Beach
eastern Santa Cruz (NPS property)	No	No	Anywhere	Beach; pier at Scorpion and Prisoners
western Santa Cruz (TNC property)	Yes*	Yes*	TNC designated areas	Beach
Santa Rosa	No*	No	Anywhere*	Beach; pier in Bechers Bay
San Miguel	No*	No	Only at Cuyler Harbor*	Beach
Santa Barbara	No	No	Landing Cove	Small dock*

*** Please see specific island information below for details.**

Kayak Outfitters

Visitors may kayak with one of several outfitters that offer a variety of different kayak trips to the Channel Islands. The trips are moderate to strenuous in nature, but some do not require previous kayaking experience. Most kayak excursions are offered from May through October.

Aquasports	(800) 773-2309	Paddle Sports	(805) 899-4925
	(805) 968-7231	Santa Barbara Adventure Co.	(805) 898-0671
Channel Islands Kayak Center	(805) 984-5995	Southwind Kayak Center	(800) SOUTHWIND

Obtain current weather and sea conditions. The conditions around the islands are considered "open ocean." Extreme weather conditions may be encountered at any time, and sea conditions may become dangerous without warning.There is no place where visitors will be kayaking in a protected cove. Always observe and evaluate sea conditions before entering the water. Be alert to wind, wave, and currents at all times.

Do not travel downwind (with the wind) as you will have to return into a headwind. Wind and waves typically come out of the northwest or west. Winds tend to increase in the afternoon. Morning hours can be a better time for kayaking and other watersports. Challenging Santa Ana or east winds may occur at anytime, but are most common from September through April.

Do not exceed your skill level. If you are new to sea kayaking or other watersports, stay close to your launch area and paddle with an experienced kayaker. Ask NPS personnel or kayak guides if you have questions concerning weather, safety, etc. Be capable of re-entering your kayak from the water.

Let someone know where you are going and when you expect to return. Boaters and kayakers should always file a float plan with family and/or friends and inform them of your departure and return. The float plan should include: 1) the number of boats and boaters on the trip as well as the color, size, and type of craft used; 2) names and addresses for the boaters, as well as emergency phone numbers; 3) any survival and special emergency equipment should be listed (EPIRB, VHF, food rations, flares, etc.); and 4) the place, date, and time of departure and return should be logged as well as destination(s). This information can be invaluable for a search operation if something goes wrong. Remember to be flexible with your plans. Weather should always determine your course of action. If you are boating or kayaking across the channel, you should also file a formal float plan with the harbormaster before departing and contact island rangers at the beginning and end of the paddle.

Carefully select and equip your paddle craft. Craft should be of a sea kayak design and kayakers must have the following items: 1) Lifejackets—all paddlers must have lifejackets; 2) Helmets—always wear a helmet when paddling below cliffs and in sea caves; 3) VHF radio, tow line, compass, throw bag, first aid kit, signaling device (airhorn, whistle, or signal mirror). Carry these items with you and know how to use them; 4) Wetsuits are highly recommended. Water temperatures remain cold throughout the year.

Sea Caves. Sea caves can be very dangerous—large waves or swells can fill a cave unexpectedly. Even on calm days, the wake from large ships in the channel can pose a danger to boaters and kayakers in caves. Be extremely careful and wear a helmet at all times when exploring sea caves. Always observe and evaluate sea conditions before entering any sea cave.

Shipping Lanes. Major shipping lanes lie between the islands and the mainland. Boaters and kayakers should be aware of their location and use caution when crossing them. Listen to the USCG notice to mariners broadcast on VHF Channel 22 since the waters in and surrounding the park are sometimes closed for military operations.

Regulations

In addition to the regulations listed below please see "Limiting Your Impact" on page 20 and the Laws and Policies section of the park website (www.nps.gov/chis) for additional information.

- You may not exit your kayak while in the sea caves.
- Do disturb wildlife within caves. It is illegal to feed, touch, tease, frighten, or intentionally disturb wildlife.
- Please avoid use of artificial lights in caves.
- Stay off rocks. Scorpion Rock and all other offshore islets are off limits.
- Several sea caves are closed to public entry. To protect nesting ashy storm-petrels and Xantus's murrelets and their habitats, Bat Cave and caves #3 and #4 within the Cavern Point Cove Cave Complex are closed year-round. (Bat Cave: UTM 11S 0262623, 3770695 Lat. N34°03'07.2", Long. W119°34'25; Cavern #3 & #4: UTM 11S 0263641, 3770901 Lat. N34°03'16.0", Long. W119°33'41). Refer to the map above.
- Marine reserves are closed to fishing. The area between Scorpion Rock and Potato Harbor from the shoreline out to six nautical miles is a marine reserve— the take of living, geological, or cultural resources is prohibited. Please see page 9 for more information on marine reserves.

Landing Permits and Procedures

There are no landing permits required for the islands administered by the NPS; however, there are closed and restricted areas on each island. Please refer to the "Limiting Your Impact" section on page 20 for information on regulations and guidelines. A landing permit is required to land on The Nature Conservancy (TNC) property on Santa Cruz Island. It is recommended that boaters contact the park ranger on each island before landing for an orientation, information on daily events, island safety, landing instructions, weather conditions, or camping check-in. Park rangers occasionally monitor VHF Channel 16. Channel 16 is a hailing frequency only, and rangers will instruct you to switch to another channel upon contact. If you cannot hail the park ranger on the island on which you plan to land, try contacting a ranger on a neighboring island, as island canyons and mountains sometimes obscure radio transmission. Boaters may land according to the following procedures. Please note that rocks or islets on or near any of the islands are closed year-round to any landing.

Santa Barbara Island: A permit is not required to land or hike on Santa Barbara Island. Access to the island is permitted only at the Landing Cove. The landing dock is available for unloading purposes only. No craft, including kayaks and inflatables, should be left moored to the dock. Please lift your inflatables up to the upper landing.

Anacapa Island: A permit is not required to land or hike on East Anacapa Island or at Frenchys Cove. West Anacapa (except Frenchys Cove) is a protected research natural area and is closed to visitors. Visitors are allowed on Middle Anacapa by permit only and when accompanied by a park ranger. The moorings near the Landing Cove at East Anacapa Island are reserved for use by the NPS, the USCG, and the park concessionaire only. Private boaters must anchor a reasonable distance from these moorings. This is not an all-weather anchorage. It is recommended that one person stay on board the boat at all times. The landing dock is available for unloading purposes only. No craft, including kayaks and inflatables, should be left moored to the dock. Please lift your inflatables and kayaks up to the lower landing.

Santa Cruz Island: Boaters may land on the eastern 24 percent of Santa Cruz Island without a permit. This area is owned by the NPS and is east of the property line between Prisoners Harbor and Valley Anchorage. No buoys are available at any landing area. Buoys are reserved for the NPS and the USCG. A pier is available at Scorpion Anchorage and Prisoners Harbor. Due to surf and swell conditions, boaters should use extreme caution when making surf-landings at any beach, especially Smugglers Cove and those beaches facing south and southeast between San Pedro Point and Sandstone Point.

A permit to land on the other 76 percent of Santa Cruz Island is required from TNC. A fee is charged, and no overnight island use is permitted. Contact (805) 642-0345 ext. 503 for a permit; allow 15 days for processing. For more information, visit www.nature.org/

Santa Rosa Island: Boaters may land along coastline and on beaches without a permit for day use only. Beaches between and including Skunk Point and East Point are closed from March 1st to September 15th in order to protect the threatened snowy plover. The beaches around Sandy Point are closed year-round. Boaters may not use the mooring buoys in Bechers Bay. They are reserved for the NPS, the Coast Guard, and the park concessionaire.

San Miguel Island: Overnight anchorages are restricted to Cuyler Harbor and Tyler Bight. Visitors may land only on the beach at Cuyler Harbor. Visitors may walk the beach at Cuyler Harbor and hike up Nidever Canyon to the ranger station. To hike beyond the ranger station, visitors must be escorted by a ranger and have a permit. Call (805) 658-5711 prior to mainland departure to obtain a permit.

Santa Barbara Island

THE SMALLEST OF THE CHANNEL ISLANDS IS DECEPTIVE. FROM A distance, this one-square-mile island looks barren, uninteresting, and forlorn. Upon closer examination, the island offers more than one would expect—an island of resting elephant seals, blooming yellow flowers, tumbling Xantus's murrelet chicks, and rich cultural history. Santa Barbara Island is the center of a chain of jewels, a crossroads for people and animals.

Santa Barbara Island is 38 miles from San Pedro, California. The smallest of the California Channel Islands, it is only one square mile in size, or 639 acres. Formed by underwater volcanic activity, Santa Barbara Island is roughly triangular in outline and emerges from the ocean as a giant, twin-peaked mesa with steep cliffs. In 1602 explorer Sebastian Vizcaino named Santa Barbara Island in honor of the saint whose day is December 4th, the day he arrived.

Visitors to Santa Barbara Island can witness the incredible recovery of the island's plant life and wildlife after years of habitat and species loss due to ranching and farming activities, including the introduction of nonnative plants, rabbits, and cats. Although non-native grasses still dominate the landscape, native vegetation is recovering slowly with the help of the National Park Service's resource management program. After winter rains, the native plants of the island come alive with color. The strange tree sunflower, or coreopsis, blossoms with bright yellow bouquets. Other plants, like the endemic Santa Barbara Island live-forever, shrubby buckwheat, chickory, and cream cups, add touches of color to the island's palette.

This recovery of native vegetation, along with the removal of non-native predators, has aided in the reestablishment of nesting land birds. Today there are 14 landbirds that nest annually on the island. Three of these, the horned lark, orange-crowned warbler, and house finch, are endemic subspecies found only on Santa Barbara Island.

Unfortunately, the island's recovery did not come soon enough for the endemic Santa Barbara Island song sparrow. The destruction of this sparrow's sagebrush and coreopsis nesting habitat and the presence of feral cats led to the extinction of this species in the 1960s. This sparrow, which was found only on Santa Barbara Island and is now lost forever, was one of the smallest forms of song sparrow, differentiated by its very grey back.

Seabird colonies have also benefited from the recovery of Santa Barbara Island. The island is one of the most important seabird nesting sites within the Channel Islands, with 11 nesting species. Thousands of western gulls nest every year on the island, some right along the trailside. Fluffy chicks hatch in June and mature to fly away from the nest in July. The steep cliffs also provide nesting sites for the endangered California brown pelicans, three species of cormorants, three species of storm-petrels, and one of the world's largest colonies of Xantus's murrelets.

The rocky shores of Santa Barbara Island also provide resting and breeding areas for California sea lions, harbor seals, and northern elephant seals. These marine mammals feed in the rich kelp forests surrounding the island. The raucous barking of sea lions can be heard from most areas of the island. Overlooks, such as the Sea Lion Rookery, Webster Point, and Elephant Seal Cove, provide excellent spots to look down on seals and sea lions. Visitors can also jump in the water to see what lies beneath the ocean surface. Snorkeling in the Landing Cove, visitors can see bright sea stars, spiny sea urchins, and brilliant orange Garibaldi fish. California sea lions and occasional harbor seals frequent the Landing Cove waters and the surrounding rocky ledges.

All of these incredible resources can be experienced by hiking the six miles of trails and by snorkeling, swimming, or kayaking along the island's coast.

Things To Do

- One-day trips and long overnight camping trips (minimum stay is generally 3 days—Friday to Sunday).
- The entire island is accessible through the six miles of scenic trails. Unlimited and exceptional island coastal views await the visitor.
- Ideal place for swimming, snorkeling, diving, and kayaking. Since Santa Barbara Island is a cliff island, access to the water is only at the Landing Cove (no beaches).
- Excellent wildlife viewing—seabirds, seals, and sea lions.
- Great place to the see recovery of native vegetation. Wonderful wildflower displays in the spring.

Refer to related articles for more information.

Island Facts

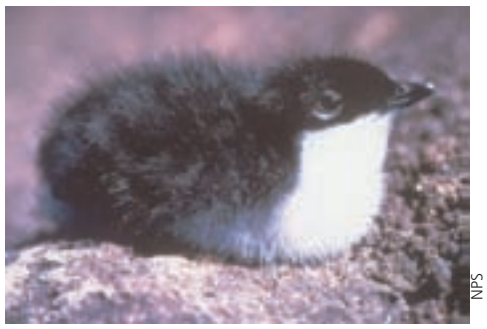
- Located in Santa Barbara County.
- One square mile in size.
- Average rainfall is 12 inches per year.
- The endemic, threatened island night lizard occurs only on Santa Barbara, San Nicholas, and San Clemente Islands.
- Home to 14 endemic plant species and subspecies that occur only on the Channel Islands. Forms of buckwheat, dudleya, cream cups, and chicory are found only on Santa Barbara Island.
- The island's cliffs offer perfect nesting habitat for one of the world's largest breeding colonies of Xantus's murrelets, a rare seabird.
- Squatters lived on the island before government leasing began in 1871.

C. Drost

Island night lizard

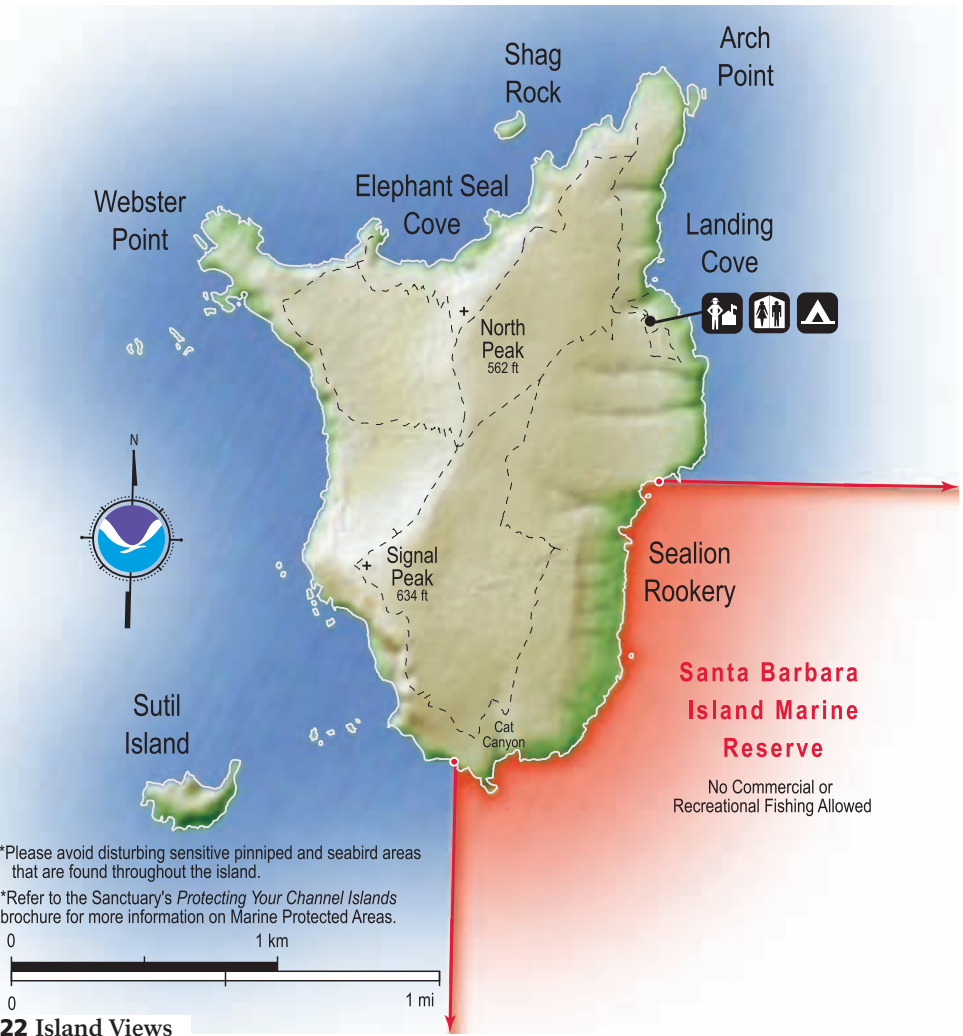
Tim Hauf

Santa Barbara Island live-forever



NPS

Xantus's murrelet chick



Tim Hauf

Coreopsis near Arch Point

Hiking Information

Destination (from visitor center)	Distance (miles, round-trip)	Difficulty	Description
Arch Point	2	Moderate	Great views and wildflowers in season.
Elephant Seal Cove	5	Strenuous	View elephant seals from steep cliffs.
Sea Lion Rookery	4	Moderate	View seal lions as they haul out on the coast.

- Portions of trails are subject to closure when pelicans are nesting from January - August.
- Hikers must stay on island trails to protect vegetation, nesting seabirds, and for visitor safety.

Falcon

(continued from page 1)

A Surprise Discovery

Although a pair of peregrine falcons returned to Santa Barbara Island in 1995 and began nesting, no successful reproduction had been documented or confirmed until April 2007 when raptor biologist Brian Latta made a surprise discovery. "I climbed to the eyrie, hoping to recover an unhatched egg we could use for contaminant analysis. Imagine my surprise to find two recently hatched young and another beginning to hatch."

When the chicks were two to three weeks of age, biologists returned to the nest site to band them so they could be identified and studied throughout the rest of their life. The chicks fledged, or left the nest, in May 2007.

Peregrine Falcon Recovery

The Channel Islands are the last area in the country to see recovery of peregrine falcons.

Prior to 1945 there were between 20 and 30 pairs on the Channel Islands and hundreds in southern California. However, by 1955 they had disappeared from the islands and only two pairs were located in California by 1970.

In 1975 the Santa Cruz Predatory Bird Research Group (SCPRG) was formed to restore the endangered peregrine falcon population in California. Between 1979 and 1992 they captive bred and released over 800 birds throughout the state, including 31 on the Channel Islands. The first pair to become reestablished on the islands was on Anacapa in 1987, and in 1989 the first recorded natural reproduction on the islands since the 1940s occurred on West Anacapa. Today there are about 30 active pairs of peregrine falcons on the Channel Islands.

Falcon's Future

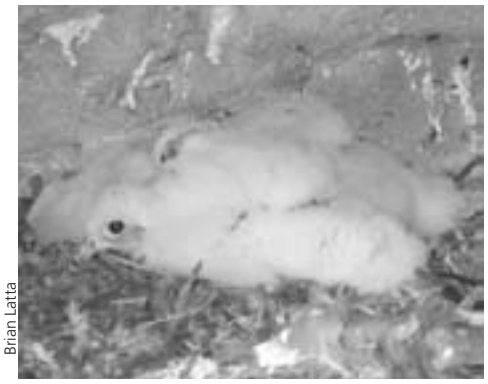
For the last decade, lack of funding and logistical issues made monitoring peregrine falcons on Santa Barbara Island difficult. This year, however, the Montrose Settlements Restoration Program funded the SCPBRG to conduct two comprehensive monitoring events within a five year period. Monitoring began in February 2007.

It is not known to what degree the recovery of peregrine falcons on the Channel Islands is being affected by ongoing contamination in the food web. Some pairs may still be experiencing reduced productivity due to eggshell thinning. SCPBRG will collect prey remains when they band the new chicks for contaminant analysis. This program will monitor the distribution, number of pairs, and reproductive success of peregrine falcons on the Channel Islands.

"The more we know about the status of peregrines on the Channel Islands, the better we can protect and restore them," said Greg Baker, program manager for the Montrose Settlements Restoration Program. "As top predators of their food chain, peregrine falcons are also an excellent indicator species of the overall health of the ecosystem in which they live."

Peregrine Facts

- Peregrines are widespread throughout the world and are found in every continent except for Antarctica.
- Peregrines prey on land- and seabirds.
- Peregrine falcons are the fastest living creatures. The latest recorded top flight speed is 284 mph.
- They have a lifespan in the wild of about 12-16 years.
- They start breeding at around two years of age.
- The name peregrine means "wanderer" and Northern-nesting peregrines are among North America's long-distance migratory species, some moving over 15,000 miles annually.



Brian Latta

Peregrine chicks in Santa Barbara Island nest

David Hanes

Biologist rappel on Santa Barbara Island to check on peregrine chicks

Zach Smith

Peregrine falcon in flight on Santa Barbara Island

NPS

Releasing peregrine falcons on San Miguel Island.

The SCPBRG was formed ion 1975 to restore an endangered peregrine falcon population in California. Based out of U.C. Santa Cruz, they captive breed and released over 800 peregrine falcons throughout California, including the Channel Islands. Today, they continue to monitor and work with peregrines and other birds of prey in the Channel Islands and California. More information on SCPBRG can be found at www.scpbrg.org.

The Montrose Settlements Restoration Program is a multi-agency effort to restore resources injured by past DDT and PCB releases. The program uses funds from a 2000 settlement with the Montrose Chemical Corporation and other defendants to fund bald eagle, seabird, and peregrine falcon restoration projects, as well as projects to restore fishing and fish habitats. Further information on the Montrose Settlements Restoration program can be found at www.montroserestoration.gov.

Tidepooling

DUE TO THEIR RELATIVE ISOLATION AND PROTECTION, THE TIDEPOOLS IN CHANNEL ISLANDS National Park are some of the best within southern California. Anemones, sea stars, urchins, limpets, periwinkles, chitons, barnacles, mussels, and many other beautiful species can be seen at numerous pristine tidepool sites, including Frenchys Cove on Anacapa. Check with the park's boat concessionaires for trips to these tidepooling areas.

The area between the land and the sea is not distinct, but is a zone of transition. This area may be covered with water during high tide or exposed to sunlight during low tide. Life in this intertidal region must be the hardiest within the marine environment—able to withstand hours of exposure and the incessant pounding of the energy-filled surf.

Intertidal life has adapted to the sea and the land. When looking at a tidepool area, notice how plants and animals may be found in certain areas and not in others. Those living in the upper splash zone are tolerant to sunlight, heat, and water loss and have either a means to "shelter" themselves or the ability to move into an area of greater moisture. An animal with a tightly closed shell or a shell firmly attached to rock will hold water within, so that it does not require water surrounding it at all times. Animals found in rock crevices and submerged pools usually require more moisture to prevent them from drying out.

How an animal feeds often depends on its ability to move. An animal that moves about is able to search for its food. Some graze the rocks for algae, while others feed on settled debris. An animal that remains stationary feeds on food particles suspended within water.

Because space is a limiting factor, there is competition between organisms. Many tidepool animals and plants are found in a small area, some may live on each other or use an old shell as a surface on which to live. This is why collecting is not permitted—you may be taking away a home.

Although hardy against the forces of nature, the plants and animals of the intertidal zone cannot entirely endure the impact of humans. Since individuals interact with one another, minute changes in the area could disrupt the entire community. While exploring, please keep in mind these tidepool tips:

Tim Hauf

Tidepooling, Santa Barbara Island

- Watch your step! The rocks can be very slippery, and there may be small animals on them.
- Keep an eye on the waves. The surge can sneak up on you.
- Take your time and look carefully. Tidepool organisms are often very small and camouflaged.
- Do not collect anything! Not only is it unlawful, but if animals and shells are taken, there may be nothing left for others to enjoy.
- If you pick up an animal to observe, please place it back where it was found. That particular spot is its home territory.
- Although you may not know the animals by name, through simple observation a great deal of information can be learned. Consider, for example, what keeps it from drying out? Why doesn't it get swept out to sea? Does it search for food or wait for food to come to it?

VOLUNTEERS COME FROM ALL OVER THE world to help preserve and protect America's natural and cultural heritage for the enjoyment of this and future generations. Volunteers of all ages give their time and expertise to help achieve the National Park Service mission.

Channel Islands National Park has many volunteer opportunities including staffing the information desk at the visitor center, interpretive naturalist, scientific data entry, historic research, trail maintenance, vegetation restoration, and much more. Some of our recent volunteer projects have included island fox pen building on Santa Rosa and San Miguel Islands as part of the island fox captive breeding program and recovery effort, Del Norte Trail maintenance, planting native plants in the campground on eastern Santa Cruz Island, beach clean-up on eastern Santa Cruz Island, and many others.

Although the park can never repay its volunteers for their valuable contributions, we do our best to make your time happy and fulfilling. As for the volunteering itself, "never a dull moment" is the going catchphrase. While some of the jobs are continuous, others finish and then it's on to something else, for as long as you wish to stay.

Whatever volunteer job you choose, please know that every park employee knows we could never provide the service we do without our incredible volunteers. We could not do it without them.

For more volunteer information, please contact our Volunteer-In-Parks Coordinator at (805) 658-5700 or visit www.nps.gov/chis.

Sanctuary and Park Volunteer Opportunity

Channel Islands Naturalist Corps (CINC) is a group of specially trained volunteers dedicated to educating visitors to Channel Islands National Marine Sanctuary and Channel Islands National Park. Members provide education about the unique resources found within the sanctuary and park to thousands of local residents, tourists, and school children annually. CINC volunteers also participate in numerous local outreach events and collect valuable research on marine mammals and other important resources.

Volunteers accepted into the program are specially trained in a five-week training class with topics including sanctuary and park resource protection programs; interpretation techniques; and an overview of the physical, biological, and cultural aspects of the Santa Barbara Channel and Channel Islands.

CINC volunteers represent the sanctuary and park onboard local whale watch vessels and educational cruises. Additional training opportunities are available to become certified to lead island hikes. Get involved in your sanctuary and park to help protect the ocean and islands through education and research.

Volunteer requirements include: 1) being at least 18 years of age; 2) enjoying working with people (strong public speaking skills desired); 3) knowledge of, or desire to learn about, the natural and cultural history of the Santa Barbara Channel and Channel Islands; 4) attending the required training and professional development sessions; 5) committing to one year of volunteer service with a minimum of 80 hours (which includes three hours per month at volunteer meetings); and 6) ability to handle up to eight hours at sea on power and/or sailing vessels.

For information about our upcoming volunteer orientation and training classes programs please call (805) 382-6149 or visit http://channelislands.noaa.gov/edu/edu_natc.html.

Parks as Classrooms

ATTENTION EDUCATORS! DO YOU KNOW students who would like to take a close look at a sea star, examine a pygmy mammoth bone, learn more about the true story that inspired the book Island of the Blue Dolphins, or set foot on one of the park's islands? Then the park's education program is for you.

Each year rangers at Channel Islands National Park share park resources with nearly 10,000 students in classrooms and again that many at the park's visitor center.

Hour-long, in-class programs cover a variety of natural and cultural history topics for grades 2–5 in local schools. Programs at the visitor center meet the needs of classes from preschool through university level. There is no charge for these programs and they are aligned with the California content standards.

For more information visit www.nps.gov/chis or contact the park's education coordinator by phone at (805) 658-5735.

Island Packers, an official park concessionaire, also offers a variety of student programs, from half-day whale watching to full-day Anacapa and Santa Cruz Island trips. For more information visit www.islandpackers.com or call (805) 642-1393.

Be a Junior Ranger

THIS PROGRAM HELPS CHILDREN discover and protect the wonders of the islands. Ask for a free Junior Ranger booklet at the visitor center, boat/plane concessionaire offices, or on the islands from park staff. You may also download a copy at www.nps.gov/chis.

Kids of all ages may also become Web Rangers by visiting www.nps.gov/webrangers. At the WebRanger website, you'll play fun games and solve mysteries and puzzles, while learning what park rangers do to help protect our natural resources and our cultural heritage. You'll also learn how park rangers observe and discover new things about our national parks—things to share with visitors like you.

National Park Service
Department of the Interior

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