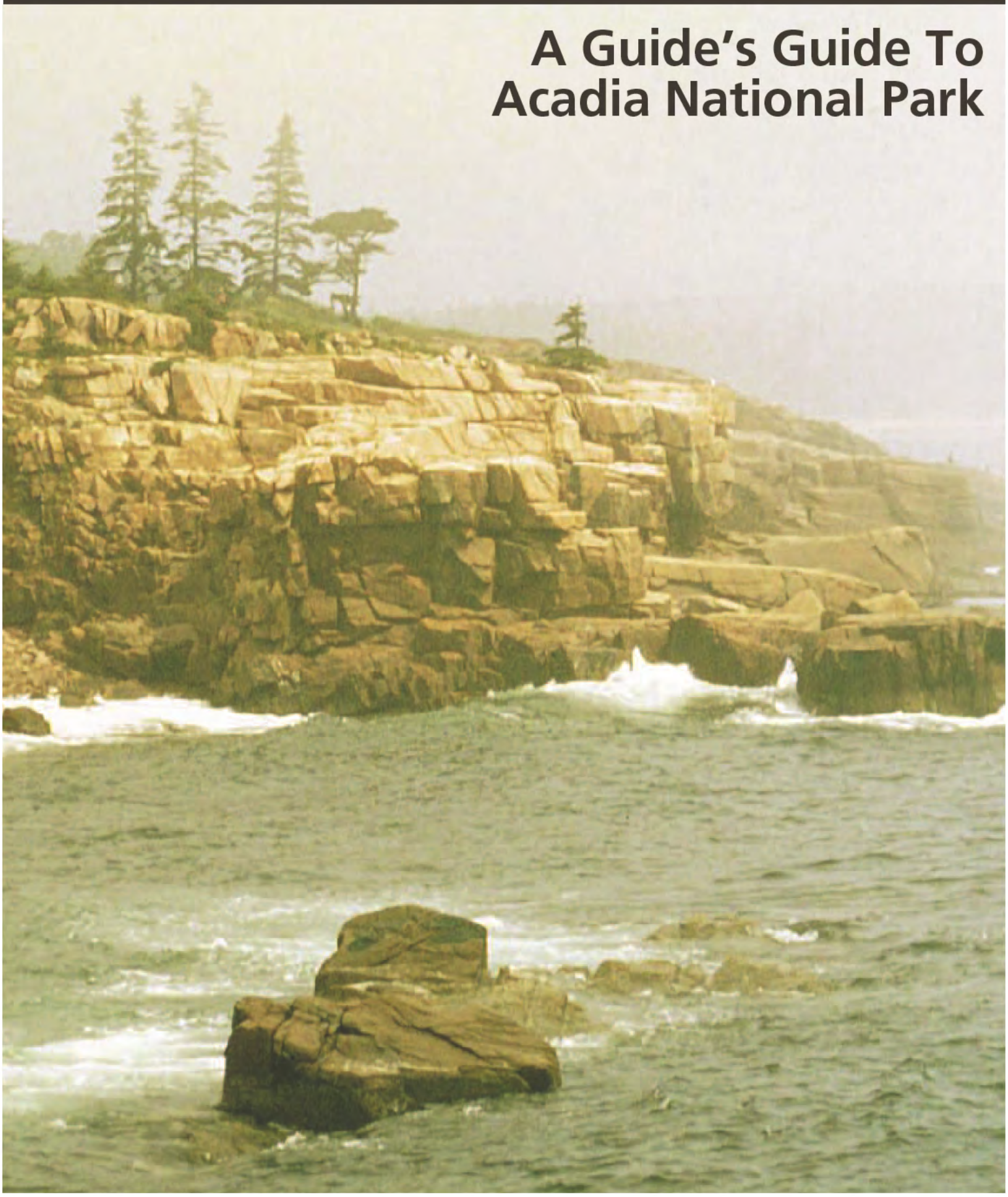
Acadia

National Park Service
U.S. Department of the Interior

A Guide's Guide To Acadia National Park



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WELCOME TO ACADIA NATIONAL PARK

Letter from the Superintendent

Dear Guide User,

You are an important partner of the National Park Service. The 2012 Guide's Guide helps meet the standards set forth in the Commercial Services Plan by providing you with a better understanding of Acadia's resources, significance, and need for low impact visits. Some visitors discover Acadia on their own, while others do so with an organized group—either private or commercial. Because of the large number of commercial users in and around Acadia, park managers request that commercial activities contribute to the sustainability of park resources, enhance educational opportunities, and offer quality interpretation.

Whether you are a bus tour guide searching for more specific information, a supervisor training staff to work with visitors, or a business owner needing park information to answer customer questions, the *Guide's Guide* will provide you with the tools to:

- Impart to visitors the primary purpose of Acadia National Park.
- Understand some of the unique natural and historical aspects of Acadia.
- Deliver accurate information to improve interpretation to visitors using commercial services.
- Magnify the impact of park conservation messages.
- Apply Leave No Trace principles in each park area.

Please familiarize yourself with this section before beginning the rest of the Guide's Guide. We hope this material will be part of an effective trip to Acadia National Park. Whatever your intent—exploring habitats of ecological importance, reflecting on historical events of both local and national value, or simply enjoying the exceptional opportunities for inspiration and recreation—your efforts to further the park's mission with your group assure the continued protection of Acadia as a national treasure.

Thank you for your cooperation. Enjoy the park!

Sincerely,

Sheridan Steele

Park Superintendent

Acadia National Park – A Place Like No Other

"It is a true park area in the highest sense, totally different from any other that we have."

"It is rich in historic association, in scientific interest, and in landscape beauty."

"There is no other place along the Atlantic coast where so wide a range of geologic facts are shown or where such valuable material is offered for research."

"It will give a healthy playground to multitudes of hard-working men and women."

"With its adjacent inlets and headlands, it stands out as offering the greatest natural diversity."

—excerpts from letters to President Woodrow Wilson in support of the park's creation

The above lines, written in the early 1900s in support of the creation of a national park on Mount Desert Island along the coast of Maine, are as applicable today as when they were first penned. The foresight of stewardship-minded individuals at the turn of the 19th century created this first national park east of the Mississippi in 1916. Private citizens, through their generous donations of land, gave this gift to the American people. Granite mountain tops, sparkling lakes, forested valleys, meadows, marshes, and rocky coastline weave together to create a national park like no other. Acadia's landscape holds human history as well, from American Indians and European explorers to a seafaring population and conservationists. Acadia's resources are not found in oil or lumber, but in undisturbed natural systems for study, exceptional scenery for individual inspiration, protected habitat for plants and animals, and defining stories of people and the land. The National Park Service at Acadia is charged by federal law to protect and conserve Acadia's outstanding scenic and natural resources and cultural identity for present and future generations. Through this mission, preservation, education, scientific research, and recreation opportunities abound.

Acadia, like other national parks, offers opportunities to fulfill emotional and spiritual needs for renewal and to invoke attitudes of reverence and stewardship. Because of the deep affection held for Acadia, private citizens of both a century ago and today took the actions necessary to preserve these beautiful landscapes. As a national park, Acadia has continued the tradition of providing spiritual respite and encouraging responsible stewardship. Acadia's easy accessibility for all ages and all levels of ability make it possible for everyone to observe and be renewed by nature.

The flora and fauna of Acadia National Park and surrounding waters comprise a rich mix of species significant in their biodiversity. Botanically, Acadia lies in a transition zone between the northern coniferous forests and the temperate deciduous woods. The co-mingling of species from two distinct regions creates unusual plant associations. Rare and endangered plant species find refuge here. The variety of vegetation supports a diversity of wildlife as well. Critical habitat is provided for all animals, especially for protected species and nesting seabirds on outlying islands.

The cultural resources of Acadia National Park document human activities that span 5,000 years. Acadia's human history begins with centuries of use by native people, who became known as the Wabanaki. Only five centuries ago, Europeans began making contact with these people, as they too explored and settled here. Decades of commercial use by lumbermen, shipbuilders, and fishermen overlapped and even fostered increased pressure for conservation and the evolution of tourism. Today, over two million visitors each year seek Acadia's gifts, either by trail, boat, bicycle, vehicle, or through quiet contemplation.

Acadia National Park provides many opportunities to increase our understanding of natural systems and human impact on them. Considered a living laboratory since the 19th century, Acadia offers significant possibilities for education, continued ecosystem monitoring, and research that generates valuable data. Research conducted by park staff, visiting researchers, and citizen scientists continue to add to Acadia's foundation of historic scientific reports. While a variety of science occurs throughout the park, the Schoodic Education and Research Center has turned a formal navy base into a focal point for science and education.

The natural landforms of Acadia National Park illustrate the dynamics of many geologic processes. Exploring Acadia is like walking through a geology textbook with chapters that include all three rock types, plate tectonics, volcanism, glaciations, and shoreline erosion. The park's granite mountains are surrounded by sedimentary and metamorphic rocks, covering a time span of half a billion years. The awesome power of glaciers is evident in the valleys and cliff sides, while the on-going assault by the sea reworks the island's edge even today. Significant geologic resources include Somes Sound, a glacially sculpted fjord (or fjard); Sand Beach, a natural pocket beach composed primarily of shell fragments; and a collection of former sea-level features such as cobble beaches, cliffs, and caves that are now exposed approximately 240 feet above current sea level.

Acadia as Part of the National Park System

The National Park Service preserves some of the most cherished natural and cultural areas of our nation. Three hundred and ninety-five sites cover more than 84 million acres, encompassing every state except Delaware. Sites are also found in the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands.

The National Park System includes beautiful and significant natural areas such as seashores, lakeshores, mountains, canyons, caves, deserts, coral reefs, and geologic wonders. Also preserved are important pieces of our nation's history such as battlefields, war sites, American Indian sites, and the homes of presidents, inventors, civil rights leaders, authors, and others of national prominence. A site can be called a national park, historic site, historical park, monument, parkway, lakeshore, seashore or any of 11 other titles. Acadia is one of 58 sites with national park designation.

In 1872, Yellowstone was the first national park created for a "public park or pleasuring-ground for the benefit and enjoyment of the people." Other parks such as Sequoia, Mount Rainier, Crater Lake, and Glacier were created between the 1890s and early 1900s. Acadia was first established as Sieur de Monts National Monument by the signature of President Woodrow Wilson on July 8, 1916, just one month before he signed the act to create the National Park Service itself on August 25, 1916. The directive given the service was to "…conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

This mission continues into the 21st century. The dual directive to preserve the land, history, and wildlife while making them available for public enjoyment is challenging. Acadia's park policies are derived from this act. Acadia's specific purpose reads:

1. To protect and conserve the land and water resources, the scenery, the natural and historic objects, and the biota within the park boundary.
2. To promote and regulate the use of the park for the benefit and enjoyment of the people in such manner and by such means as will leave the park resources unimpaired for the enjoyment of future generations.
3. To protect and preserve the scenic, ecological, historic, archeological, and cultural resources of the Acadian archipelago and to limit development of the islands to preserve their natural qualities and traditional resource-based land uses.

This is a big job! Merely setting property aside does not guarantee that it is protected. Outside influences from water pollution, air pollution, and loss of surrounding habitat degrade the "protected" area inside the park boundary. Park employees are dedicated to protecting the park and promoting appreciation and stewardship values in park visitors. But we can't do it alone. We hope you will share in these efforts and be a partner for protection. After all, Acadia National Park belongs to all of us, and to our future.

*Letter excerpts from statements by Secretary of the Interior Franklin K. Lane; former President Theodore Roosevelt; Acadia founder George B. Dorr; David White of the U.S. Geological Survey; and M.L. Fernald of Harvard University.

Acadia National Park

Isle au Haut

Schoodic Peninsula

Mount Desert Island

Acadia Fast Facts

Date Established

- July 8, 1916 Sieur de Monts National Monument
- February 26, 1919 Lafayette National Park
- January 19, 1929 Acadia National Park

Location and Area

Most of Acadia National Park is on Mount Desert Island, located mid-way along Maine's coast. The park is a one-hour drive to the southeast from Bangor. Schoodic Peninsula and seven other islands including Isle au Haut are also preserved. Acadia holds over 49,000 acres.

- 31,000 on Mount Desert Island
- 2,900 on Isle au Haut
- 2,400 on Schoodic Peninsula and associated islands
- 13,000 in conservation easements

Quick Statistics

- Fifth smallest national park, one of the top 10 visited national parks
- 145 miles of hiking trails (125 on MDI)
- 45 miles of carriage roads in park
- Park Loop Road—27 miles
- 26 mountains—8 mountains over 1000 feet (Cadillac, 1530; Dorr, 1,270; Penobscot, 1,194; Champlain, 1,058; Sargent, 1,373; Pemetic, 1,248; Bernard, 1,071; Gilmore, 1,036)
- 26 lakes and ponds on Mount Desert Island (Deepest lake—Jordan Pond -150 feet)

Flora and Fauna

- 1,101 species of flowering plants
- 40 species of mammals
- 11 species of amphibians
- 7 species of reptiles
- 338 species of birds
- 31 species of fish

Visitation

The park receives over two million visitors a year. The busiest months are July, August, and September; slowest months are December, January, and February.

Weather

Acadia National Park's weather is largely a product of latitude and marine influences. Precipitation occurs in every form. Rain falls in every month with an annual average of 48". The park also has a respectable annual average of 61" of snow. The tempering maritime conditions, however, with frequent freezing and thawing, prevent large, long-term accumulations. On a daily and annual basis, Maine temperatures are more severe inland than they are on Mount Desert Island and on the coast in general.

Spring
Spring can be foggy with temperatures ranging between 30 and 70 degrees. Black flies are common in late May and June. Mosquitoes can also be bothersome. Wear light-colored clothing, long sleeve shirts and long pants for protection.

Summer
Summer daytime temperatures range from 60 to 85 degrees. Evenings are cooler. Dressing in layers is advisable for any boating or hiking activities. Ocean water temperatures range from 50 to 60 degrees. Lake water temperatures range from 55 to 72 degrees.

Autumn
Autumn temperatures can range from the low 70s during the day to freezing during the night. Come prepared for all types of weather, from sun to fog, from downpours to flurries. Fall foliage often peaks during the first couple of weeks in October.

Winter
Due to Acadia's coastal location, snow and winter weather conditions change rapidly. Temperatures vary from mid-30s to below zero. The park averages 61" of snow annually.
For the latest in weather information, call the local weather phone line at (207)667-8910, check the current weather conditions on the internet, or call the park at (207)288-3338.

Weather Trivia
The Maine coastal climate has been ranked second only to the Pacific Northwest in annual precipitation. Three localized weather systems dominate Acadia:

- **"Smokey sou'wester**" In the summer, the typical weather system is a warm flow of air over the cool Gulf of Maine that produces the heaviest fogs of the year. These southwesterly patterns are associated with low pressure systems and may last for several days.
- **Bermuda High** is the opposite of the southwester. It is a stationary high pressure system that sits over the Atlantic to the southwest and dominates New England weather for days. This system repels intruding fronts and weather often becomes hot and humid.
- **"Nor'easters**" In the winter, these are associated with strong northeast winds that bring lots of snow and rain to coastal New England.

Frequently Asked Questions
How many days should I spend in Acadia? An average stay here is 3-4 days.

Is there any lodging in the park? Acadia only has two campgrounds, but there are many other types of accommodations in nearby towns.

What is there for children to do in Acadia? There are many miles of shoreline to explore, hiking trails to climb, and carriage roads on which to bicycle. Two beaches offer salt water or fresh water in which to swim. Children of all ages may also participate in the Acadia Junior Ranger Program. Some of the ranger-led programs are specifically designed for children.

Where are pets allowed in the park? Pets are allowed on most hiking trails and carriage roads, as long as they are on a leash no longer than 6 feet. They are allowed at the campgrounds as long as they are not left unattended.

Can I leave my pet in the car while I hike? It is not recommended that pets be left in cars, especially during the summer months.

Where can I see puffins? There are three nesting islands off the coast of Maine. In order to see puffins, you must take a boat to one of these islands, one of which leaves from Mount Desert Island. Puffins aren't seen on or from Mount Desert Island.

What is the origin of "Acadia?" Acadia probably stems from a name given to the area by the explorer, Giovanni Verrazano, when he sailed by in 1524.The shoreline reminded him of a part of Greece named Arcadia.

Where does the term Down East come from? During the 18th and 19th centuries, Maine was a shipping capital. When schooners sailed from Boston to ports in Maine, they traveled to the east. They also sailed downwind (with the wind at their backs).This led to the expression "Down East."

Is it Mount Desert Island or Mount Dessert Island? Samuel Champlain, a French navigator and cartographer, sailed by Mount Desert Island in 1604. He named it "Isles des Monts Desert," with the accent on the last syllable, as it would be in the French language. He wasn't implying that it was a desert. The phrase means "island of barren mountains." That's why it's pronounced both as it is spelled and as the French phrase would be pronounced (dessert).

How far are you from Boston? 264 miles

How long is the loop road and how long will it take to drive it? 27 miles, 3-4 hours including some stops

What Ranger-led activities are available? Between mid-May and mid-October you may accompany a ranger on a hike, a shoreline walk, or a boat cruise. Rangers also offer talks on various subjects, evening amphitheater programs at the campgrounds, children's programs, and provide opportunities to view peregrine falcons and raptors.

When does the Island Explorer Shuttle Bus run and where does it go? The Island Explorer runs between late June and mid-October. It travels between Bar Harbor, Northeast Harbor, Southwest Harbor and various locations in the park.

How cold is the water at Sand Beach? Between 55-60 degrees F

When can I make reservations for Blackwoods and Seawall? Reservations can be made six months in advance by calling 877-444-6777, or online at www.recreation.gov.

I have never been to Acadia. Should I camp at Blackwoods or Seawall? Some people prefer to be closer to the main part of the park, the carriage roads, and Bar Harbor, so choose Blackwoods. Others prefer to be in a more remote area of the island, so choose Seawall. As far as facilities are concerned, they are the same, and both have wooded sites with no sites directly on the ocean.

Can I winter camp in Acadia? Yes. You may winter camp at Blackwoods Campground.

Is there backcountry camping in Acadia? No. Backcountry camping is prohibited because the island is too small and the environment too fragile.

How do I make a group camping reservation? Call or go to our website to download the form to be mailed or faxed to us. See the Park Activities In-Depth/Camping section for more information.

When and how can I make reservations to camp at Isle au Haut? Call (207)288-3338 for a reservation form, or go to our website to download the form. You may then send it to the park no earlier than April 1 with a $25 special use permit fee.

Does my camping fee cover the entrance fee into the park? No. The two fees are separate.

Are there water and electric hookups in the park campgrounds? No, but there is a dump station.

Are there any campsites on the ocean in Blackwoods or Seawall campgrounds? No. They are both a short walk (5-10 minutes) to the ocean.

Are there private campgrounds on the island? Yes, there are about 12 private campgrounds scattered around the island. We will be glad to send you a list.

When are black flies at Acadia? Usually they are most numerous between mid-May and mid-June, but that could vary from spring to spring. They breed in running water, so they will be more prevalent if it is a rainy spring.

How much snow does Acadia receive? Average snowfall in Acadia is about 61".

Can I rent skis nearby? Skis, snowshoes, and skates can be rented in Bar Harbor.

Is the road to Cadillac Mountain open to vehicles in the winter? No. Access is by snowmobile, skis, or on foot. It is a minimum walk of nine miles round trip. Temperatures on Cadillac can be well below zero, with extremely high winds and drifting snow.

Can I hike any of the mountain trails in the winter? Hiking mountain trails in the winter is not recommended. Trail markers and icy patches are obscured by drifting snow creating very dangerous conditions for hikers.

When does the Park Loop Road open and close each year? Each year the Park Loop Road closes on December 1 and reopens on April 15. The Ocean Drive section remains open all year.

What is the best time to see fall foliage? The leaves start turning their fall colors in September, but the peak time is usually mid-October.

IMPORTANT PARK INFORMATION

Bus/Coach/Vehicle Restrictions/Bridge Heights

Commercial vehicles are prohibited from use on park roads without prior permission from the park superintendent. Trucks are generally limited to a total of three axles. All vehicles must be within state weight limits.

Prohibited Access Points

Buses, motor coaches, or other motor tour vehicles are prohibited from entering onto and exiting from the park loop roadway or entering onto any other Acadia National Park area located on Mount Desert Island from the following roadways or routes:

- Bar Harbor
- West Street Extension
- Ledgelawn Avenue
- Harden Farm Road
- Otter Cliffs Road (emergency exit only)
- Ocean Drive (Schooner Head Road)
- Seal Harbor
- Stanley Brook Road
- Jordan Pond Road

Road Restrictions

While operating within the park, buses, motor coaches, or other motor tour vehicles are restricted to paved road surfaces and paved parking lot surfaces. Travel on unpaved surfaces, fire roads, etc., is prohibited with the exception of the gravel access road necessary to access Wildwood Stables. Buses are prohibited on Sargeant Drive (Town of Mount Desert regulation).

Many park roads feature historic underpasses constructed lower than conventional underpasses. Taller vehicles will not fit under the historic bridges. Please plan your route carefully. If damage to a bridge occurs, the offending vehicle will be cited and the park will seek restitution for damages to the historic bridge.

Height Restrictions

- The Park Loop Road is closed to vehicles taller than 12’0" from Fabbri Picnic Area to Wildwoods Stables. The Route 3 bridge over the Park Loop Road near Blackwoods Campground is 11’8" in the right lane and 12’0" in the left lane. Vehicles over 11’8" must drive in the left lane while passing beneath this overpass; please use caution.
- The Park Loop Road is closed to vehicles taller than 12’2" from Sieur de Monts to the entrance station.
- Stanley Brook Road is closed to vehicles taller than 10’4".
- Fish House Road in Otter Cove is closed to vehicles taller than 11’ 6”.
- Duck Brook Road is closed to vehicles taller than 12’4".

Length Restrictions

- The southern end of Schooner Head Road, also known as Great Head Road, between the Schooner Head Overlook intersection and Great Head Parking Lot is closed to vehicles longer than 20 feet and to trailers.
- Bass Harbor Head Road is closed to buses longer than 20 feet and to trailers.

Weight Restrictions

- Tour bus weights are limited to 27 tons GVW, in accordance with Maine regulations.

Jordan Pond House

- Tour buses are restricted to the left side of the entrance circle at Jordan Pond House.
- No more than two tour buses shall occupy this area at one time.
- If there are two buses in the specified area, additional buses are prohibited from entering the entrance circle.
- The right lane is reserved for the Island Explorer ONLY.
- Tour bus stays at Jordan Pond House shall be no longer than 30 minutes unless a reservation has been made prior to arrival.
- Excessive engine idling is prohibited.

Safety and Environmental Information

- Stopping or parking in an area that could create an impediment to vehicular movement (especially emergency vehicles) or endanger pedestrian traffic is prohibited.
- Bus or other tour vehicle engines are to be turned off as soon as unloading passengers is complete. No vehicle shall be left unattended with its engine running.

Commercial Fees

Entrance Fees

Entrance fees are applicable and shall be in accordance with current regulations for commercial tour bus operations. The driver of any vehicle operating under the authority of this permit shall be responsible for paying applicable entrance fees to the National Park Service at the Sand Beach Entrance Station, Hulls Cove Visitor Center, Bar Harbor Village Green, or Thompson Island Information Center. If you have any questions, please contact the fee coordinator in the park at (207)288-8786.

- Fees are based on the passenger capacity of each tour vehicle, not the number of passengers actually being transported.
- Outings conducted for educational purposes by schools or other bona fide educational institutions may qualify for a waiver of recreation fees if certain criteria are met. A letter stating official recognition as an educational entity is required or, alternatively, proof of educational tax exemption from the IRS or similar state authority. A statement of purpose must also be submitted, including a description of how the visit relates to the resources of the park. If approved, a letter to be presented at the time of visit will be issued.
- Fees are payable upon arrival in cash, by U.S. check or money order, or charged on Visa, MasterCard, American Express or Discover card. Make check or money order out for the exact amount of the fee to the National Park Service.

- Turn off bus engines at all stops. The noise and pollution are distracting, irritating, and lessen the visitors' enjoyment of the area. We are sure that your patrons and other visitors will appreciate your compliance.

Commercial Mini-Bus Tour

- $60 One Time
- Good for one entrance into Acadia National Park for a commercial tour mini-bus with a passenger capacity of 16 to 25.

Commercial Sedan Tour

- $5/person One Time
- Good for one entrance into Acadia National Park for a commercial tour sedan with a passenger capacity of 1 to 6. Federal Recreation Passes are allowed.

Commercial Tour Bus

- $150 One Time
- Good for one entrance into Acadia National Park for a commercial tour bus with a passenger capacity of 26 or more.

Commercial Van Tour

- $50 One Time
- Good for one entrance into Acadia National Park for a commercial tour van with a passenger capacity of 7 to 15.

Acadia National Park Regulations

Please help protect park resources and other visitors by abiding by the following regulations. Review these before your visit to the park and be sure that your group is aware of those regulations that will pertain specifically to your visit. Contact the park ranger office at (207)288-8791 if you have any questions. Failure to comply with park regulations can result in fines or arrest.

Accidents

All accidents must be reported to park rangers if property damage or personal injuries are involved. Park rangers can be contacted at (207)288-8791. If an emergency, call 911.

Alcohol Use and Possession

Consuming alcohol in any public building, in parking lots, or on designated swim beaches is prohibited. It is illegal to be in the park when under the influence of alcohol or controlled substances. The possession of alcoholic beverages by a minor (less than 21 years old) is prohibited. Moderate and wise use of alcohol is permitted in campgrounds and designated picnic areas.

ATV'S / Motorbikes

All motorized vehicles are prohibited on the park trails and carriage roads. All-terrain vehicles are not allowed anywhere in the park. Electric wheelchairs are permitted on the carriage roads.

Bicycles / Horses / Snowmobiles
Riding is permitted only on designated routes. Route maps are available at ranger stations and visitor center. Use is prohibited on all hiking trails.

Camping
Camping is permitted only in designated campsites at Blackwoods and Seawall campgrounds on Mount Desert Island.

Closures
- Seawall picnic area, Bass Harbor Head, Compass Harbor, and Lake Wood road, parking and shore areas are closed from 10 p.m. to one-half hour before sunrise.
- Long Pond fire road and Western Mountain roads (except Seal Cove road) are closed yearly from October 1 until spring re-opening from one-half hour after sunset to one-half hour before sunrise.
- Park Loop Road is closed from December 1 to April 15 with the exception of a two-mile stretch between Sand Beach and Otter Cliffs, and access to Jordan Pond from Seal Harbor.
- Other park areas may be closed to public use and travel for protection of designated rare or sensitive species including breeding or other critical habitat. Areas will be posted and information will be available at visitor contact stations.

Carriage Road Closures
- All carriage roads are closed to motor vehicles except for emergencies and official administrative purposes.
- In the early spring when the ground is soft, carriage roads may be closed temporarily.
- The Witch Hole–Paradise Hill loops of the carriage road system are closed to horses.
- The Eagle Lake loop of the carriage road system is closed to horses except between junctions #7 and #8 as shown on the park's official Carriage Road Users Map.
- Although not part of the park, carriage roads south of Jordan Pond are closed to bicycles.

Collection of Research Specimens
No scientific collecting is allowed in the park, whether as an individual or an educational institution, unless a special collection permit has been issued. All research and/or specimen collection conducted in Acadia National Park requires a written study proposal that has been reviewed and approved by the park. Please contact the Chief of Resource Management at (207)288-8720.

Feeding Wildlife
Feeding wildlife including sea gulls and any roadside begging animals is prohibited.

Fires
Fires are prohibited except in provided fireplaces or receptacles in established campgrounds and picnic areas. Fires may be temporarily banned in campgrounds and picnic areas during periods of high fire danger to protect park resources and reduce the risk of wildfires. Collection of dead and down wood is prohibited in the campgrounds.

Firearms
Visitors may not use or possess a firearm in the park. Concealed firearms are allowed with a valid permit.

Firecrackers
Sparklers are permitted; other firecrackers are prohibited.

Fishing
A state license is required for freshwater fishing. Licenses may be obtained at town offices on Mount Desert Island. No license is needed for ocean fishing.

Hunting and Trapping
Hunting and trapping on park lands are prohibited.

In-Line Skating / Rollerblades
Use of in-line skates, skate boards, or similar skating or coasting devices is allowed on paved roads only when closed to automobiles.

Permits
Permits are required for special events, public assembly or meetings, sale or distribution of printed matter, scattering of ashes, business operations (commercial use license), commercial photography, commercial vehicles, and any other special uses. Please contact the ranger station at (207)288-8793 for information.

Pets
May not be left unattended and shall be leashed or otherwise physically restrained at all times. Pets are allowed in all park locations except Sand Beach (May 15 – Sept 15), Echo Lake Beach (May 15-September 15), Isle au Haut campground, ladder trails, and inside public buildings. Pets are not allowed on ranger-led activities. Service dogs or sightseeing dogs may accompany their owner to all park locations.

Picnicking
Picnicking that involves preparing food by cooking or heating including use of charcoal and gas grills, camp stoves, etc. is permitted only in designated picnic areas. Picnicking without cooking is allowed anywhere in the park.

Public Property / Natural Features / Plants and Wildlife
The possession, injury, destruction, removal or disturbance of park property, or natural resources including animals, plants, minerals, cultural, and archeological objects is prohibited. This includes the collecting of rocks, cobbles, plants, marine organisms, other natural materials or historic objects and artifacts. Collection of uninhabited shells and sea glass is permitted.

Seatbelts
Federal law requires that seat belts are worn when driving or riding as a passenger in a national park.

Smoking

Smoking is prohibited in all federally owned public use and administrative buildings throughout the park. Smoking is also prohibited in the Wild Gardens of Acadia and on both swimming beaches.

Swimming

Under the Safe Drinking Water Act, Eagle Lake, Bubble Pond, Jordan Pond, Upper and Lower Hadlock Ponds, and the south end of Long Pond are closed to swimming by local ordinances because they are public water supplies. Swimming is allowed at Sand Beach and Echo Lake Beach. Glass containers, flotation devices, kites, pets, and athletic sports and games that interfere with other users are prohibited on Sand Beach and Echo Lake Beach.

PLANNING YOUR GROUP'S VISIT

Knowing your group and the purpose of your visit to Acadia National Park will help to plan a trip that meets the needs of the participants and protects Acadia. Please familiarize yourself with the Acadia National Park – A Place Like No Other section and important park information. Contact park headquarters at (207)288-3338 to check on any current closures or new policies.

The Commercial Use Authorizations which are available on our website (www.nps.gov/acad, under park management/Doing business with the park), outlines many other objectives and requirements for commercial users.

Accessibility Checklist

If needed, arrangements can be made to provide a sign language interpreter on park programs. Reservations for an interpreter must be made well in advance for scheduling purposes. Call (207 288-3338, voice; or (207)288-8800, TTY for more information.

- Familiarize yourself with the Welcome to Acadia section and appropriate sections of the guide.
- Check the park website for further information
- After reading this guide and checking the park website, **www.nps.gov/acad**, contact the park via email at or (207)288-3338 if you have further questions.
- More detailed hiking maps, guides, and other books are available through mail-order at Eastern National or purchase at park visitor centers. See the Eastern National book list on our website for further information.
- Take time to thoroughly plan your visit, taking into consideration the group's interests, abilities and time constraints.
- Consider your group size. Larger groups should go to areas that can handle them rather than areas that can only handle smaller groups. Consider dividing your group if it is large.
- Make arrangements at specific locations for your group, i.e. Jordan Pond House, Wildwood Stables, and the Abbe Museum.
- Know where the restrooms are.
- Be prepared for the weather.
- Good appropriate shoes are especially important. Sneakers are adequate for most easy trails. Hiking boots are recommended for moderate and strenuous hikes. Shoes with non-slippery soles are a must for shoreline exploration.

Basic Information to Share and Remember Throughout the Trip

- Remain on paved walkways and established hiking trails.
- Refrain from stepping on soil and fragile plants.
- Take your trash with you or properly dispose of it in a trash receptacle. Even if it is biodegradable, peanut shells, orange peels, egg shells, etc. are unsightly and not good for wildlife.

- Avoid disturbing wildlife by refraining from chasing, stalking, and especially feeding animals.
- Take only pictures. Do not remove rocks, inhabited shells, plants, flowers, cultural artifacts, etc. from the park. Those who choose to do so affect the landscape of the park. For the enjoyment of all, please leave things where you find them.
- Keep it quiet. Please limit the use of modern conveniences. If using cell phones or GPS devices use them discreetly.

Helpful Resources

Resources can be purchased at park visitor centers and some local bookstores or can be ordered in advance from Eastern National.

General Information

- Acadia's Park Loop Road, by Robert Thayer, 48 pages
- Acadia: The Story Behind the Scenery, by Bill Clark, 48 pages
- Acadia National Park Motorist Guide to the Park Loop Road, Eastern National, 32 pages
- AMC Discover Acadia: Guide to Hiking, Biking, Paddling, by J&M Monkman, 279 pages
- Complete Guide to America's National Parks, Fodors and National Park Foundation, 448 pgs
- Discovering Acadia, by Laurie Hobbs-Olson, 64 pages
- Geology of Mount Desert Island: A Visitor's Guide, A State of Maine booklet, 50 pages
- One Man's Museum—A History of the Islesford Historical Museum, by Meg Fernald, 17 pgs
- The Story of Acadia National Park, Memoirs of George B. Dorr, 127 pages

Trail Guides – Maps

- A Walk in the Park, by T.A. St. Germain, Jr., text and maps, 144 pages
- Acadia National Park Hiking and Biking Map, Map Adventures LLC -2nd Edition
- AMC Acadia National Park Hiking and Biking Map
- Great Walks Acadia National Park and Mount Desert Island, by Robert Gilmore, 174 pages
- Mount Desert Island and Acadia National Park Complete Hiking Trail and Carriage Road Map, Map Parkman, Friends of Acadia
- Pocket Guide to Biking Mount Desert Island, by A. Minutolo, 61 pages
- Pocket Guide to Hiking Mount Desert Island, by Earl Brechlin, 71 pages
- Pocket Guide to the Carriage Roads of Acadia National Park, by Diana F. Abrell, 40 pages
- Trails Illustrated Topo Map: Acadia National Park–Mount Desert Island–Isle au Haut
- U.S. Geological Survey Map: Acadia National Park and Vicinity, 1976
- Mac's Field Guide to Acadia National Park (laminated card illustrates plants and animals)

Providing an Introduction to Acadia for Your Group

Acadia's rounded-granite mountains, forested valleys, large lakes, small ponds, marshes, rocky headlands, and quiet coves await discovery in this small national park. These environments are home to over 1,100 plant species, 40 mammal species, over 300 birds and a multitude of smaller creatures.

Recreational opportunities abound within this inspirational setting. Strenuous mountain climbs and leisurely walks await those who venture from their vehicle. Carriage roads for use by walkers, bikers, or horses make Acadia accessible for all. Many lakes and ponds are popular for canoeing, kayaking, and fishing. Boat cruises take advantage of the ocean environment. Visitors today are a current page in the history of this land. Pre-historic people and the historic Wabanaki Indians inhabited this land long before Samuel Champlain named it the "Isles des Monts Deserts." After 150 years of quarreling between the French and English for claim of North America, European settlers came in earnest, joining the Wabanaki in taking advantage of the ocean's proximity and the island's generous resources. The mid-1800s brought visitors who saw those same resources as a spring of inspiration and respite. Some worked to create a sanctuary that became Acadia National Park.

More than two million people visit Acadia each year. Like those who came before us, we will leave with our own unforgettable impression of Acadia National Park.

After giving this park introduction, review your itinerary with your group. Explain time expectations, safety concerns, and any other information you feel is necessary for them to know.

SCHOOL GROUPS – EDUCATIONAL ACTIVITIES

"I hear and I forget. I see and I remember. I do and I understand."
This is the essence of a visit to Acadia National Park where education is active, experiential, and fun. Acadia helps textbooks and lesson plans come to life through a multitude of experiences, whether discovering a frog at the edge of a pond, exploring the past at the Islesford Historical Museum, or observing the diversity of life in a tidepool.

Please remember to always follow good stewardship practices during your visit to Acadia National Park. Bring only memories (and students!) home with you. We hope you and your students find Acadia a perfect extended classroom!

Programs for Educational Groups

The park offers ranger-led programs in natural and cultural history topics for third through eighth grade classes, primarily in the local school districts. School groups beyond the local area may request a special program by contacting Acadia's education coordinator at (207)288-8812.

Creating Your Own Program

Teacher guides to each of Acadia's curriculum-based programs are available free on the park web site to all teachers or other group leaders interested in planning their own educational trip to the park. Titles include: Junior Rangers, Animals of Acadia, Carroll Homestead, Shoreline Discovery, Island Life, Where in the World is Tuzigoot?, and Fire and Ice (geology). The background information and pre and post activities in the teacher guides can help to design your own program.

Also available for sale is The Activity Guide to Acadia National Park, which covers animals, shoreline, and geology in a more detailed format than the free teacher guides. The Teacher Resource Library at the park's education office offers over 500 book titles as well as videos for loan. Two traveling trunks with tactile components and designed for 5th- 8th grades can be borrowed for up to a month. Both kits have a social studies focus: "Passamaquoddy History and Culture" and "St. Croix 1604." Contact the education office to reserve these interactive resources.

The ranger-led programs during the summer can serve as excellent resources for teachers who are interested in learning more about the nature and history of this area to enrich their lessons. The activity schedules can be found at any ranger contact station in the park and also on the park web site. Acadia's interpretive guides are also excellent for group exploration. For the interpretive guides' text, see the Interpretive Guides section.

The Junior Ranger Program

Although designed for families visiting the park during the summer season, the junior ranger program can be adapted for use by organized groups. To become a junior ranger, the candidate must complete a certain number of the activities in the junior ranger book and attend ranger-led activities. Upon completion, the junior ranger earns a signed certificate and an official Junior

Ranger patch. Junior Ranger books are available free of charge at park visitor centers and campgrounds.

Teachers' Guides and Activity Books

- Activity Guide to Acadia National Park for Teachers, Youth Leaders, and Interested Parents, by Carol Peterson and Meg Scheid, 77 pages
- Acadia National Park Junior Ranger Booklet—Ages 7 and up
- Discovering Acadia National Park—A Young Naturalist's Guide, by Meg Scheid, 80 pages
- Shoreline Discovery: An Educator's Guide to Acadia's Coastline, National Parks as Classroom Series, by Wylie and Hobbs-Olson
- Where in the World is Tuzigoot: An Educators Guide to the National Park System, National Parks as Classrooms Series, by Wylie and Petrie

Activity Ideas for Children's Groups – Specific Park Areas

Sieur de Monts Area

For a pleasant walk in the area, the Jesup Trail boardwalk and the Hemlock Trail combine to make an easy one mile roundtrip. Through birch forest to meadow to towering hemlocks, three different Acadia habitats can be enjoyed. In the opposite direction, another short loop takes you through the woodlands and follows a stream to a pond called the Tarn.

Acadia National Park Nature Center

The Nature Center offers exhibits on the "science behind the scenery" of the park. Learn more about the important work and tools of park biologists and researchers as they protect park resources. In addition, the Nature Center offers an animal track matching game and taped frog calls (fun to listen to). The lawn outside the Nature Center is a good location to let children run and enjoy a picnic. A small bookstore is on-site. Free. Open from mid-May to mid-September.

Sand Beach Area

See how many different colors of "sand" particles can be found. Can they guess which ones come from shells? What animals might those shells belong to?

Bubble Rock

The hike up South Bubble to Bubble Rock is appropriate for children ages five and up. Some questions to ask along the route: Why is the forest almost all beech trees? How did Bubble Rock arrive at this particular resting place? Will it stay here forever? What could make it fall? Have students look for other evidence glaciers left behind. Please impress upon youngsters the importance of staying on the trail, for both safety and resource protection.

Cadillac Mountain Summit

Match the surrounding panorama with the landmark names by using the interpretive signs.

Ship Harbor Trail

Have children compare life on the mudflat with life in a tidepool. Have students spread out along the edge of the mudflat and use their senses to describe what life is like in the mud, on the mud, or under the water when the tide comes in. Who visits the mudflat for food? What

evidence of animals do they see? When visiting tidepools on the rocky point, have students sit at different levels of tidepools and imagine what life is like under the seaweeds, on the rocks, in the water. How are the different pools similar? How are they different? Where would they like to live?

Carroll Homestead Interpretive Guide

Ask children to imagine what the Carroll children did at the Mountain House. What would life have been like without TV, computers, cell phones, video games, and cars? Let them put together a "Little House on a Maine Island" TV show based on their insights. For the interpretive guide's text, see the Interpretive Guides section.

Hiking trails suitable for children ages 5 and up:

- Great Head
- Gorham Mountain
- Beech Mountain
- Wonderland

VISITOR SERVICES/ACCESSIBILITY

Accessible Options

Acadia National Park is constantly striving to improve its accessible facilities and services so that all visitors have access to park resources. Accessible interpretive programs are listed in the monthly program schedule. Assistive Listening Devices (ALDs) are available to use on the programs. There are also accessible campsites, trails, restrooms, carriage roads and carriage rides within the park. At the Hulls Cove Visitor Center, there are audio description and captioning for the introductory video. Further information is found in each section or consult the park's Access Guide found on the park web-site or at park information centers.

If you have any comments or suggestions concerning access during your visit, please email **acadia_information@nps.gov** or write to Acadia National Park, P.O. Box 177, Bar Harbor, Maine 04609.

Access Pass

Free to US citizens with permanent disabilities. This pass provides entrance and half-price camping at most national parks, monuments, and federal recreation areas. You must have the pass in hand when making camping reservations or entering the park in order to receive the discount. Passes are available at Park Headquarters, Hulls Cove Visitor Center, the Village Green, Entrance Station, and Blackwoods and Seawall campgrounds.

Public Transportation on Mount Desert Island

The Island Explorer free shuttle bus links Acadia National Park and neighboring village centers. There are two wheelchair spaces on each bus. Schedules are available at information centers or on the Island Explorer web site: **www.exploreacadia.com**

Camping

There are two park campgrounds, Blackwoods, off of Route 3, and Seawall, off of Route 102A. See the Park Activities In-Depth/Camping section for more information about access in the campgrounds.

Restrooms

Route 3, Trenton Bridge

- Thompson Island Picnic Area (Accessible Seasonal)
- Thompson Island Information Center (Accessible Seasonal)

Park Loop Road

- Hulls Cove Visitor Center (flush, accessible, seasonal)
- Sieur de Monts area (flush, accessible, seasonal)
- Bear Brook Picnic Area (flush, accessible, seasonal)
- Sand Beach (flush, accessible, seasonal; vault, winter)
- Thunder Hole (vault, accessible, seasonal)
- Fabbri Picnic Area (flush, accessible, seasonal)
- Wildwood Stables (flush, accessible, seasonal)

- Jordan Pond House (flush, accessible, seasonal)
- Jordan Pond Boat Launch (vault, seasonal)
- Bubble Pond (vault, seasonal)
- Cadillac Mountain (flush, accessible, seasonal)

Route 233

- Eagle Lake boat launch (vault, year-round)
- Eagle Lake (vault, seasonal)
- Park Headquarters (flush, year-round, accessible)

Route 198

- Brown Mountain Parking Area (vault, year-round)
- Parkman Mountain Parking Area (vault, year-round)

Westside

- Acadia Mountain Parking Area (vault, seasonal)
- Echo Lake Beach (flush, accessible, seasonal)
- Seawall Picnic Area (flush, accessible, seasonal)
- Ship Harbor (vault, seasonal)
- Bass Harbor (vault, season)
- Pretty Marsh Picnic Area (vault, accessible, seasonal)

Picnic Areas

Unless otherwise noted, all designated picnic areas have restrooms, water fountains, fire grills, and picnic tables. Sites are OK to good for accessibility but do not necessarily meet all ADA standards.

On the Park Loop Road

Bear Brook - Located on the Park Loop Road .5 miles beyond the Route 3 Sieur de Monts Entrance and across from Beaver Dam Pond. Note: Forest area, no ocean view.

Fabbri - Located on the Park Loop Road just before Otter Cliff. Note: Forest area, no ocean view. Paved walkway leads to accessible site.

On the Westside of the Island

Pretty Marsh - Located off Route 102. Note: Rough terrain, forested area. Not all sites have ocean views.

Seawall - Located on the southwest side of the island off Route 102A, across from the Seawall Campground, by the ocean. Note: Has no water fountain. One designated accessible site, others on uneven terrain.

Other Park Areas

Thompson Island - Located just over the bridge from the mainland on Route 3, across from the Thompson Island Information Center, by the ocean. Notes: Views of Thomas Bay.

Frazer Point – Located on the Schoodic Peninsula, by the ocean. Note: Several level grassy sites

Information Centers

Unless otherwise noted, all park information centers have restrooms, water fountains, and pay phones. Facilities are OK to good for accessibility but do not necessarily meet all ADA standards.

Hulls Cove Visitor Center & Eastern National Bookstore

Located off of Route 3 in Hulls Cove, it is open from April 15 to October 31. Accessibility notes: For the accessible parking lot and entrance follow signs. Accessible rest rooms are located on ground floor by accessible entrance. There is an elevator to second floor. Bus notes: Buses may use the accessible entrance for drop off and short stays. The area is small so the main parking lot must be used for waiting if congestion is an issue. See the In-Depth/Hulls Cove Visitor Center section for more information.

Park Headquarters

The park headquarters, on Route 233 three miles west of Bar Harbor, does not have facilities or services for groups but can be contacted for information or in emergencies. From April 15 through October it is open 8:00 a.m. – 4:30 p.m. Monday through Friday, except on federal holidays. From November to April 15 it is open 8:00 a.m.–4:30 p.m. daily, except for December 24 and federal holidays. It may be closed on the weekend due to budget constraints.

Thompson Island Information Center

Located just over the bridge from the mainland on Route 3. It is open from mid-May until mid-October. Chamber information is also available. Hours are 9 a.m.–5 p.m.

Sieur de Monts Nature Center

Located off the Park Loop Road and Route 3. May be open weekends in May. Open daily June 1 through Columbus Day. Hours are 9 a.m.–4 p.m.

Concessions and Partners

Acadia Corporation is a Maine-owned company operating with the National Park Service to provide food service and merchandising facilities in the park. The Acadia Corporation operates the historical Jordan Pond House Restaurant and Gift Shop as well as gift shops at Cadillac Mountain and Thunder Hole. Contact the Acadia Corporation at P.O. Box 24, Bar Harbor, Maine 04609 or call (207)288-1204.

Carriages of Acadia is a Maine-owned company operating with the National Park Service to provide horse-drawn carriage tours of the park's carriage roads. They are located in the park at Wildwood Stables just south of Jordan Pond. The stables can be accessed by either the one-way or two-way section of the Park Loop Road. Reservations are strongly advised. Call (877)276-3622 or visit**: www.carriagesofacadia.com**

Chambers of Commerce

- Bar Harbor, Maine 04609: (800)288-5103, **www.barharborinfo.com**
- Mount Desert-Northeast Harbor, Maine 04662: (207)276-5040, **www.mountdesertchamber.org**
- Southwest Harbor, Maine 04679: (800)423-9264, **www.acadiachamber.com**
- Deer Isle/Stonington, Maine: (207)348-6124 (Isle au Haut), **www.deerisle.com**

Eastern National is a nonprofit cooperating association offering book sales in the park. Mailing address: P.O. Box 177, Bar Harbor, ME 04609. Phone: (207)288-4988. Website: **www.easternnational.org**

Friends of Acadia is a private, nonprofit organization dedicated to ensuring the long-term protection of the natural and cultural resources of Acadia National Park and its region. To meet this mission, Friends of Acadia channels private donations to conservation and historic preservation projects in the park, monitors planning and legislative activities affecting Acadia, and sponsors volunteer groups in Acadia and surrounding communities. Contact information: P.O. Box 45, Bar Harbor, ME 04609, (800)625-0321. Website: **www.friendsofacadia.org**

Concession Restaurant and Shops

Unless otherwise noted, shops are OK to good for accessibility but do not necessarily meet all ADA standards. Open seasonally.

- Cadillac Mountain Gift Shop, no pay phones
- Jordan Pond Gift Shop
- Thunder Hole Gift Shop, not accessible, no pay phones
- Jordan Pond House Restaurant

PARK ACTIVITIES OVERVIEW

Bicycling

Carriage roads are suitable for mountain bikes or hybrids. The Park Loop Road and the primary state routes bear heavy traffic, particularly in July and August. They should be used with extreme caution. Bicyclists must obey all traffic regulations. Bike rentals are available in nearby towns. For further information and trip planning, see the Park Activities In-Depth/Bicycling/The Carriage Roads section.

Boating

A number of lakes and ponds on Mount Desert Island permit boating. There is a 10 horsepower limit on Jordan Pond, Eagle Lake, Upper and Lower Hadlock Ponds, and Echo Lake. There is no horsepower limit on Long Pond. All towns have launching areas for salt water near town docks and municipal piers. The law requires you to carry a coast guard approved life vest for each passenger. A better idea is to wear them. It could save your life! Canoes, kayaks, sailboats, and motorboats can be rented in surrounding communities.

Boat Cruises (Privately Operated)

Cruises focus on the natural and cultural history of Acadia National Park and the islands off the coast of Mount Desert Island. Trips vary in length from two to five hours. Most operate May through mid-October. Cruise prices vary. Boarding is easiest at high tide when ramp-way slopes are less steep. Contact the boat operators ahead of time to make arrangements for assistance. One can remain in wheelchair on the lower deck of boats. For further information, see the Park Activities In-Depth/Boat Excursions section.

Camping

There are two campgrounds in the park. All sites are wooded and within a 10 minute walk of the ocean. The majority of sites are for tents, small and large, but other sites accommodate pop-ups, vehicle campers, and RV's up to 35 feet. A maximum of one vehicle and six people is allowed at each site. There are no hook-ups. Campground facilities include comfort stations, cold running water, dump station, picnic tables, fire rings, and water faucets. Showers and camping supply stores are within 1/2 mile of both campgrounds. Private campgrounds are available on the island. Contact local chambers of commerce for listings. For further information, see Park Activities In-Depth/Camping section.

Carriage Rides

Wildwood Stables provides the tradition of horse-drawn carriage tours along the scenic carriage roads in Acadia daily from early June to early October. The roads were built between 1913 and 1940 by John D. Rockefeller Jr., and are the best example of broken stone roads in the United States. Wildwood Stables also offers a horse camp for visitors wishing to bring their horses with them. There are no horse rentals in the park. Wildwood Stables is located on the Park Loop Road, one-half mile south of the Jordan Pond House Restaurant. Reservations are strongly recommended. Contact the stable directly at 1-877-276-3622. Two wheelchair accessible carriages are available.

Fishing

Freshwater fishing requires a Maine state fishing license for residents 16 years or older and non-residents 12 years or older. Non-resident licenses can be purchased for the season or for shorter periods in town offices and some local businesses. Ocean fishing requires no license. Be cautious of surf conditions. Seaweed and algae covered rocks are extremely slippery. For further information, go to the Park Activities In-Depth/Fishing section.

Hiking

Over 120 miles of trails and 45 miles of carriage roads cover Acadia National Park on Mount Desert Island, as well as trails on Isle au Haut and Schoodic Peninsula. These range from easy lowland paths to rugged mountain routes. Check the hiking descriptions in the recreation section of this guide for more general information. For detailed descriptions of trails and carriage roads, commercial guides and hiking maps are for sale at park visitor centers. For a list of trails see the Park Activities In-Depth/Hiking section.

Interpretive Guides

Interpretive guides are available for two park sites, Carroll Homestead and Sieur de Monts. For more information, go the Interpretive Guides section.

Museums/Nature Centers

The Islesford Historical Museum on Little Cranberry Island is open daily from late June through September. Admission is free. The museum commemorates those who lived on the Cranberry Islands and also preserves a part of the history of maritime New England. The island is only accessed by boat. The museum does not have an accessible entrance. See the Driving Through the Park/Park Sites Off Island/Islesford Museum section for more information.

The Abbe Museum at Sieur de Monts contains one of the finest collections of Indian artifacts in the state. It is open daily from mid-May to mid-October. Although the museum is located in the park, it is an independent and self-supporting nonprofit institution. A minimal admission fee is charged. Special presentations will be made to groups with particular interests, but advance arrangements are necessary. A special program is available for students. Call (207)288-3519. Site does not necessarily meet ADA standards. Assistance may be needed for ascending steep paved trail to museum and to enter the museum.

The Nature Center at Sieur de Monts includes exhibits about Acadia's protective efforts toward wildlife and plant species and offers some interactive exhibits for children. A book sales area and information services are available. It is open weekends in May and daily June–September; Hours from 9 a.m. to 4 p.m.

The Wild Gardens of Acadia, adjacent to the Nature Center, is a living field guide to Acadia's plants and associated habitats. Several habitats are represented with labeled plants to help visitors familiarize themselves with Acadia's vegetation. The Gardens are operated by Friends of Acadia and are open dawn to dusk.

Swimming

Lifeguards are on duty Memorial Day through Labor Day at Echo Lake (fresh water) and Sand Beach (salt water). All sites have restrooms, changing rooms, water fountains and pay phones.

Sand Beach, located off Park Loop Road, offers ocean swimming. The water temperature rarely exceeds 55 degrees. Thirty one steps lead to the beach. Access does not meet ADA standards.

Echo Lake Beach, located on the west side of the island, offers a somewhat warmer swimming experience. Other freshwater lakes located in the park serve as drinking water reservoirs and are closed to swimming and wading. OK to good for accessibility but does not necessarily all meet ADA standards. There is a gradual downhill paved path that goes to the beach. A boardwalk goes over the beach to the water.

Tidepooling

Always consult a tide chart before planning your trip! Also take into consideration that on the day of your trip, if seas are rough, tidepools may not be as exposed and extra caution for safety is advised.

No tidepools meet ADA standards. The most easily accessed intertidal zone is on the gravel bar between Bar Island and Bar Harbor at low tide. Automobiles may be driven onto the gravel bar. Access is via a rocky and uneven ramp on Bridge Street in Bar Harbor. For further information on tides, intertidal zones and intertidal life see Acadia's Intertidal Zone.

Winter Activities

Cross-country skiing

Forty-five miles of carriage roads and forty-one miles of unplowed park roads are available for cross-country skiing and snowshoeing. Skiing on hiking trails is not recommended because of the uneven and steep nature of trails, ice falls blocking the path, and trail routes obscured by snow. Ski equipment and rentals are available in some of the local communities. Ski tracks are sometimes laid down by volunteers on sections of the carriage roads when snowfall exceeds four inches. To learn more about carriage road routes see the Park Activities In-Depth/ Bicycling/The Carriage Roads section.

Snowmobiling

The Hulls Cove Visitor Center parking lot is a good beginning spot for visitors with snowmobiles on trailers to unload and access the Park Loop Road.

- Snowmobile travel is allowed on the 27-mile Park Loop Road (except a one mile section at Jordan Pond House), and most fire roads.
- Only two miles of carriage roads are open to snowmobilers as connector trails. The remaining 43 miles are closed to snowmobilers. Stay to the right; all park routes are two-way travel. Snowmobiles must display a valid state registration.
- Maximum speed limit is 35 m.p.h.
- Snowmobilers must use caution and yield the right of way to anyone not on a snowmobile.

- Towing people on skis or sleds is prohibited. It is illegal to operate a snowmobile while under the influence of alcohol or drugs.
- Turn on your white headlight and red tail light half an hour after sunset to half an hour before sunrise, and whenever visibility is less than 500 ft.
- Drivers under age 10 must be accompanied by a person 18 years or older on their snowmobiles. Drivers 10 to 14 years old must be accompanied by a person 18 years or older. Drivers under the age of 14 are prohibited from operating a snowmobile on any public road. An adult may supervise only one minor.
- Call the park at (207)288-3338 for updates on snow conditions.

DRIVING THROUGH THE PARK

General Information

Driving Regulations

- Maine State Law requires seatbelts to be worn at all times.
- Park Loop Road speed limit is a maximum of 35 mph; some areas 25 mph.
- State route speed limits vary. Be aware and obey the limits.

Mileages

- Ellsworth to Mount Desert Island (Trenton Bridge) 8 miles
- Trenton Bridge to Hulls Cove Visitor Center 8 miles
- Trenton Bridge to Bar Harbor 10.2 miles
- Trenton Bridge to Somesville 4.5 miles
- Trenton Bridge to Northeast Harbor 8.9 miles
- Trenton Bridge to Southwest Harbor 11 miles
- Trenton Bridge to Seawall Campground 14 miles
- Trenton Bridge to Bass Harbor 15 miles
- Bar Harbor to Blackwoods Campground 5 miles
- Hulls Cove Visitor Center to Sieur de Monts 5.6 miles
- Hulls Cove Visitor Center to Sand Beach 8.7 miles
- Hulls Cove Visitor Center to Cadillac Mountain Road (direct) 3.5 miles
- Hulls Cove Visitor Center to Jordan Pond (direct) 7.5 miles

Parking

Parking is difficult in the peak season. Buses and large vehicles are even more limited in their options. General parking is limited to:

- Parking lots and paved and gravel pull-outs. Do not park on vegetation.
- The right lane of the one-way section of Park Loop Road from Bear Brook Picnic Area to the Stanley Brook Road junction, unless otherwise posted
- Parallel parking along the south shoulder of the road to the Jordan Pond Boat Ramp

Overviews of the Scenic Drives

The Park Loop Road

A 27-mile paved road carries visitors through some of the most beautiful features of the park. The road affords views of the Gulf of Maine and Acadia's rocky coastline, winds through quiet woods and around mountains, past large glacial lakes, and ascends Cadillac Mountain. The road includes a 2.8 mile road from the visitor center to the loop section, a 13.5-mile one-way section, and a 4-mile two-way stretch between Jordan Pond and Cadillac Mountain. The Cadillac Mountain Road is 3.5 miles. Stay alert! In July and August, the road is crowded between the hours of 10 a.m. and 3 p.m. See the Driving Through the Park/The Park Loop Road Overview and the Driving Through the Park/Park Loop Road in Detail sections for more information.

Westside of Mount Desert

Just south of Southwest Harbor, Route 102A provides access to another coastal section of Acadia National Park. Sites of interest include a natural seawall, Seawall Picnic area, Seawall Campground, Wonderland and Ship Harbor Trails, and the Bass Harbor Head Lighthouse. See the Driving Through the Park/Westside of Acadia section for more information.

Schoodic Peninsula

1.5 hours "downeast" of Bar Harbor, it is the only part of the park located on the mainland. The 7 mile one-way loop road offers views of the rugged coast. See the Driving Through the Park/Park Sites Off Island/Schoodic Peninsula section for more information.

Sargeant Drive

In addition to the Park Loop Road, state and county roads offer scenic views. Sargeant Drive skirts along the edge of Somes Sound. Access is from Northeast Harbor or off State Route 198. Watch for small signs. See the Driving Through the Park/Other Park Areas on the East Side section for more information.

The Park Loop Road Overview

Hulls Cove Visitor Center to Sieur de Monts

This 5 mile section includes Frenchman Bay views and quiet deciduous forests and meadows. There are 4 overlooks: Frenchman Bay, Bar Harbor, 1947 Fire Overlook (views to Cadillac and Champlain Mountains), and a view of the Porcupine Islands. Please turn off buses when parking at overlooks or in parking lots. The noise and smell detracts from the experience of park visitors. Plan 25 minutes with two overlook stops (15 minutes just driving time)

Sieur de Monts to Otter Point

This first section of the 14 mile one-way drive encompasses the exceptional scenery of Acadia's coastline before winding toward the island interior through towering spruce and pine spires. The popular sites include the Precipice, Sand Beach, Thunder Hole, Otter Cliff, and Otter Point.

Otter Point to Jordan Pond

The second section of the 14 mile one-way drive winds inland in the subdued quiet of a beautiful spruce forest typical of the eastern side of Acadia before the fire of 1947. Plan a minimum of 1 ½ hours with overlooks and one or two site specific stops. (25 minutes driving time.) Highlighted sites include Fabbri Memorial, Otter Cove & causeway, Baker and Little Cranberry Islands view, and Wildwood Stables.

Jordan Pond to the Cadillac Mountain Road

This 4 mile two-way section known as the Lower Mountain Road, allows for many more people to experience some of Acadia's most spectacular mountain and lake scenery. The popular sites of the Jordan Pond area and Bubble Rock are located along this portion of the Park Loop Road.

Cadillac Mountain Road to Cadillac Mountain Summit

The Cadillac Mountain Road is 3.5 miles and offers outstanding views all the way to the summit. Plan 10 minutes, with two brief stops, to reach the summit.

The Park Loop Road Sections In Detail

Hulls Cove Visitor Center to Sieur de Monts

Hulls Cove Visitor Center

The visitor center is located off Route 3 in Hulls Cove, approximately eight miles from the Trenton Bridge (leading onto Mount Desert Island) and 2.5 miles northwest of Bar Harbor. The entrance to the visitor center parking lot, the accessible entrance parking lot, and start of the Park Loop Road are clearly marked by a large Acadia National Park sign. The visitor center is open from April 15 through October. Hours are 8 a.m. to 6 p.m. during July and August; 8 a.m. to 4:30 p.m. or 8 a.m. to 5 p.m. other months. See the In-Depth/Hulls Cove Visitor Center In-Depth section for more site information.

Distances are measured from the visitor center.

MILE .4

Frenchman Bay Overlook (Appropriate for tour bus groups to get off the bus.)

Description: The bay stretches seven miles north from its Gulf of Maine headlands, bordered to the west by Mount Desert Island and to the east by Schoodic Peninsula. One of the interpretive signs at the overlook labels the view of islands and mountains.

Parking: The overlook provides 15 diagonal parking spaces. There is no parking for buses.

General site information: Frenchman Bay's name reflects the area's historic French influence. L'Acadie, the French title for this region, most likely originated from the name Arcadia. That title was bestowed in 1524 by Giovanni de Verrazano, the Italian navigator sailing for France, to describe present-day Chesapeake Bay and the Outer Banks of North Carolina shore scenery. It was a cartographer's mistake that placed Arcadia well north of the coastline that had reminded Verrazano of ancient Greek landscapes with beautiful green forests. For more information about the French history see the history section.

At mile 1.7 is a turn-off to the left that leads to Bar Harbor.

MILE 2.2

1947 Fire Overlook (Passengers can remain on bus.)

Description: To the far left is Frenchman Bay and to the far right is Sargent Mountain. The view straight ahead includes: in the foreground, the summits of Cadillac and Dorr Mountains, and in the background, Champlain Mountain. This area is mostly deciduous as a result of the 1947fire that burned 17,000 acres on the eastern side of Mount Desert Island. 10,000 acres were park land. As you gaze toward the mountains, look closely at the variation in the vegetation on the hillsides. The conifers' dark green hue contrasts against the hardwoods' bright green leaves, autumn colors, or bare branches. Can you detect what portion burned in 1947? As you travel the Park Loop Road, watch for changes in forest cover from deciduous woods to red spruce. See the fire of 1947 section for further information.

Parking: Small pull-off without true parking spaces; parallel parking. Note: interpretive sign.

MILE 2.4
Turn-off to the left for Route 233. To leave the Park Loop Road and access Northeast Harbor or the west side of the island, take a right on Route 233; a left turn leads to Bar Harbor.

MILE 2.8
Junction with the loop section. To the left is the one-way section of the loop heading toward Sieur de Monts and Sand Beach; straight ahead is access to Cadillac Mountain Road and Jordan Pond.

After turning onto the one-way section of the Park Loop Road, there is no parking in the right hand lane until Beaver Dam Pond. Be alert to cars and cyclists. This area is extremely congested in July and August.

MILE 3.2
Porcupine Islands Overlook: During the busy summer months, this overlook is used for parking to hike the North Ridge of Cadillac Mountain. Expect only to slow down and point out the islands. The islands are visible from various locations along the Park Loop Road.
Description: This overlook of Bar Harbor and Frenchman Bay provides a good view of Bar Island and the Porcupine Islands. From left to right (west to east): Bar Island, Sheep Porcupine, Burnt Porcupine, Long Porcupine, and Bald Porcupine. A good way to remember the Porcupine Island names is the phrase: Sheep Burnt Long go Bald. At low tide a sand bar is exposed allowing access to Bar Island. Bar Island, as well as Sheep, Long, and Bald Porcupine Islands are part of Acadia National Park.

Porcupine Islands Overlook to Great Meadow
Traveling from this overlook to Sieur de Monts you pass through an area that burned in 1947. The forest today is primarily a birch and aspen forest. At mile 4.7 and mile 5.0 are turn-offs to the left which lead to Bar Harbor. At mile 5, on the right is the exceptionally scenic view of Great Meadow which is flanked by two sets of mountains. Dorr and Cadillac Mountains rise to the right of the meadow. Huguenot Head and Champlain Mountain are to the left. Each of these mountain pairs are connected by a notch formed during the last glacial retreat. As the ice sheet receded, a meltwater channel of raging water formed inside the ice, etching a deep notch in the granite ridges defining two individual mountain summits.

MILE 5.3
Sieur de Monts: Considered "The Heart of Acadia" by the park's founding father, George B. Dorr, this area is home to the Sieur de Monts Nature Center, The Acadia Wild Gardens and the Abbe Museum. There are also numerous walks and hiking trails. Parking can be difficult to find in the summer months. To avoid the crowds, consider visiting the site early in the morning of last in the day. See the In-Depth/Sieur de Monts Area section for more information.

Sieur de Monts to Otter Point
The following are suggested minimum times to get off the bus, enjoy the site, use restrooms if necessary, and re-board the bus. Considerably more time can be spent at these locations if desired.

- Precipice: 10 minutes, if interested in learning about or watching peregrines
- Sand Beach: 45 minutes, depending on your group
- Thunder Hole: 20 minutes, depending on your group
- Otter Point: 30 minutes, if walking a portion of the Ocean Path

MILE 5.8
Bear Brook Picnic Area originally served as the park's first campground.

MILE 5.9
Beaver Dam Pond, across from the picnic area. Three beaver lodges and a dam can be seen. Champlain Mountain is to the left behind the pond; Huguenot Head is to the right. Jackson Laboratory, the world-renowned research facility in genetics and mice breeding for research is on the opposite side the road.

MILE 6
Ocean views begin just up the hill, after the pond. Frenchman Bay, Egg Rock Lighthouse, Schoodic Peninsula, and the Acadia coast can be seen. Schoodic Peninsula is part of Acadia National Park. The 2,266 acre parcel is a one-hour drive from Mount Desert Island to the northeast. It is next to the town of Winter Harbor. Egg Rock, the island with a small lighthouse, is visible between Schoodic Peninsula and Mount Desert Island. The lighthouse was built in 1875, but now is completely automated like all Maine lighthouses.

Highseas Estate, the large "cottage" along the shore, was built in1912. It stands as a symbolic remnant having survived the fire of 1947 which raged around it. Protective efforts saved it from the flames. Today, it serves as summer housing for Jackson Lab employees. Despite stories, there is no documentation that connects the estate with a passenger on the ill-fated Titanic.

MILE 7.5
The Precipice parking lot is on the right. The Precipice Trail, with its narrow ledges and iron rung climbs, is one of Acadia's most exciting and difficult trails. During the late spring and early summer, if peregrines are nesting, the trail is closed to protect both visitors and the falcons. Visitors may have a chance to spy the peregrines with the help of a park ranger. When the trail is closed, spotting scopes and informal interpretation are available in the parking lot during the morning hours to help visitors learn more about these incredible birds.

MILE 8.1
Sand Beach Entrance Station: Entrance fees paid at the entrance station return to the National Park Service for specific projects.

MILE 8.7 – 10.5
Ocean Drive: Views along the Park Loop Road open to the breathtaking interface between land and sea that defines Acadia for many visitors. There are numerous parking lots along this drive. Parking in the right lane is permitted unless otherwise signed.

While along the Ocean, protect yourself and your park

- Stay back from the water's edge. Never turn your back to the ocean. Waves are unpredictable and can knock you down.
- Do not feed wildlife. This includes gulls. Feeding only exacerbates the problem of wildlife depending on humans to feed them.
- Picnics are popular all along the shoreline. Please remember to take all trash out with you, even orange peels, apple cores, peanut shells, etc. They are inappropriate for wildlife to eat and look unsightly.

MILE 8.7
Sand Beach: Wide expanse of broken shell and sand beach in Newport Cove. See the In-Depth/Sand Beach section for more information.

MILE 8.7-10.7
Ocean Path: Level pathway paralleling the Park Loop Road for those preferring to walk. The path is 2.2 miles from the Sand Beach parking lot to Otter Point. The path begins from the upper lot of Sand Beach. As an example, those wishing to walk could meet the rest of their party at Thunder Hole. Walking along the Ocean Path follows a favorite walking route of rusticators and cottagers who reveled in the shoreline sites. A popular excursion in the mid-to late 1800s was to Thunder Hole. Poison ivy grows along the Ocean Path in some sections.

MILE 9.4
Thunder Hole: Rocky chasm that thunders when surf is heavy. There is a small parking lot at the gift shop. Many people choose to park in the right hand lane of the Park Loop Road. Bus parking is designated in the right hand lane.

Accessibility: Thunder Hole has an accessible viewing platform. Thunder Hole gift shop is not accessible.

Description: Thunder Hole often elicits only a sloshing gurgle, but under appropriate conditions, it does indeed bellow. The best time to try to experience Thunder Hole's boom is two hours before high tide or during storms. What makes Thunder Hole thunder? When ocean waves slap against this narrow chasm, air becomes trapped deep in its chamber. When released, a booming sound results from the once-trapped air. Its thunderous rumble is accompanied by plumes of ocean spray. During strong storms, the steps to Thunder Hole are closed. But its booming and resulting spray can be seen and heard from a distance. Waves can be unpredictable and visitors should take appropriate precautions.

MILE 9.7
Gorham Mountain Parking Area (1.8 mile, moderate trail)

MILE 9.9
Otter Cliff Road and access to the Fabbri Picnic Area: Otter Cliff Road leads to Route 3. A left turn on Route 3 leads to the town of Otter Creek and Blackwoods Campground; a right turn leads back to Bar Harbor.

Description: As you approach Otter Cliff, the character of the forest changes from the deciduous woods of the first half of the Park Loop Road to a mostly red spruce-balsam fir forest typical of Mount Desert Island forests before the 1947 fire. The fire of 1947 burned over Great Head, but blew out to sea before engulfing this area. The forest area to the south of Gorham Mountain did not burn, and remains primarily spruce. See the fire section for more information. Many sites along this section of shore are named for otters—Otter Cliff, Otter Point, Otter Cove, and Otter Creek. Such names associated with coastline landmarks give the impression that sea otters are here. They are not! River otters, however, are native and are occasionally seen in streams and ponds.

MILE 10.1

Otter Cliff : Here the Park Loop Road splits into two tiers and offers panoramic ocean views from 90 foot cliffs along the ocean front. This is a popular location for rock-climbing.

MILE 10.5

Otter Point: It is not one specific place but an area along the rocky coastline good for exploring. The Ocean Path ends (or begins, depending on your perspective) here. It provides good access to the shore for tide pooling. See tidepooling for more in-depth information. Remember tidepool safety:

- If visiting tide pools, use extreme caution with the plants and animals. Please respect their fragile nature by choosing to observe their mysterious world, and not removing them from their homes.
- Rocks around the intertidal zone are slippery. If exploring in these areas, wear shoes with good tread and watch your footing.

Otter Point to Jordan Pond

MILE 11

To the left is the Fabbri Memorial, named for Lieutenant Allesandro Fabbri, who was awarded the Navy Cross by President Woodrow Wilson at the end of World War I. Fabbri created what was considered to be the most important and the most efficient radio station in the world. It was called the Otter Cliffs Naval Radio Station NBD and was located across the road from this memorial. The station was moved to Moose Island off Schoodic Peninsula in 1935, to allow for the continuation of the Park Loop Road around Otter Point.

To the right is another entrance to Fabbri Picnic Area. From the picnic area you can take Otter Cliffs Road to Route 3.

MILE 11.3

Otter Cove and Causeway: To the right, Cadillac and Dorr Mountains rise in the background. From this viewpoint, they appear as one mountain with a notch cut out of the ridge. This is a meltwater channel, a glacial feature where a raging river ran beneath the retreating ice, gouging the rock to form two separate mountains.

During the 1800s artists, such as Frederick Church and Thomas Cole of the Hudson River School, painted mountain scenery and crashing surf. Writers poetically expressed the island's charms. These expressions of the island's beauty lured more people to its shores.

MILE 12.4
Baker Island and the Cranberry Islands view: Three pull-offs with views out to sea and back toward the coast around Otter Point. Of the three pull-offs, the best outer island view is from the third one. The outer islands viewed from here include Baker Island, furthest to the left, and Little Cranberry Island, lying just to the right. In the far distance is Great Cranberry. Bunker's Ledge, indicated by a small white pyramidal monument, lies in the front.

Today we consider these islands "remote". But when Europeans first settled they were on the transportation "highway". The park's Islesford Historical Museum on Little Cranberry Island tells of island life. For further information on these islands, see the Acadia's People/ Island Life in the 1800s and the Islesford Historical Museum section.

MILE 13.2
A pull-off here affords a final glimpse of Little Cranberry Island, Sutton Island, and Great Cranberry Island before dropping into the spruce woods. The homes jutting out along Mount Desert Island's rocky coast are in the town of Seal Harbor. The road now leaves ocean views behind and winds through inland forests of red spruce and balsam fir.

MILE 15.3
Wildwood Stables provides historic horse-drawn carriage tours along Acadia's scenic carriage roads daily, late May to mid- October. Reservations are strongly advised 1-877-276-3622. **www.carriagesofacadia.com**. Accessible carriage rides can be arranged. Restrooms are accessible.

Visitors can experience a page of history riding buckboard carriages along the carriage roads. In the 1800s, buckboards similar to those used by Wildwood Stables transported rusticators from one scenic spot to another. The tradition continues today, as trips take visitors to the top of Day Mountain, to the Cobblestone Bridge, or for tea and popovers at Jordan Pond.

MILE 15.9
The Park Loop Road becomes two-way at the junction with the Stanley Brook Road. Stanley Brook Road is 1.2 miles long and leads to Route 3 in Seal Harbor at the Seal Harbor beach. There is a three-arch carriage road bridge spanning the Stanley Brook Road that has a low clearance of 10 feet, 9 inches. Buses are not permitted on this road. There is one more opportunity to access Wildwood Stables here as well. A dirt road on the right hand side of the road leads back to the stables. At mile 16.3 is the Jordan Pond Gate Lodge, a private residence.

MILE 16.4
Jordan Pond Area: At a minimum, expect to spend one hour at Jordan Pond. See the In-Depth/Jordan Pond Area section for more information.

Jordan Pond to the Cadillac Mountain Road

This four mile road section runs through Acadia's eastern interior from Jordan Pond to the start of the Cadillac Mountain Road. The two-way traffic on this narrow road requires drivers to use extra caution, especially around cyclists. There is no shoulder. The road's speed limit is 35 mph

with a reduced speed of 25 mph in the Bubble Pond area. Approximate driving time with brief stops at Bubble Rock overlook and Eagle Lake overlook is 15 minutes.

MILE 17
Jordan Pond and Bubble Rock View: As the Park Loop Road ascends from Jordan Pond and hugs the base of Pemetic Mountain, the pond lies below. A carriage road above the pond's western shore stretches through a large jumble of talus and boulders at the base of Penobscot Mountain, demonstrating the design and construction skills of the carriage road engineers.

A large glacial boulder, known as Bubble Rock, perches above the Park Loop Road on South Bubble Mountain. This over 100-ton glacial erratic was transported by ice from at least 40 miles to the northwest of its current location. Hiking is the only way to see Bubble Rock up close.

MILE 18
The Bubble Divide parking lot provides trail access to Pemetic and Bubble Mountains. It is often full by mid-morning in the summer. No bus access.

MILE 19
Bubble Pond is a scenic pond nestled between Cadillac and Pemetic Mountains. The parking lot is often full by mid-morning in the summer. No bus access. No parking allowed on road.

MILE 20.1
Eagle Lake Overlook has a parallel parking pull-off space for six vehicles, no buses. Visiting artists named Eagle Lake in the mid-1800s for eagles flying overhead. The overlook provides expansive view of Eagle Lake and the western horizon. The predominant bump is Blue Hill. Rising from Eagle Lake's western shore is Sargent Mountain. The Bubbles frame the lake's southern end. A six mile carriage road loop offers outstanding views of Eagle Lake and the surrounding mountains. The carriage road's western side climbs along the base of Sargent Mountain, while the eastern and northern sections are more level. A hiking trail follows along the lake's southern and southwestern shores. See the Acadia's Landscape/Lakes and Ponds section for more information.

MILE 20.4
The Cadillac Mountain Road turn off is to the right. If not going to Cadillac, continue straight until you come to the junction. Bearing left leads back to Route 233, the visitor center, and Route 3. Continuing straight at the junction begins the one-way section of the Park Loop Road.

Cadillac Mountain Road to the Summit

The 3.5 mile summit road offers many opportunities for breathtaking views and a better understanding of the natural history of Acadia. The road begins in a mixed forest composed of hardwoods and conifers. The forest soon gives way to exposed rock ledges scattered with lowbush blueberry and sheep laurel. Some species of trees, like the oaks and maples, disappear almost entirely while red spruce, balsam fir, white birch, black cherry, and shadbush are found in increasingly smaller numbers. Their growth also becomes stunted at higher elevations. This

change results from harsh exposure to winds, winter snow and ice, and an obvious lack of soil. Approximate driving time with two stops is 10 minutes.

SAFETY: The summit road is narrow and there is no shoulder! Please remain especially alert and cautious around cyclists.

MILE 21.7
The second pullout on the right side of the summit road (for cars only) overlooks Eagle Lake, Pemetic Mountain, the Bubbles, and Sargent Mountain. The U-shaped valleys and north-south trending rounded mountain ridges are evidence of Acadia's glacial legacy. One can visualize fingers of ice between the mountains receding northward after the granite ridges had been engulfed in ice. Another geologic feature, much older than those created by glacial ice, can be found a little farther up the road on the right. Exposed in a large road cut is a wide band of dark rock contrasting boldly with the coarse-grained pink granite. This is a diabase dike, formed beneath the earth's surface when magma oozed between already present fractures in the older rock and cooled quickly.

There are numerous views toward Bar Harbor, Frenchman Bay, the Porcupine Islands, and Schoodic Peninsula. (Pull-offs at mile 21, and between mile 22.1 to mile 22.4). Bar Harbor is named to reflect its connection to Bar Island via a gravel sand bar exposed at low tide. You might see someone driving across it! This is NOT advised. Vehicles have been flooded by the incoming tide! The Porcupine Islands, similar in appearance to their namesakes, were the hilltops of 6,000 years ago when Frenchman Bay was dry. Since that time, the land has slowly been sinking and the sea level rising.

MILE 23.3
Just before the summit, the southern horizon opens to display a spattering of islands along the coast. The mountainous island furthest in the distance is Isle au Haut. Half of this large island is populated by a small year-round community while the other half is part of Acadia National Park. This remote island is accessible by mailboat from Stonington.

MILE 23.4
The Blue Hill Overlook is to the left. Not accessible to buses.

MILE 23.6
Cadillac Summit parking lot.

Cadillac Mountain
Cadillac Mountain, at 1,530 feet, is not only Acadia's highest mountain, but the highest mountain along the eastern seaboard of the United States. The only mountain in the park with access to the summit via a road, it is a place where park managers try to balance the National Park Service mission of "protect and preserve" with "enjoyment for all." Plan to spend at least 35 minutes at the summit.

Parking
The lot on Cadillac Mountain provides parking for about 150 cars. Buses and RV parking spaces are parallel to the sidewalk after exiting the parking area, opposite the gift shop.

To avoid detracting from visitors' enjoyment of the mountain, buses are required to turn off engines once parked.

Safety

- All walking surfaces can be uneven.
- The summit trail slopes downward and has a short climb back to the summit. Groups with seniors or those with difficulty walking should be aware that although the path is not long, it does dip and rise.
- During rain and fog, rocks can be exceptionally slippery and visibility at zero.
- A light jacket is always a good idea to have on Cadillac no matter the weather, as cooler temperatures are common.

Protecting your Park – How you can help

Cadillac Mountain's summit landscape of subalpine plants and stunted trees comes not from being above tree line, but from harsh stresses of the climate and erosion. The summit's plants, although able to withstand harsh weather conditions can fall victim to constant trampling. Cadillac's large volumes of visitors leave their mark behind, no matter how careful they may be. You can help!

- Visitors should remain on the paved trail. If the need arises to go off, they should walk on exposed rock and not over plants or soil.
- Cigarette smokers seem to use Cadillac as an ashtray. Remind visitors to dispose of cigarette butts, and other garbage, properly. Pack it in, pack it out.
- Remember your fellow visitor; quiet voices help everyone to appreciate the inspiration of the mountain.

Facilities

There are flush toilets next to the Cadillac Mountain Gift Shop. The gift shop sells a small assortment of snacks, sunscreen and souvenirs.

Accessibility

There is an accessible paved walkway leading from the parking lot to one of the highest view points. The general Summit Trail is rated easy, but it should be noted that the trail slopes downward and has a steep incline back to the summit. The gift shop and restrooms are accessible, although the gift shop is small with little room to maneuver.

Activities

Summit Trail: A half-mile paved path circles the summit. Interpretive signs highlighting geology, history, and surrounding landmarks are along the trail.

Ranger-led Programs: During the summer and autumn, park rangers offer short walks and talks on the summit. In the autumn, hawk watches are also offered.

Highlights

View from the top of the summit, an Acadian panorama of mountains, islands, forests, lakes, shoreline, and ocean stretches to the horizon. To the north is the mainland. Bar Harbor and the Porcupine Islands lie to the east with Schoodic Peninsula in the distance across Frenchman Bay. To the east on Mount Desert Island are the mountains, from left to right: Dorr, Huguenot Head,

Champlain, the Beehive, Gorham, and the Bowl. To the south are Otter Cove and the town of Otter Creek, as well as outer islands, including the Cranberry Islands. The view to the west is best seen from the Blue Hill overlook, where Eagle Lake and the western mountains of Acadia lie in front of the predominant "bump" of Blue Hill Mt. across Blue Hill Bay.

Background
The mountain is named after Antoine Lamuet, a Frenchman who was granted land in the New World, including Mount Desert Island in 1688. Dubbing himself with a fake nobleman's title, the Sieur de la Mothe de Cadillac, he stayed in the area for only a short time. He went on to found Detroit.

Originally called Green Mountain, the name was changed in 1918 to Cadillac by George Dorr, the park's first superintendent, to reflect the history of the area. It is interesting to note that a cog railway up the mountain and a hotel on the summit were here in the late 1800s.

Cadillac Mountain is the first location in the country to see the sunrise from October 7 to March 7. Sunrise in the summer falls between 4:30 a.m. and 5:30 a.m.

Other Park Areas on the East Side

Route 233 to Route 198 and Sargeant Drive

Route 198 runs along the western side of the eastern half of Mount Desert Island and Route 233 crosses the middle of the island's eastern half. Sargeant Drive hugs the eastern shore of Somes Sound and is reached from Route 198. Numerous park trails, carriage roads, lakes, and ponds are reached from these routes. The Islesford Historical Museum is located on Little Cranberry Island in the village of Islesford and is accessed via boat from Northeast Harbor or Southwest Harbor.

Time Allotment

- Driving time from Bar Harbor to Northeast Harbor via Route 233/Route 198: 20 minutes
- Driving time—Sargeant Drive: 15 minutes
- Other sites: varies depending on interest and activities

Facilities

- Restrooms at Acadia National Park Headquarters
- Vault toilets at Eagle Lake Parking, Parkman Mountain Parking, and Brown Mountain Parking
- Gas stations, groceries, restaurants in Bar Harbor and Northeast Harbor

Safety
On most summer and busy autumn days the shoulders of Route 233 at Eagle Lake become crowded with parked cars. Please slow down and watch for pedestrians.

Highlights
This area of the park is not clearly defined with a specific entrance, illustrating the intertwining of park lands with private lands.

Carriage roads can be accessed to enjoy this part of Acadia. The roads can be accessed from Eagle Lake parking lot (Route 233), or Parkman Mountain and Brown Mountain parking lots (Route 198). For more information see the Carriage Roads of Acadia National Park.

Sargeant Drive gives visitors an exceptional view of Somes Sound, the only fjord along the east coast of the United States. It is called a fjord because it's a glacial valley drowned by the sea, has steep rocky sides that drop straight into the ocean, and has a greater depth at its end than at its mouth.

Brown Mountain Gate Lodge was built in 1932. Its purpose was the same as the gate lodge at Jordan Pond—to assure that cars would not drive on the carriage roads. It is a private residence today. Parkman Mountain and Brown Mountain parking lots provide hiking trail access. Trails lead to the summits of Sargent, Norumbega, and Parkman Mountains. For more trail information, see the Park Activities In-Depth/Hiking section.

Westside of Acadia
The park sites on the western side of the island are accessed by Route 102 and Route 102A. Unlike the Park Loop Road, the western side of Acadia does not include a specified scenic drive, although the surrounding area is picturesque. Although divided by local towns and highways, the west side is considered more quiet, and the inter-related quality of town and park offers visitors traditional Maine village flair with towns like Southwest Harbor and Bass Harbor.

Significance
Within these lands Acadia protects unusual plant associations of northern and southern plants, rare peat lands, old growth spruce forests and excellent habitat for more northerly bird species. The historic sites of the Carroll Homestead and Bass Harbor Head Light preserve a piece of coastal Maine history. In fact, the west side of the island harbors more early history than the east side.

Time Allotment
Estimated driving times are from Somesville where Route 198 and Route 102 intersect. Driving times vary depending on traffic, but in general:

- Echo Lake Beach: 10 minutes/visit from 20 minutes to all day
- The Carroll Homestead: 10 minutes/30 minute visit
- Seawall Picnic Area: 20 minutes/30 minute visit or longer
- Wonderland Trail: 25 minutes/30 minute visit or longer
- Ship Harbor Trail: 25 minutes/45 minute visit or longer
- Bass Harbor Head Lighthouse: 30 minutes/20 minute visit

Area Highlights
Mileage distances begin from the intersection of Route 198 and Route 102 junction in Somesville at the stop light.

Beech Mountain
Just south of Somesville, take a right at the blinking yellow light, just after the Somesville firehouse. Beech Hill Road is .2 miles on the left. At the end of Beech Hill Road is the parking area for Beech Mountain, Beech Cliffs, and the Valley Trail. For more trail information, see the Park Activities In-Depth/Hiking section.

Echo Lake
Echo Lake is seen from the highway. Across the lake at its southern end is Beech Mountain. The fire tower is visible on the summit.

Acadia and St. Sauveur Mountains
Acadia and St. Sauveur Mountains are accessed by hiking trails. Mile 3.3 on right: Acadia Mountain parking lot; Mile 3.9 on the left St. Sauveur Mountain parking lot. For more trail information, see the Park Activities In-Depth/Hiking section.

MILE 4.2
Echo Lake swimming beach. The parking lot is often filled to capacity in July and August. There is a paved, slightly inclining path to the beach.

Echo Lake is a popular swimming spot in the summer. The beach is perhaps a more restful spot other times of the year. A changing area and restrooms are available. Rising above the west side of the lake are the impressive Beech Cliffs, the southeastern face of Beech Mountain. This is another recent location of breeding peregrine falcons, but the Beech Cliff trail does not usually close if they are nesting there because the trail is a distance away from the nesting site.

MILE 4.3
The Carroll Homestead is off Route 102 on the left. There are 5 parking spaces and one bus space .10 mile down the dirt road; accessible parking is another .10 mile down the dirt road.

The homestead today, surrounded by overgrown lilacs and a scattering of old apple trees, is in an open field and speaks of a different island time. The home is not open to the public (except for special events and on certain days in the summer) but the land provides fodder for the imagination to picture a coastal Maine family in the 1800s. For the interpretive guide's text, see the Interpretive Guides section. For more information see the Acadia's People/Portraits of Three 19th Century Island Families/The Carroll Family section.

MILE 5.5
The *Western Mountains* are accessed from the Seal Cove Road on the right side of Route 102 at Mile 5.5. The most remote section of Acadia National Park on Mount Desert Island, Mansell and Bernard Mountains' main hiking trails, the southern end of Long Pond, and Seal Cove Pond are reached from the dirt Seal Cove Road. The road connects Southwest Harbor and the rural communities of Seal Cove and Tremont on State Route 102. The road is closed to cars in the winter. For more trail information, see the Park Activities In-Depth/Hiking section.

Southwest Harbor
Route 102 now enters the town of Southwest Harbor, a very congested area in the summer as vehicles creep through the center of town on the two-lane road.

After passing through Southwest Harbor, at mile 6.8, turn left onto Route102A.The park boundary is crossed at mile 9.5. The road now winds over a natural seawall built by the sea. During calm waters, it is hard to imagine that many of the jumbled rocks scattered along the shore were tossed here by the ocean. Looking out to the east, closest to the shore is the backside of Great Cranberry Island. In the distance are Little and Great Duck Islands.

MILE 9.9
Seawall Picnic Area provides a good location for enjoying shore scenery. The picnic area is to the left, campground to the right. Picnic tables are set amidst towering spruce with an ocean view. Some tables are directly on the ocean front with minimal shade.

Looking to the east is the backside of Great Cranberry Island, to the south are Little and Great Duck Islands, and to the west is Great Gott Island. Here at Seawall the waves roll in, sunlight glowing on the crests. Fog enhances the call of the white-throated sparrow and the smell of rugosa rose and spruce. The coastline is rocky but with a gentle slope to the ocean's edge. At low tide, large areas of rockweed are exposed, making it a slippery venture for exploration. A close look at the exposed ledge bedrock here shows no signs of the coarse-grained granite of Acadia's mountains. Instead it is a gray rock composed of fine ash and rock fragments of a volcanic source, deposited over 400 million years ago.

Protect Your Park – How You Can Help

- At Seawall Picnic Area gulls have become accustomed to being fed. Please do not feed them or any other wildlife.
- Dispose of your food and trash properly. Garbage cans have receptacles for recyclables—please use them.
- Do not remove beach rocks or construct "rock art." They, as everything else in the park, are protected. You are welcome to remove litter, however.

Wonderland and Ship Harbor Trails
The Wonderland Trail (1.5 miles round trip) and Ship Harbor Trail (1.6 miles round trip) both have very small parking lots (approximately 8 vehicles at Wonderland, 20 at Ship Harbor) with no bus parking.

Both Wonderland and Ship Harbor offer excellent opportunities to learn about Acadia's coastal features.

MILE 10.8
The fairly level and wide Wonderland Trail begins in a forested wetland before a slight rise to an open ledge dotted with pitch pine. The sound of waves and a bell buoy signal the proximity of the ocean. As the trail opens to the ocean, a beautiful cobble beach lies to the west. With a

high storm ridge composed of 70-80% cobbles, the beach has a remarkable diversity of rock types such as pink granite, light and dark gray volcanics, and striped sedimentary rocks. Many visitors covet these rocks for souvenirs—but they are protected and not to be removed. One cobble removed with each Acadian visitor would quickly change the beauty of this area.

MILE 11.9
The Ship Harbor Trail visits mudflats, spruce forests, shrub-covered ledge, and open coastline. Tidepooling is common here. For more information, see Acadia's Intertidal Zone.

MILE 12.9
Bass Harbor Head Light Route 102A makes a sharp right; turn to the left and drive to the road's end. Because the parking lot is small with minimal turn around space, buses are restricted on this road.

A well-known and often photographed lighthouse in the Acadia area, Bass Harbor has lit the way since 1858. Lighthouse duty, in comparison to other lights, was not as isolated. Consider life on Mount Desert Rock, nearly 20 miles out to sea, where even soil was brought out to grow vegetables. Bass Harbor was automated in 1974 but still serves as a Coast Guard residence which is not open to the public. The light can be seen 13 miles out to sea. Accessed from the far end of the parking lot, a path leads to stairs which take you down to the classic view below the lighthouse. Be careful— footing becomes rocky and slippery when wet.

Bass Harbor Head Light to Bass Harbor Marsh

The view straight ahead (on Route 102A after Bass Harbor Lighthouse) is toward Mansell and Bernard Mountains. At ***mile 12.4***, a left turn leads to the Swans Island Ferry Terminal in the town of Bass Harbor. It is a passenger and car ferry requiring reservations. Swans Island is the second largest island off the coast of Maine after Mount Desert Island and has a sizeable population.

The harbor here is filled mostly with lobster boats, giving visitors a view of what one might imagine when they think of coastal Maine. Across the harbor is the town of Bernard.

MILE 13.4
At the stop sign, turn right to continue on Route 102 back to Southwest Harbor.
Note: A turn to the left leads to the small community of Tremont. Continuing on Route 102 through Tremont eventually leads to the other side of the dirt Seal Cove Road, and on to the other park sites of Seal Cove Pond and Pretty Marsh picnic area, before eventually circling around past Long Pond and the Beech Hill Road, ending back in Somesville. Pretty Marsh Picnic Area is set in a deep spruce woods with a steep drop to the ocean. For a quiet spot, Pretty Marsh is the choice!

The loop around 102A ends at mile 15, returning back to Southwest Harbor.

Park Sites Off Island

Islesford Historical Museum

The Islesford Historical Museum is located in Islesford, a waterfront community on Little Cranberry Island. Commercial passenger ferries and tour boats provide regular service from Northeast Harbor or Southwest Harbor.

Time Allotment

Plan for a day outing to visit Little Cranberry Island. On a calm day, the two-and-one half- mile boat trip from Mount Desert Island to Little Cranberry Island takes approximately 20 minutes. Depending on the season, the mailboat may run between three to six times a day.
Islesford Historical Museum: 45 minutes

Parking

Parking in Northeast Harbor is at the marina. Turn left on Sea Street which ends at the parking lot. The lot is extremely crowded and often full on most summer days. Parking in Southwest Harbor is at the Upper Town Dock on Clark Point Road in Southwest Harbor.

Facilities

There are seasonal public restrooms at the marina in Northeast Harbor and at the Islesford Historical Museum on Little Cranberry Island. There are no restrooms at the Upper Town dock.

Accessibility

The Islesford Historical Museum is not accessible.

Area Highlights

The Islesford Historical Museum

Administered by the National Park Service as part of Acadia National Park, the museum may be visited daily from mid-June to late September. Admission is free. There is no food or drink allowed in the museum. Please respect items in the museum and leave museum displays untouched.

The Islesford Historical Museum collection preserves both documents and artifacts that pay tribute to generations of independent and self-sustaining Americans. On permanent exhibit in every corner of the museum are items—many of them everyday tools of their time—that tell stories about island life: sextant and octants, harpoon gun and ship clocks, ledgers and weights from a ship's store, and the tools of the island- bound tradesmen. For more information see the Acadia's People/Island Life in the 1800s and the Islesford Historical Museum section.

Little Cranberry Island

An enjoyable walk along Little Cranberry's roads gives visitors a chance to see what life is like on an island today

Schoodic Peninsula

Acadia National Park protects over 49,000 acres of coastal Maine including the 2,266 acre granite sliver of Schoodic Peninsula on the eastern side of Frenchman Bay. Acquired in the

1920s, the park's first superintendent, George B. Dorr, felt that the peninsula captured the essence of the Maine coastline from its rocky shore at Schoodic Point to its outstanding coastal vistas from the top of Schoodic Head. Eventually the peninsula would be shared with the United States Navy. A military radio station based on Otter Cliffs on Mount Desert Island was moved to the Schoodic site in the 1930s. Today, Schoodic is the site of the Schoodic Education and Research Center (SERC), which provides a place for scientific research and presentations, as well as the Schoodic Education Adventure (SEA) overnight camp for school children. Schoodic Peninsula is the only part of Acadia National Park found on the mainland.

Entrance Fees
Obtain a park pass while visiting Acadia on Mt. Desert Island before traveling to Schoodic. It is $20 per vehicle for a seven-day pass.

Facilities
Rest rooms at Schoodic Peninsula are located at Frazer Point Picnic Area and at Schoodic Point. Rest rooms are not open year round.
Frazer Point is the only picnic area at Schoodic.

Camping
There is no camping at Schoodic Peninsula.

Visiting Schoodic Peninsula
The park boundary is marked by a sign just before you reach Mosquito Harbor Bridge. Beyond the bridge, Frazer Point Picnic Area, with tables, fire rings, comfort stations and drinking water, offers seacoast views of islands, coves, and rocky beaches. Leaving the picnic area, the one-way park road intersects a spruce-fir forest as the road parallels the western shore of Schoodic Peninsula to Schoodic Point. Across Frenchman Bay you can see the Mount Desert Island profile with Cadillac Mountain's summit clearly in view.

About two and one half miles from the picnic area, an unmarked road ascends to the top (440 feet) of Schoodic Head. This is a narrow gravel road, so please exercise caution when meeting traffic. Although you can drive up the one-mile road, you may choose to walk. The quick access trail to the summit from the parking area winds through spruce forest mingling with stands of jack pine and pitch pine. On a clear day, vistas of the ocean, forest, and mountains claim your attention. Returning to the main road, keep right at the intersection to reach Schoodic Point. (Caution – This becomes a two-way section of road.) Schoodic Point provides an outstanding vantage point for witnessing the power of the sea.

After leaving Schoodic Point, bear right and follow the road - one way again – until you reach Blueberry Hill Parking Area, about one mile beyond Schoodic Point. If you look towards the ocean, Schoodic Island emerges. To your right is Little Moose Island. Behind you and across the road is a steep slope called The Anvil. You can reach the summit of this 180 foot promontory via the trail that starts across the road from the parking lot. The remaining two mile drive from Blueberry Hill to the park's end at Wonsqueak Harbor is skirted by rocky cliffs and cobble beaches. Jack pine is scattered among stands of white spruce along the roadway. Two miles beyond the park is the village of Birch Harbor and the intersection of Route 186.

The peninsula is flanked by Frenchman Bay to the west and to the east. Looking across to Mount Desert Island, numerous islands dot the seascape. Closest are Turtle Island, Ironbound Island; off in the distance to the left are the silhouettes of Baker and Little Cranberry Island. The peninsula boasts granite headlands that bear erosional scars of storm waves and flood tides. Dark colored basaltic dikes intrude between the peninsula's slabs of pink granite. Along this windswept coast, huge granite ledges turn Atlantic waves into lofty geysers while quieter coves hold tidepools and mudflats for exploration. The peninsula is dotted with swamps and marshes scattered throughout the spruce and fir forests. This secluded section of Acadia National Park provides an outstanding backdrop as an outdoor classroom. Lessons on geology and marine creatures spring to life here. A recent biological inventory provides educators with information on the plants and animals of the peninsula.

Schoodic Education and Research Center

During WWI, a strategically important naval radio station operated from Otter Point to receive signals from the European front. In the 1930s, although still vital to U.S. military efforts, it also represented an obstacle in the proposed continuation of the Park Loop Road through this scenic portion of Mount Desert Island. In 1932, a solution was reached and the United States Navy and Department of the Interior agreed that the park would offer park land on Schoodic Peninsula for the relocation of the naval station.

Between 1935 and 2002, it was home to a U.S. Navy base located at Schoodic Point. In 2002, when the base closed, the property transferred back to the National Park Service. Since then, the park service has been transforming the site into the Schoodic Education and Research Center, which is a part of a nationwide network of National Park Service research learning centers. The SERC residential campus is the largest of all the learning centers and is designed to expand the role of research to help us manage our national parks.

Acadia National Park, in partnership with SERC Institute, facilitates partnerships and collaboration which extends beyond park boundaries and provides learning opportunities for all ages.

SERC Institute

The SERC Institute was created in 2004 as Acadia Partners for Science and Learning, a nonprofit organization dedicated to supporting the Schoodic Education and Research Center of Acadia National Park. The mission of SERC Institute is to guide present and future generations to greater understanding and respect for nature by providing research and learning opportunities through its outstanding Acadia National Park setting, unique coastal Maine facilities, and innovative partnership programs. The overarching vision for SERC is to become a world-class research and learning institution, providing knowledge and transformational experiences necessary for harmony between humankind and the natural world.

Schoodic Education Adventure (SEA) Program

Acadia National Park staff provides curriculum-based classroom activities and hands-on field experience offers an invaluable learning experience in a unique setting. 4th through 8th grade students attend a three- or four-day residential program at SERC and explore shoreline,

wetland, and forest ecosystems as part of a rich educational environmental program. The unique public-private partnership between the SERC Institute and Acadia National Park enables the two organizations to work together to bring researchers, educators, and students to the park to use the park's diverse ecosystems as classrooms and to conduct field research. A central goal is to promote the understanding, protection, and conservation of the natural and cultural resources of the park and the region. An equally important goal is the advancement of significant research projects at local, regional, national, and international levels.

Isle au Haut

"High Island" is the English translation for Isle au Haut, the name given by the French explorer, Samuel Champlain, during his expedition along the Maine coast in 1604. Although shell heaps along the island's shores tell of an American Indian presence long before Champlain's arrival, it wasn't until the end of the American Revolution that farmers, fishermen, and boat builders came to the island in large numbers. In the 1880s, a small summer community, attracted by agreeable weather and idyllic scenery, was established. In 1943, heirs of the founder of that community donated portions of Isle au Haut to the federal government as part of Acadia National Park. Because of their generosity, much of the island's beauty and solitude is now preserved for all to experience and enjoy. Although about one-half of Isle au Haut is federal park land, the other half is privately owned, with summer residents and a year-round fishing community. Please respect private property rights. See the In-Depth/Isle Au Haut section for more information.

ISLAND ATTRACTIONS

Lighthouses

Of the 65 lighthouses in Maine, four are in the immediate Mount Desert Island area.

Egg Rock Lighthouse: Located in the mouth of Frenchman Bay on a thin strip of rock ledge, the 40 foot white tower was built in 1875.Visible from the Park Loop Road; the fog horn from this lighthouse is often heard in Bar Harbor.

Baker Island Lighthouse: Seven miles out to sea, Baker Island is a part of Acadia National Park. In the early 1800s, William and Hannah Gilley, with their three young children, rowed from Southwest Harbor to claim, not purchase, Baker Island for their home. Nine more children would come along, reveling in the forests and shores of this beautiful Maine island. The United States government built a lighthouse on Baker in 1828 making it the oldest light in the area. William became the first lighthouse keeper, keeping his family in all the whale oil they could use. Some of William and Hannah's children remained on Baker while some left to live on Mount Desert Island or other islands. Other families eventually came to live on Baker as well and at one time the island had a sizeable population. A small cemetery on the island reminds us of others who lived there.

Today the lighthouse is automated and almost all the land is part of Acadia. A few buildings remain and two homes are privately owned. With Baker Island's fields of lupine and rugosa rose, its wild storm beach on its southern side and its outstanding view of Mount Desert Island, it is a special destination for park visitors with boat access.

Bear Island Lighthouse: Just outside the mouth of Northeast Harbor, Bear Island Light perches atop this small island's steep southern cliff. It was built in 1839, rebuilt in 1889, and included a fog bell rung during low visibility. Bear Island Light can be viewed on boat cruises from Northeast Harbor.

Bass Harbor Head Light: Built in1858, this lighthouse was a necessity to guide seafarers around the shallow Bass Harbor Bar into the eastern entrance to Bass Harbor. It also marks the entrance into Blue Hill Bay. In 1876 a fog bell and tower were added. It is one of the most scenic and accessible lighthouses in the area, although inside tours are not available. It can be reached off State Route 102A.The keeper's house currently serves as Coast Guard housing.

Towns

East Side Towns

Northeast Harbor

This small community is nestled along a narrow harbor dotted with more yachts than fishing boats. Two outstanding public gardens are found in Northeast Harbor. The Azalea Gardens, spectacular in June, are beautiful during any month. Thuya Garden sits atop a cliff and is accessed either by trail (located across from the Asticou Inn) or by the garden's drive. The Asticou Inn (along with the Claremont Hotel in Southwest Harbor) is an original hotel from the hotel era in the late 1800s. Access to the Cranberry Islands is from the mailboat which operates from Northeast Harbor's marina.

Seal Harbor
A post office, gas station, small store, and a restaurant mark the main street of Seal Harbor. This first glance doesn't convey the fact that Seal Harbor is host to many massive "cottages." Hidden in the coniferous woods along the rocky cliffs of the town are many mansions. Seal Harbor beach is a favorite spot for sunning and swimming in the summer.

Bar Harbor
The largest community on the island, Bar Harbor is filled to the brim with visitors during the summer months. Restaurants, shops, outfitters, hotels, and boat cruises can all be found here. A visit in January provides quite a contrast— boarded up windows, a few cars, and the occasional visitor show Bar Harbor's winter face!

West Side Towns
Somesville
Somesville's character, created by quaint clapboard houses and a steepled church, is enhanced by the island's mountains and Somes Sound. Known as "Betwixt the Hills" when it was first settled in 1761, the name Somesville came from its homesteading founder, Abraham Somes. Today visitors may stroll the sidewalks of this village listed on the Register of National Historic Places.

Southwest Harbor
The first people known to have been on Mount Desert Island were, according to recent archaeological excavations, prehistoric native tribes that inhabited Fernald Point on Somes Sound, just to the north of Southwest Harbor, 3,000 years ago. The more recent Wabanaki, the people first encountered by European explorers to this area, also inhabited this site. Surprising to some, it was Southwest Harbor and not Bar Harbor that first hosted visitors. The island's first steamship dock at Clark Point welcomed city-dwelling rusticators ready to experience this mountainous island in the 1840s. Today, Southwest Harbor is home to the United States Coast Guard and numerous boat building industries.

Bass Harbor and Bernard
If one is looking for a classic Maine coast fishing village, Bass Harbor and its sister community, Bernard, across the harbor will satisfy! Lobster boats, lobster traps, and industrious fishermen define these two communities. Ferry service to Swans Island, the second largest island off the Maine coast, leaves from Bass Harbor. The island is perfect for exploring by bicycle.

Museums and Research Facilities
Abbe Museum (Downtown Bar Harbor)
The museum celebrates Maine's Native American heritage. A permanent exhibition "Wabanaki: People of the Dawn," as well as changing exhibitions and educational programs engage visitors of all ages. Call (207)288-3519 or visit **www.abbemuseum.org**

Abbe Museum at Sieur de Monts (Acadia National Park off State Route 3)
A visit to the original Abbe Museum is a step back in time. It features exhibits on the archeology of Maine and the history of the museum. Call (207)288-3519 or visit **www.abbemusuem.org**

Bar Harbor Historical Society (Downtown Bar Harbor)
The Society holds an outstanding collection extending from Bar Harbor's 1796 incorporation through the Gilded Era to the present. Call (207)288-0000 or 288-3807 or visit **www.barharborhistorical.org**

Frenchboro Historical Society (Long Island)
Old tools, furniture, household goods and local memorabilia are on exhibit in the museum. Programs and other special events are offered. Library and craft shop. Call (207)334-2924 or visit www.frenchboro.lib.me.us

George B. Dorr Museum of Natural History (College of the Atlantic, Bar Harbor)
The museum investigates and interprets the natural history of Maine through a human ecological perspective. Detailed exhibits depict the animal and plant life of Maine. Call (207)288-5395 or visit www.coamuseum.org

Great Cranberry Island Historical Society (Great Cranberry Island)
Located in the Longfellow Schoolhouse, the exhibit traces life on Great Cranberry Island from its earliest inhabitants to the present and includes children's activities. Call (207)244-9055 or visit **www.gcihs.org**

The Great Harbor Maritime Museum (Located in the old firehouse, Northeast Harbor)
The museum explores and celebrates local maritime history and promotes educational activities on the ocean. Call (207)276-5262 or visit **www.greatharbormuseum.org**

Islesford Historical Museum (Little Cranberry Island)
The museum exhibits explore life in the Town of Cranberry Isles during the 19th century when schooners were the mode of transportation and oceans were the highways. Call (207)244-9224 or visit **www.nps.gov/acad**.

Mount Desert Oceanarium
Hands-on oceanographic exhibits depict life in and on the sea. Discovery and educational opportunities include; a lobster museum and hatchery, a salt marsh tour, and a touch tank discovery program. Call (207)288-5005 or visit **www.theoceanarium.com**

Sieur de Monts Nature Center (Acadia National Park off State Route 3)
The nature center highlights the plant and animal life of the park and how this diverse resource is managed by park scientists. Call (207)288-3338 or visit **www.nps.gov/acad**

Somesville Museum (Somesville, State Route 102)
The original site of the MDI Historical Society, in the heart of the island, overlooks a historic millpond and tranquil Somes Harbor. Exhibits featuring historical topics of MDI communities are installed each summer and include children's activities. Call (207)276-9323 or visit **www.mdihistory.org**

Sound School House Museum (State Route 198)
Built in 1892, the MDI Historical Society restored the building in 1999. In the summer, rotating exhibits focus on the cultural history of Mount Desert Island. In the winter, the experience of a 19th century school is recreated. The museum also has a research library.

Call (207)276-9323 or visit **www.mdihistory.org**

Swans Island Lobster and Marine Museum (Swans Island)
Ship models, photos, equipment, and stories represent two centuries of Maine commercial fishing and the lobster industry. Call (207)526-4423

Wendell Gilley Museum (Southwest Harbor)
Discover where art and nature meet in Maine. The Gilley Museum's diverse collection of bird carvings, touring art exhibits, and hands-on programs delight visitors of all ages.
Call (207)244-7555 or visit **www.wendellgilleymuseum.org**

William Otis Sawtelle Collections and Research Center
Collections pertaining to the Cranberry Isles and Acadia National Park. Call (207)288-8728 or email **rebecca_cole-will@nps.gov** for more information.

PARK ACTIVITIES IN-DEPTH

Accessible Carriage Roads

Generally, the carriage road system offers the best access to many remote and scenic areas. The two easiest are listed below. Others tend to be steeper. Extended use of the carriage roads depends on your ability and endurance. Be sure to have a copy of the Carriage Road Users Map (at the end of the bicycling section) or a carriage road guide book from park information centers. Carriage road intersection numbers on signs correspond to these sources.

Eagle Lake

Park at the Eagle Lake parking lot on the north side of Route 233.To the north, the carriage roads lead toward Breakneck Ponds, Half Moon Pond, and Witch Hole Pond (round trip-5.3 miles). To the south, under the stone bridge, the carriage roads lead in two directions around Eagle Lake (round trip-6 miles).When following the carriage roads, be aware of washouts, steep grades, and bicycle traffic. Assistance may be helpful. There are accessible restrooms in the parking lot.

Bubble Pond

From the parking area, follow the level trail to the north end of Bubble Pond. From here you have access to the carriage roads, one of which borders the pond. There are accessible restrooms in the parking lot.

Accessible Trails

Sieur de Monts Area

Accessible parking is located near the Nature Center.

Wild Gardens of Acadia

Garden paths are packed gravel-surfaced. Assistance may be helpful.

Hemlock Road

On the right as you enter the parking lot is a hard, gravel-surfaced abandoned road. Trail meanders through woodlands at the base of Dorr Mountain and is for the adventurous and hardy. (1.5 miles round-trip)

West Side of MDI

Wonderland Trail

Park in the Wonderland parking lot, which is west of Seawall Campground on Route 102A. Following an abandoned road, the trail has both level and hilly sections. It is generally hard-packed with some loose and rocky sections. In about ¾ of a mile, the trail leaves the woods and opens onto the shoreline at the tip of the Wonderland Peninsula. Assistance will be necessary in several places, but the view is worth the effort.

Ship Harbor Trail

Park in the Ship Harbor parking lot, west of Seawall Campground on Route 102-A.
The first quarter mile of the trail is a hard packed surface leading to the mudflats. Access to intertidal pools is over rocky, uneven terrain.

Carroll Homestead
The Carroll Homestead is located on Rt. 102, one mile north of Southwest Harbor. The path is hard-packed but root-covered and uneven. Assistance may be necessary on path and grassy field near house. Accessible parking is available at end of the road adjacent to house. An interpretive guide is available on site or at the visitor center. For the text, see the Interpretive Guides section.

Bicycling
From Acadia's unique car-free carriage road system to the scenic 27-mile Park Loop Road, bicyclists have many routes to choose from. Know your route and road conditions before you start out. Not all motor roads have bike lanes or good shoulders. Choose your route according to your abilities, time, and members in your party. Bar Harbor, Northeast Harbor, and Southwest Harbor have bicycle rentals. Bicycle use is limited to certain carriage roads. Bicycling on hiking trails is prohibited. Please follow the rules of the road so everyone in your group has a safe and enjoyable trip.

Riding the Park Loop Road
- On automobile roads, ride single file in the direction of traffic.
- Obey all traffic signs.
- Obey one-way rules and bike with the traffic.

The Park Loop Road has no shoulder or bike lane. The one-way section does have two lanes providing more room for cars to pass. The two-way section is narrow and visibility is limited in most areas. This is especially true of the busy Cadillac Mountain Road. If you choose to bike the Park Loop Road during the busy summer months, consider doing it in the early morning or late afternoon. Although the road up Cadillac is the only mountain climb, there are steady heart-pounding rises. Cyclists on the one-way section of the Park Loop Road must follow the one-way direction. Be aware that cars may park in the right hand lane.

Two-way traffic is between Jordan Pond and the visitor center. This section is narrow without an adequate shoulder and not recommended for bicycling. Between June 23 and Columbus Day, cyclists can use the Island Explorer Shuttle Bus to avoid the two-way section.

Cadillac Mountain
The 3.5 mile twisty road has an 8% grade and limited visibility. Traffic is heavy, and in many areas the shoulders are gutters for handling rain run-off. Cadillac Mountain is not recommended for bicycling.

The Carriage Roads
The best way to access the park between June 23 and Columbus Day is via the Island Explorer Shuttle Bus. From The Village Green in Bar Harbor, there is a scheduled Bicycle Express which provides access to the carriage road at Eagle Lake. All IE buses can transport 6 bikes at a time, providing access to other carriage road entrances such as Brown Mountain and Jordan Pond.

You can bicycle into the park by riding about .8 miles up West Street Extension to the Duck Brook Road to access the carriage roads at Duck Brook. From Duck Brook Bridge, visitors can travel Eagle Lake, Witch Hole Pond, and/or Paradise Hill carriage roads. The West Street Extension is a fairly steep residential road with no shoulder.

Rules of the road

- Keep your speed down and be considerate of other users.
- Let other users know you are passing.
- Yield to pedestrians and horses.

For carriage road biking, be sure to have a copy of the Carriage Road Users Map (at the end of this section) or a carriage road guide book from park information centers. Carriage road intersection numbers on signs correspond to these sources.

The Jordan Pond area provides good access to the carriage road system, but note that many of the carriage roads to the south of Jordan Pond are on private property and off-limits to cyclists (but not horses or walkers). Check carriage road guides for specific closure areas.

The suggested routes here are for bikers and ambitious walkers, but anyone can travel a short distance on the roads to experience their flavor.

Carriage Road Routes

From Visitor Center: Witch Hole Pond/Paradise Hill's six mile route travels past marshes, through woods, and offers occasional ocean views. A ½ mile steep, gravel access path leads from Hulls Cove Visitor Center parking lot. Caution is needed on the descent.

From Eagle Lake Parking lot on State Route 233; 3 miles west of Bar Harbor:
NOTE: Many people parallel park on either side of Route 233. If doing so, please be aware that Route 233 is a very busy highway.

- Witch Hole Pond/Paradise Hill: See above. This access eliminates the steep access path. Witch Hole Pond Loop is reached in 1 mile via the carriage road from Eagle Lake parking lot.
- Eagle Lake's six-mile loop is fairly level on the east side with steady rises on the southern and western sides. Other options from this loop include traveling to Bubble Pond and Jordan Pond.
- Aunt Betty Pond Loop quickly climbs to the west of Eagle Lake, offering mountain views before descending past Aunt Betty Pond, meadows, and marshes. The road climbs again before rejoining the Eagle Lake carriage road. Other options include traveling to Brown Mountain or Jordan Pond.

Bubble Pond Area—from Park Loop Road

- Bubble Pond to Jordan Pond: The Bubble Pond carriage road ambles along the eastern shores of Bubble Pond around the base of Pemetic Mountain. After passing by Wildwood Stables and the Day Mountain carriage road, the carriage road continues to Jordan Pond.

- Eagle Lake: See above. This loop is accessed via carriage roads after crossing the Park Loop Road.

Jordan Pond Area—from Park Loop Road

Note: Many cyclists use Jordan Pond as their ending point, choosing to use the Island Explorer shuttle buses to return to their starting points. There is a high demand for buses from Jordan Pond back to Bar Harbor in the late afternoon. Effort should be made when possible to have bikers consider other options, such as taking the bus to Jordan Pond and biking back to their destination or planning to return in the early afternoon rather than late afternoon.

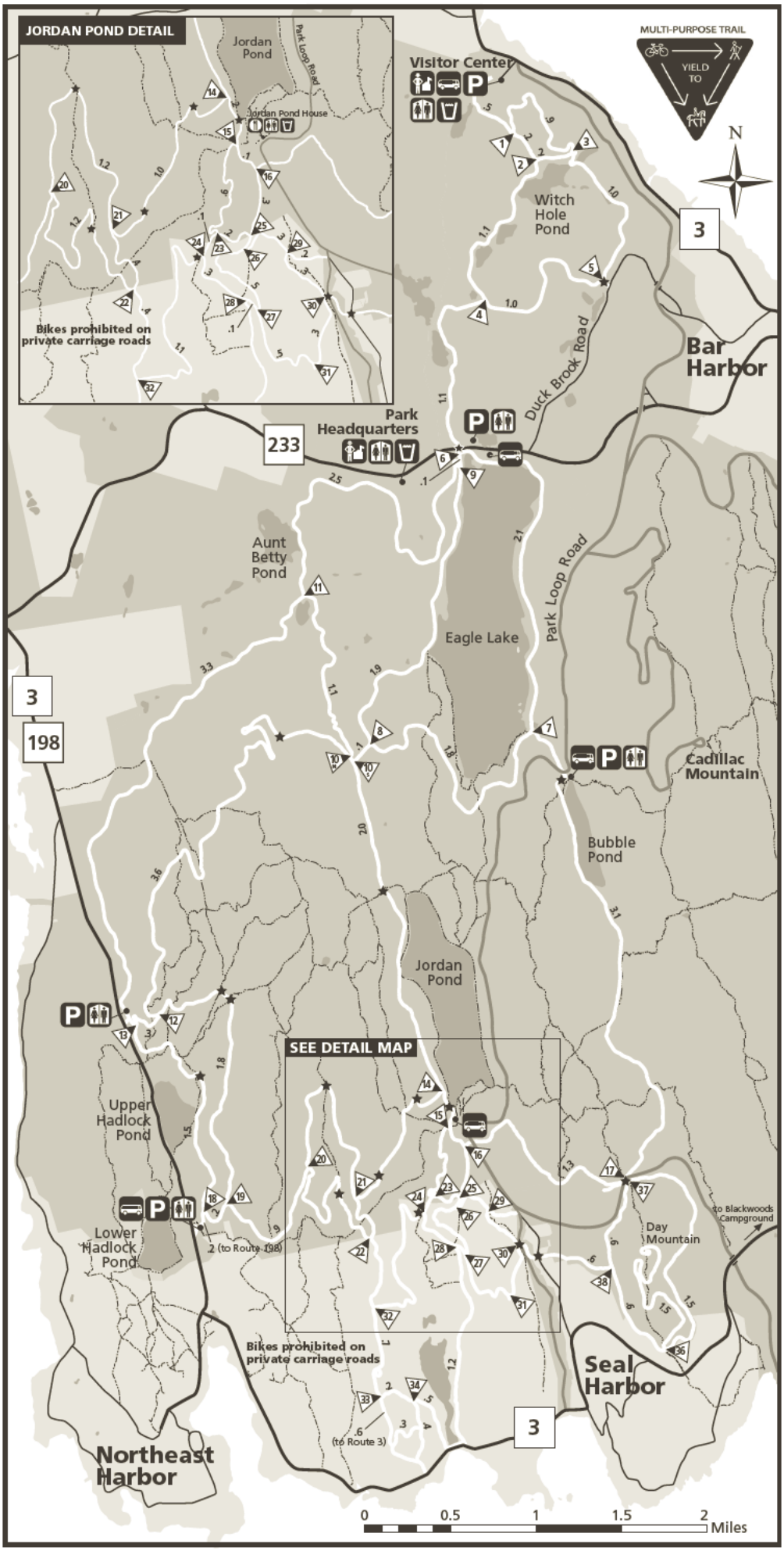
- Around Mountain circles the bases of Penobscot, Sargent, and Parkman Mountains in this strenuous 11-mile loop. The loop is also accessed from Eagle Lake, Parkman Mountain, or Brown Mountain parking areas.
- Jordan Pond to Bubble Pond: See Bubble Pond area.
- Jordan Pond to Amphitheatre: See Brown Mountain Area.
- Jordan Pond to Eagle Lake rises above Jordan Pond passing between the Bubbles and Sargent Mountain before descending toward Eagle Lake.

Parkman Mountain—from State Route 198

- Hadlock Brook (Parkman Mountain): This four mile loop is a good choice for walkers and cyclists alike. Primarily wooded until rising around the base of Parkman Mountain and Bald Peak, the road offers views across Hadlock Pond out to sea, and crosses three carriage road bridges: Hadlock Brook, the Waterfall Bridge, and the Hemlock Bridge.
- Around Mountain Loop: See Jordan Pond.

Brown Mountain—from State Route 198

- Hadlock Brook: See above.
- The Amphitheatre loop lies to the east of Brown Mountain in a valley between Sargent and Penobscot Mountains. The loop's two carriage road bridges are in direct contrast to each other. The 236-foot-long Amphitheatre Bridge, reached after a steady uphill climb, dwarfs the Little Harbor Brook Bridge. Another option is to continue on to Jordan Pond from the Amphitheatre, passing over the Cliffside Bridge and the West Branch Bridge.



Carriage Road
User's Map

Rules and Regulations

- Carriage roads are closed to motor vehicle use.
- Bicycles are prohibited on privately owned carriage roads. Obey signs.
- Horses are prohibited on the Witch Hole Pond and Paradise Hill Loops and the Eagle Lake Loop, except between intersections 7 and 8.
- Pets must be restrained on leashes six feet or less.
- Hiking trails are closed to bicycles and horses.
- Swimming, wading, and pets are prohibited in public drinking water supplies. Please respect posted regulations at lakes and ponds.

Carriage Road Safety

- Bicyclists yield to all users. Everyone yields to horses, which can be startled by sudden movements.
- Slow down! Speeding can be hazardous. Bicycling on the carriage roads is a major cause of visitor injuries at Acadia.
- Be prepared to stop. Sudden stops are dangerous on loose gravel.
- Stay to the right. Give a clear warning before passing on the left.
- Move to the side when stopped.
- Wear a helmet and carry plenty of water.
- Leave no trace. Carry out what you carry in.
- You may encounter heavy machinery and trucks used for carriage road maintenance. Please be careful.
- Winter issues: Snowmobiles may travel on the carriage road on the east side of Eagle Lake. Please use caution. Please refrain from walking or snowshoeing in ski tracks and keep dogs and horses out of ski tracks.

★	Carriage Road Bridges
	Carriage Roads
▷	Numbered Intersection Signposts
1.1	Mileage Between Signposts
	Primary Roads
	Secondary Roads
	Park Loop Road
	Hiking Trails (bicycles & horses prohibited)
	Lakes and Ponds
	Acadia National Park
	Private Property
	Drinking Water
	Island Explorer Bus Stop
	Food Service
P	Parking
	Ranger Station
	Restrooms (some closed in winter)

Western Side of Acadia

In addition to cycling on the state highways, there are two gravel roads in the park for cyclists.

- The Seal Cove Road connects Southwest Harbor to Seal Cove over a four-mile road. Although cars are permitted on this road, it is not heavily traveled, except for commuter traffic.
- The Hio Road connects Seawall Campground with Highway 102 at Bass Harbor Marsh. The 2.5-mile level gravel road runs through a wooded, marshy area. It begins in the group camping area at Loop C.

Boat Excursions

Bar Harbor

From the pier on West Street, boating companies operate boat trips from whale watching to nature cruises to schooner jaunts. These include Acadia's nature cruise of Frenchman Bay.

Baker Island: Mostly all national park land, historical Baker Island is accessible via private boat or on a ranger led cruise. The island has panoramic views of Mount Desert Island and a magnificent granite block beach.

Islesford Historical Museum: On Little Cranberry Island, this small brick structure, part of Acadia National Park, exhibits stories of past island residents and their ties to maritime history. Ranger led boat cruises are available. For more information, contact the park at 288-3338.

Outer Islands: The Town of the Five Islands (Bear, Sutton, Baker, Little Cranberry, and Great Cranberry) lies just outside of Northeast Harbor's mouth. Visitors wishing to glimpse island life can explore both Great and Little Cranberry Islands or just enjoy an excursion from either Northeast or Southwest Harbors.

Northeast Harbor

Beal and Bunker, Inc.: Year round mail boat service to the outer islands. (207)244-3575.

Southwest Harbor

Cranberry Cove Boating: Seasonal boat service to Cranberry Isles from Southwest Harbor's Upper Town Dock, off Clark Point Road. (207)244-5882; 460-1981

Bass Harbor

Swans Island Ferry: Six-mile, 30-minute trip from Bass Harbor. Reservations required for car transport. (207)244-3254 or (207)526-4273

Boat Excursions – Canoes and Kayaks

There are numerous outfitters that offer rentals and guided trips in each of the island towns. Check local newspapers or the yellow pages for specific phone numbers.

Camping

Facilities

There are two campgrounds in the park. All sites are wooded and within a 10 minute walk of the ocean. The majority of sites are for tents, small and large, but other sites accommodate pop-

ups, vehicle campers, and RV's up to 35 feet. A maximum of one vehicle and six people is allowed at each site. There are no hook-ups. Campground facilities include pay phones, comfort stations, cold running water, dump station, picnic tables, fire rings, and water faucets. Showers and camping supply stores are within 1/2 mile of both campgrounds. Private campgrounds are available on the island. Contact local chambers of commerce for listings.

Specific Campground Locations and Information

Sites and facilities are OK to good for accessibility but do not necessarily meet all ADA standards. There are 13 sites at Seawall and 16 sites at Blackwoods that meet ADA standards.

Blackwoods Campground: Located on Route 3 five miles south of Bar Harbor.
Open year round. Reservations are suggested from May 1–October 31 and are handled through the National Recreation Reservation Service. Call 1-877-444-6777. Fee: $20.00/night. From November through April, Blackwoods is first come, first served. Facilities may be limited. Blackwoods is open for winter camping, free of charge, from December 1 through March.

Seawall Campground: Located on Route 102A four miles south of Southwest Harbor. Open from late May through September. Half the sites are first come, first served. The other half may be reserved in the same way as Blackwoods. In late July and August there is a great demand for campsites. Fee: $20.00/night for drive-in sites; $14.00/night for walk-in sites.

Group Sites

Group campsites are available at both Seawall and Blackwoods. There are five group sites at Seawall and four at Blackwoods, which hold up to 15 people each. They must be reserved through the park. Call 288-3338 for more information, or download the application form from our website at www.nps.gov/acad and FAX or mail it. Fee: $50.00/night.

Regulations

Pets must be leashed and attended at all times. Camp in established campgrounds only. Length of stay is limited to 14 days. Quiet hours extend from 10 p.m. to 6 a.m. Both campgrounds are closed to persons other than registered campers from 10 p.m. to 8 a.m. Food must be stored in a rigid latching container, vehicle, or in such a manner as to be inaccessible to raccoons, squirrels or other foraging animals.

Overnight backpacking is prohibited. Acadia is a small national park with a large visitation. Limiting backpackers to a reasonable level to assure minimal damage to resources is not a feasible option.

Isle au Haut

A special use permit is required for use of the camping shelters at Duck Harbor on Isle au Haut. Maximum stay is 5 days from opening through June 15, and from September 15 through closing. From June 16 through September 14 the maximum stay is 3 days. Isle au Haut camping party size is limited to 6 persons per site. No tents are allowed outside the lean-to. Dogs are not allowed in the campground. For information about reserving a site on Isle au Haut, see the Isle au Haut in-depth section, or go to our website at www.nps.gov/acad or call 288-3338.

Fishing

During July and August, trout and salmon are found deep in the cooler waters of lakes and ponds on Mount Desert Island. Special fishing gear often leads to greater success in catching cold water species in the summer. In the cooler seasons, trout and salmon can be readily caught using common methods. Warm water species can be caught in several lakes and ponds throughout the year using common methods.

Freshwater Fishing

You may purchase a freshwater fishing license locally in town offices. Maine residents 16 years or older and non-residents 12 years or older need a license.

To obtain non-resident license:

- Paradis True Value Hardware
  31 Holland Avenue, Bar Harbor, 288-4995
- Northeast Harbor Municipal Building, 276-5531
- Southwest Harbor Municipal Building, 244-5404

To obtain resident license:

- Bar Harbor Municipal Building
  Cottage Street, 288-4098

Cold Water Fishing

Echo Lake (Motors over 10 horsepower prohibited)

- Brook trout

Long Pond

- Landlocked salmon

Bubble Pond (Motors over 10 horsepower prohibited)

- Brook trout

Eagle Lake (Motors over 10 horsepower prohibited)

- Landlocked salmon
- Brook trout
- Lake trout

Jordan Pond (Motors over 10 horsepower prohibited)

- Landlocked salmon
- Lake trout

Upper Hadlock Pond

- Brook trout

Lower Hadlock Pond

- Brook trout
- Brown trout
- White perch

Warm Water Fishing

Long Pond

- Smallmouth bass
- Chain pickerel

Hamilton Pond

- Pickerel
- Largemouth bass

Seal Cove Pond

- Chain pickerel
- Smallmouth bass
- White perch
- Yellow perch
- Brown trout

For more information, contact the Maine Department of Inland Fisheries at (207)434-5925. Most ponds and lakes on the island are public water supplies. Swimming, wading, and pets are prohibited in public water supplies. Please respect posted regulations.

Ocean Fishing

No license needed. Be cautious of surf conditions. Seaweed and algae covered rocks are extremely slippery.

Frazer Point, Schoodic Peninsula

- Mackerel (when running)

Sargeant Drive, Somes Sound

- Mackerel and bluefish (mid-July, August, September)
- Striped bass (July, August, September)

Hiking

This trail list divides Acadia's hiking trails according to their general location. It includes brief trail descriptions, NPS ratings, trailhead starting points, one-way distances (unless otherwise noted), and time estimates for the one-way distance (unless otherwise noted) based on an average hiker with resting stops. Trailheads that begin off of a connecting trail only have the mileage listed for the specific trail, not the connecting trail. Hikers should note this and add the distances for each trail for a more accurate idea of the time and distance involved.

This information does not take the place of a detailed map and/or guide; therefore the park strongly encourages the purchase of one or both of these items. A word of caution—some trail names have returned to their historic names. Some guides and maps may not reflect this change.

Hiking Guidelines

- Carry detailed hiking map and, if desired, hiking guide book.
- Always estimate a little extra hiking time.
- Wear proper gear for terrain and weather.
- Bring adequate water.
- Leave no trace—pack it in, pack it out.
- Follow trail blazes (blue paint) and rock cairns (rock piles on open rock).
- Stay on established trails, especially on mountain summits, to avoid trampling fragile plants and creating "social" trails.
- Some trails may be closed due to unsafe conditions or nesting birds. Check before hiking.

Trail Ratings
E—Easy/Generally over level ground but may include some minor rises. They may be over rocky ground.
M—Moderate/Includes gradual inclines with uneven footing.
S—Strenuous/Steep, rocky, difficult inclines.
L—Ladder/In addition to being strenuous includes iron rungs or ladders to traverse narrow ledges or cliff faces.

From Bar Harbor

- Bar Island (E): A window of 1-1/2 hours on either side of low tide allows passage along the bar connecting this island to Bar Harbor. Meadows and woodlands are crossed by trails. Trailhead: Bridge Street off West Street in Bar Harbor 1/2 mile/ 30 minutes.
- Great Meadow Trail (E): Following in the footsteps of those that gave land to create Acadia, generous private landowners have allowed visitors walking access to Acadia's Great Meadow from Bar Harbor. Please respect their privacy.

Park Loop Road – Visitor Center to Sieur De Monts
Trailheads along the Park Loop Road are given in order of location with mileage measured from the visitor center.

- Cadillac North Ridge Trail (M): Open ledges and views toward Bar Harbor characterize this trail that primarily follows the road bed to Cadillac's summit. This trail is very congested during July and August. Parking is NOT allowed in the right lane. Trailhead: 3.2 miles from the start of the loop road/ 2.2 miles /90 minutes/ one way
- Gorge Path (M): Traverses a rocky streambed enclosed by mountain walls through the saddle between Dorr and Cadillac. Trail turns westward at notch between Cadillac and Dorr and climbs to Cadillac Mountain summit. Trailhead: 3.8 miles from start of the loop road/1.9 miles/90 minutes/ one way.
- Kebo Mountain Trail (M): Steep, open ledges with views towards Bar Harbor and Cadillac Mountain's east side. Trailhead: 4.1 miles from start of the loop road (Kebo Mountain rises 407 feet) .3 miles to summit/1.8 miles total/90 minutes. Hemlock/Stratheden makes for a nice return 1 mile/30 minutes.
- Stratheden Path (E): This path gradually rises through birch and aspen forests before ending at the Park Loop Road. .8 miles/25 minutes

Sieur De Monts Area
Dorr Mountain hiking trails and their connections to Cadillac Mountain and other areas of the park are primarily accessed from Sieur de Monts. In general, trails following the east face of Dorr Mountain are more challenging than those on the southern and northern slopes. Check trail guides and maps for specific directions.

Dorr Mountain East Face Trails – Trailheads behind Spring House on Jesup Trail:

- Emery Path/ Schiff Path (S): Access to the East Face of Dorr Mountain via trails built with granite steps. The trail is open with immediate and satisfying views. 1.5 miles /75 minutes.
- Kurt Diederich Trail (S): This trail is more wooded than the Emery Path.

- The trail connects with the Schiff Path and continues as a steady climb over open granite ledges toward Dorr's summit. 1.5 miles /75 minutes.
- Ladder Trail (L): This very strenuous climb includes three iron rung ladders and numerous granite steps. Trailhead can also be accessed from Tarn parking lot on State Route 3. It connects with the Schiff Path to complete the hike to Dorr Mountain summit. .6 mile/50 minutes.

Other trails:

- Kane Trail (M): Rolls through meadows, past beaver ponds, and through woods along Otter Creek. Trailhead can also be accessed from Tarn parking lot on State Route 3. Provides connections with the Ladder Trail and Canon Brook. 1.2 miles/35 minutes.
- Jesup Path (E): Following in the footsteps of Native Americans through birch forests and open marsh. Today's trail, over boardwalks and small foot bridges, connects to the Tarn Trail to the east and the Park Loop Road to the west. .6 miles/ 20 minutes.
- Beachcroft Trail (M): Across from the Tarn and Route 3, a series of stone steps and switchbacks along open ledges rise to just below Huguenot Head's summit. The trail drops into a small valley and continues on to Champlain Mountain's summit. .8 mile/55 minutes.

From Sieur De Monts to Sand Beach

Park Loop Road Trailheads (in order of location on Park Loop Road):

- Champlain North Ridge Trail (M): This gradual climb leads to the summit of Champlain Mountain. Trailhead: 6.4 mile from visitor center on the Park Loop Road 1 mile/55 minutes.
- Precipice (L): One of the most challenging trails in the park, the Precipice is a non-technical climb over steep exposed rock with sheer drops using ladders, iron rungs, and steel bridges across ravines. NOTE: Hikers with hesitancy about heights should not take this route. Climbing down this trail is dangerous and not recommended. Consult a trail map or guide to identify easier return routes. The thousand foot cliff face is also home to nesting peregrine falcons. To prevent disturbance to these raptors and protect hikers, the trail is often closed in the spring until mid-summer. Trailhead: 7.3 mile from visitor center on the Park Loop Road .9 mile/65 minutes.

Sand Beach Area

- Beehive (L): For those wanting an exhilarating climb, the Beehive's iron rungs and sheer drop ledges provide just that. Climbing down this trail is dangerous and not recommended. Consult a trail map or guide to identify easier return routes. NOTE: Hikers with hesitancy about heights should carefully consider taking this route. From the top of the Beehive, continue on toward the Bowl. Trailhead: Off Park Loop Road across from Sand Beach Parking Area .8 mile/40 minutes.
- Champlain South Ridge Trail (M) leads to spectacular ocean views. From Champlain's summit, return via the same route, or down Bear Brook or head to the west and the Beachcroft Trail (see Sieur de Monts section). Trailhead: from Bowl Trail.
- Great Head Trail (M) rambles up and around a rocky peninsula and through a birch forest. Starting point is at the eastern end of Sand Beach. Trailhead: East end of Sand Beach/Roundtrip: 1.7 miles/60 minutes.

- Ocean Path (E) parallels the Park Loop Road as it passes Thunder Hole, winds around Otter Cliffs, and ends at Otter Point. The second half of the two-mile trail is more secluded from the road. Trailhead: Upper parking lot at Sand Beach/2 miles/55 minutes.
- The Bowl Trail (M) is a gradual climb between the steep-sided Beehive and Gorham Mountain to this small glacial pond. Trailhead: Off Park Loop Road across from Sand Beach Parking Area .7 mile/30 minutes.

From Sand Beach To Jordan Pond

Park Loop Road Trailheads in order of location on the Park Loop Road:

- Gorham Mountain Trail (M): Gorham Mountain rises gradually to 525 feet, offering ocean views from its summit before dropping into its shared valley with the Beehive. Cadillac Cliffs, a short spur trail just after the start of the Gorham Mountain Trail, passes through a wooded area along rock walls, once the island's shoreline following the release of glacial ice 12,500 years ago. Trailhead: 9.7 miles from visitor center on Park Loop Road 1 mile/45 minutes.

Jordan Pond Area

Trailheads from behind Jordan Pond Gift shop at Carriage Road junction # 15:

- Asticou Trail (M) is a rolling woods walk with a few gentle climbs. The trail connects to Penobscot Mountain Trail (1.3 miles) and Sargent Mountain South Ridge Trail and carriage road to Brown Mountain (2.1 miles).
- Jordan Stream Trail's (M) character changes with the personality of the stream that, dependent on the season, ranges from quiet pools to rushing water. The Cobblestone Bridge at trail's end seems to be a natural extension of the stream itself. Built in 1917, it is the only carriage road bridge faced with cobblestones. Return trip is along a carriage road. .6 miles/20 minutes.
- Jordan Cliff Trail's (L) very steep rises and drops characterize this rugged hike over ledges and rocky breakdown. Metal rungs, railings, and bridges assist hikers. Trail may be closed at times in the spring and early summer due to peregrine falcons nesting. 2.2 miles/90 minutes.
- Penobscot Mountain Trail (S) A gradual rise to Penobscot's summit continues to small Sargent Pond and on to Sargent Mountain, the park's second highest summit. 1.5 miles/70 minutes. Trailhead: 1 mile from Jordan Pond on the Asticou Trail, also can be accessed from behind the gift shop via the Spring Trail.
- Jordan Pond Path (M) This 3.3 mile loop includes level hard-packed walking on the east side, some challenging terrain over boulders on the northwest side and a plank trail for most of the west side. 1 hour, 40 minutes.
- Bubble and Jordan Ponds Path (E/S) The beginning mile (from the Jordan Pond Path) is a gradual rise through open spruce woods past trailheads for Pemetic Mountain and the Triad. After it intersects with the Bubble Pond carriage road, the trail's character changes, with steep climbs as it rises toward Cadillac's South Ridge Trail and joins with Canon Brook. 1.5 miles/65 minutes.
- Pemetic South Ridge (M) A somewhat steep trail providing outstanding views. Trailhead: Off the Bubble and Jordan Pond Trail, .5 mile from Jordan Pond. 1.2 miles/65 minutes

Bubble Rock/Bubble Pond Area

- Pemetic Northwest Trail (S) is a steady climb through dense forests with few views. Trailhead: Across from Bubble Rock Parking/.5 mile/40 minutes.
- Cadillac West Face Trail (S) steeply climbs up Cadillac Mountain's western slope from the eastern shore of Bubble Pond to connect with other Cadillac Mountain trails. Trailhead: East side of Bubble Pond/1.4 miles/85 minutes.
- Connors Nubble (M) rises 588 feet above Eagle Lake and offers stunning views of Eagle Lake to the north and the Bubbles to the south. Trailhead: 1.3 mile from the Eagle Lake Trailhead or 1 mile from the carriage road junction #7/.6 mile/30minutes.
- Eagle Lake Trail (M) follows the southwest shore of Eagle Lake terminating at Eagle Lake carriage road's west side. Trailhead: from carriage road junction # 7/1.3 miles/45 minutes.
- The Bubbles Trail runs 2 miles between Eagle Lake and Jordan Pond over the North and South Bubble Summits. Trailheads are located at both ponds. The ascent from Jordan Pond is steep and strenuous. Hikers with hesitancy about heights should carefully consider whether to take this route. North and South Bubble Summits can be reached from the Bubble Rock Parking lot via the Bubbles Divide Trail. In .3 miles the Bubbles Trail departs to the right, .3 miles to North Bubble Summit. One tenth of a mile further up the Bubbles Divide Trail the Bubble Trail departs to the left .3 miles to the South Bubble Summit. Bubble Rock, a large glacial erratic, is on South Bubble.
- Pemetic North Ridge Trail (S) is wooded with open areas toward the summit. Spectacular ocean views appear before dropping toward the Pond Trail along the Pemetic South Ridge Trail. Trailhead: Bubble Pond parking/1.3 miles/65 minutes.

Cadillac Mountain Area

- Cadillac West Face Trail (S) is a steep and strenuous trail that joins Bubble Pond to the South Ridge of Cadillac Trail. Trailhead: from South Ridge of Cadillac Trail/ 1.4 miles/85 minutes.
- The Gorge Path (S) connects Cadillac Mountain Summit with Dorr Mountain trails. Trailhead: eastern side of the Summit Path behind the Bar Harbor Interpretive sign/.4 mile/15 minutes.
- Cadillac North Ridge Trail (M) trailhead is at the northern corner of the parking lot.
- South Ridge of Cadillac Trail (S) is one of the longest trails in the park over a gradual climb to the summit of Cadillac at 1530 feet. Other trail options from the South Ridge Trail include Canon Brook, The Bubble and Jordan Ponds Path, and other Cadillac Mountain trails. Trailhead: from Cadillac Summit is behind the gift shop; from Route 3 across from Blackwoods Campground or from within campground.
- Summit Path (E) is a 1/2-mile paved path around the summit of Cadillac Mountain offering panoramic views of the Acadian archipelago. Note that the trail does have a descent and climb with some steps. Although rated as easy, it is not suitable for some visitors. 15 minutes.

Brown Mountain/Parkman Mountain

Trailheads from Maine Route 198:

- Giant Slide Trail (S) is one of the most strenuous mountain trails in the park leading up Sargent Mountain. Trailhead: 1.1 miles from the junction of Route 198 and 233 /2.5 miles/105 minutes.
- Sargent Northwest Trail (M) provides a more moderate climb to Sargent's summit from the Giant Slide Trail. Trailhead: same as Giant Slide Trail/2.3 miles from route 198 /150 minutes.

Trailheads from Parkman Mountain Parking Lot—off State Route 198:

- Parkman Mountain, Bald Peak, and Gilmore Peak Trails (M) offer open views from their rounded rocky peaks and connections to trails on Sargent Mountain. Trailhead: Take carriage road to the right; at carriage road junction #13 turn left about .2 mile for trailhead 1 mile/50 minutes.
- Grandgent Trail (S) is a challenging trail to Sargent Mountain summit leading up Sargent Mountain's west slope. From trailhead on Sargent Mountain summit it is 1 mile to Giant Slide Trail/35 minutes.

Trailheads from Norumbega parking pull-off—off State Route 198:

- Maple Spring Trail and Hadlock Brook Trail (S) run parallel to each other through steep wooded areas that are rocky and rough before opening toward Sargent Mountain's summit. Trailheads: east side of Route 198; 2.7 miles from intersection with Route 233 2 miles/90 minutes.
- Norumbega Mountain Trail (S) is fairly level along the base of Norumbega, but then rises steeply to reach the summit. Norumbega's South Ridge Trail returns to Lower Hadlock Pond. 2.5 mile/90 minutes.

Trailheads from Brown Mountain Parking Lot—off of State Route 198:

- Lower Hadlock Pond Trail (M) connects trails for hikes to Upper Hadlock Pond or Norumbega Mountain. Trailhead: across Maine Route 198 from Brown Mountain Gatehouse 1.4 mile/65 minutes.
- Sargent Mountain South Ridge Trail's (M) steady climb offers views of the valley between Sargent and Penobscot as well as some ocean views. Trailhead: Take carriage road to the right. At carriage road junction #18, turn right. At carriage road junction #19 turn right. Trailhead is .7 miles from parking area 3.1 miles/ 1.5 hours minutes.

Acadia Mountain/St. Sauveur/Beech Mountain Area

Trailheads from Acadia Mountain Parking—west side of Route 102:

- Acadia Mountain's (S) steep climb and descent and east-west ridge trail offers outstanding views of Somes Sound, the island's eastern mountains, and Beech Mountain. Trailhead: across from the parking area/2.5 miles/90 minutes.
- St. Sauveur via Ledge Trail (M) climbs through a densely shaded forest, then meets with the St. Sauveur Trail and continues on to the summit. Trailhead: from Acadia Mountain trailhead/.8 miles/40 minutes.
- Valley Cove Trail (S) continues from the Acadia Mountain trail at the east end of the Man O'War Brook Fire Road. Sections of jumbled talus make this coast-hugging trail

challenging before rising to meet the Valley Cove Fire Road. Can continue along Valley Peak Trail and St. Sauveur Trails back to Acadia Mountain parking. Trailhead from east end of Acadia Mountain Trail at junction with Man O'War Brook Fire Road 2 miles/70 minutes.

Trailheads from St. Sauveur Parking—east side of Route 102:

- St. Sauveur Mountain Trail's (M) gradual climb through spruce forests and occasional open slopes joins the Ledge Trail before reaching the summit. Views from the summit are limited. 1.3 miles/55 minutes.
- Valley Peak Trail (S) offers limited views from its east side until approaching the ridge line along Eagle Cliff, above Valley Cove. From St. Sauveur's summit, this strenuous and steep trail skirts along precipitous Eagle Cliff and then drops to the Valley Cove Fire Road. Trailhead: From the St. Sauveur Mountain Trail .8 miles/ 45 minutes.

Trailheads from Echo Lake:

- Beech Cliff Trail (L) is a ladder trail ascending the steep-sided granite cliffs on the west side of Echo Lake. NOTE: Hikers with hesitancy about heights should carefully consider before attempting this route. Beech Cliff Trail rises quickly through a steep ravine via a series of ladders, metal rungs, and stone steps. Check hiking map or guide for easier return route. Trailhead: behind ranger house in Echo Lake parking lot .5 mile/40 minutes.

Trailheads from Beech Mountain Parking Lot (off of Beech Mountain Road; 2/10 of a mile west of Somesville Fire House on State Route 102):

- Beech Mountain (M) is a summit with an addition; a fire tower that once served as a fire lookout for points between Frenchman Bay and Blue Hill Bay. Two forks of the trail provide different views. The trail to the left quickly ascends the mountain over granite ledges. The north fork continues straight offering outstanding views of Long Pond before reaching the summit. 1.1 miles/45 minutes.
- Beech Mountain South Ridge Trail (M) follows the southern flank of Beech Mountain over open ledges and shaded woods, connecting the summit with the Valley Trail. Trailhead: Either from Beech Mountain summit or from Long Pond Service Road .9 mile/45 minutes.
- Beech Mountain West Ridge Trail (M) descends along the mountain's west ridge and then follows Long Pond's shoreline before ending at the Long Pond pump house. Trailhead: From Beech Mountain summit or Long Pond Road at pump house. 1mile/45 minutes.
- Canada Cliffs Trail (M) at the top of Beech Cliff offers views of Echo Lake and access to the Valley Trail. Trailhead: Across from the Beech Mountain parking lot. .9 miles/45 minutes.
- Valley Trail (M) traverses area between Canada Cliffs and Beech Mountain, ending at Long Pond Road. Trailhead: South end of Beech Mountain parking lot 1.2 mile/ 50 minutes.

Seawall Area

Trailheads off Maine Route 102A:

- Ship Harbor's (M) trail winds through various Acadian habitats such as spruce forests, open ledges of huckleberry and blueberry, rocky shoreline, and mud flats. Visitors to Ship Harbor at low tide can enjoy a variety of shorebirds that fish and pluck meals among the mud flats. The first half of the trail is wheelchair accessible. Trailhead: off of Route 102A, 2 miles from Seawall Campground 1.3 miles/45 minutes.
- Wonderland's (E) wide pathway leads hikers through spruce forests and open rock ledges scattered with pitch pine before arriving at a rocky shoreline and cobble beach. Rugosa roses clumped along the coast release their heavy perfume to mix with the salt air. The trail is considered wheelchair accessible although there are a few rough spots from roots and loose gravel. Assistance may be required. Trailhead: off of Route 102A, .9 miles from Seawall Campground 1 mile/30 minutes.

Western Mountains

- Bernard Mountain South Face Trail (S) travels through a beautiful spruce and fir forest with occasional views of Blue Hill Bay to reach Bernard Mountain's summit Trailhead: Western Mountain Fire Road 1.7 mile/80 minutes.
- Cold Brook Trail (E) connects the southern end of Long Pond with Gilley field around the base of Mansell Mountain. Trailhead: South end of Long Pond/.4 mile (to Gilley field)/20 minutes.
- Great Notch Trail (M) meanders through the notch between Mansell and Bernard, offering access to other trails. Trailhead: Gilley Field/1.1 mile (to Great Notch)/45 minutes.
- Great Pond Trail (M) hugs the shoreline of Long Pond for two miles before turning abruptly and rising toward Long Pond Fire Road. Trailhead: south end of Long Pond/4 miles one way/3-1/2 hour roundtrip.
- Perpendicular Trail (S)/Razorback Trail combine to climb over Mansell Mountain offering views of the valley between Mansell and Bernard Mountain. Both trails are appropriately named. Trailhead: south end of Long Pond 3.7 mile loop/2 hours.

Rock Climbing

Acadia National Park offers a variety of fine climbs on small cliffs created during the last continental glaciation. Most of these cliffs are composed of solid coarse-grained pink granite. The longest routes are 3 pitches. Otter Cliffs and Great Head provide a spectacular setting for sea cliff climbing not commonly available elsewhere in the United States.

Safety

Climbers assume responsibility for personal safety. On some routes local climbers maintain fixed protection or rappel stations. Evaluate them before using. At Otter Cliffs, the park maintains fixed anchors on top that must be used instead of trees to belay several climbs. Evaluate them before using also, and notify the park immediately of safety concerns. Climbers at Great Head and Otter Cliffs should know tides and weather forecasts; climbing at these areas is more difficult and dangerous at high tide or in heavy seas. Climb within your limits.

Instruction/Guiding
Climbing instruction and guiding are available locally in Bar Harbor from Acadia Mountain Guides and Atlantic Climbing.

Guidebooks
Jeff Butterfield's Acadia: A Climber's Guide is the most up to date and comprehensive source.

Commonly Used Climbing Areas
- Otter Cliffs: 60' sea cliffs, crack and face climbing, rappel access, routes up to 5.12, good beginner routes, know tides and weather.
- Precipice (Center, Left, Right, and Lower Walls): up to 3 pitch routes to 5.12, good corners and thin cracks, some good beginner routes.
- South Bubble: 1-3 pitch routes, some friction climbing, good beginner routes.
- Great Head: high grade sea cliff climbing, rappel access, know tides and weather.
- Many other small areas are used infrequently and good bouldering can be found along the ocean between Sand Beach and Otter Cliffs, and near Blackwoods Campground.

Management
Between 1995 and 1997 a climbing management plan was developed with public input and it continues to guide climbing management today. Development of this plan, along with legislative mandates and NPS policy, helped formulate the regulations and guidelines listed here. As an important part of climbing management, a climbing advisory group consisting of climbers, park staff, and others makes recommendations to the superintendent on climbing issues. The advisory group works through the existing Acadia National Park Advisory Commission. For further information call the park at 288-8727.

Acadia National Park Climbing Regulations
Daily Use Logs: Climbers are asked to sign daily use logs at Otter Cliffs, Canada Cliffs, South Bubble, and the South Wall of Champlain. This helps monitor the volume of climbing use. Otter Cliffs receives at least 3,200 climbers annually and for the South Wall it's 1,400 climbers.

New Route Development: New Route Development is defined as installing fixed protection such as bolts and pitons, or cleaning routes. Route cleaning is the systematic and comprehensive removal of soils and vegetation from climbing routes. As defined, New Route Development is permitted only with the prior approval of the superintendent and only at the Precipice (Center, Right, Left, Lower, and Parking Lot Walls) Jordan Cliffs, Beech Cliffs, Canada Cliffs, Great Head, Dorr Mountain (pinnacle), Enoch Mountain (upper area) and Mansell Mountain. The climbing advisory group reviews new route development proposals and makes recommendations to the superintendent. If approved, climbers will be issued a permit that covers fixed protection, route cleaning, and the use of a power drill. The advisory group also reviews proposals for the replacement or removal of fixed protection. New routes without fixed protection or route cleaning may be established freely. Effects of these new routes should be similar to those of a cross country hiker—no blazing or clearing of a trail, and largely incidental (not deliberate) effects from passing through. Removal of soils or vegetation from these new routes should be the minimum.

Groups: A maximum size of 12 persons, including guides, applies throughout the park to all organized climbing groups. Groups of friends are not considered organized groups. Groups must make reservations for Otter Cliffs from Saturday of Memorial Day Weekend through Labor Day. Two groups per day may reserve Otter Cliffs. Organized groups of five persons or less do not need reservations.

Commercial Use: Any group or person offering instruction or guiding services in the park for a fee must obtain a Commercial Use Authorization permit (36 CFR 2.15a). Call 288-8705.

Dogs: Dogs are prohibited at climbing areas to the extent that they may not be tethered or allowed to run loose while their owner is climbing (36CFR 2.15 a). Dogs must be leashed and attended at all times. Dogs can harass wildlife, disturb other visitors, damage vegetation, and accelerate erosion by digging in the soil.

Closures: The Precipice Parking Lot Wall, Jordan Cliffs, and Beech Cliffs are usually closed to protect nesting peregrine falcons between early April and mid-August. Exact dates will vary annually (36 CFR 1.5).

Low Impact Guidelines

- Avoid using trees for belays to prevent continued soil erosion, especially at Otter Cliffs.
- Use established access trails and walk on solid rock to reduce impacts to soils and vegetation.
- In May and June, black guillemots nest at Otter Cliffs. Check for them, and consider using other routes.
- Social trails proliferated on top of Otter Cliffs because climbers are using vegetated areas as toilets. A vault toilet is available in the Otter Cliffs parking lot. Please use it.

Acadia National Park Group Climbing Reservation Information

For Otter Cliffs

The Acadia National Park Climbing Management Plan, completed in 1997, recommended a reservation system for organized groups climbing at Otter Cliffs. Otter Cliffs is popular with organized groups for introducing clients to rock climbing. A spectacular oceanfront setting, easy access, and beginner routes all contribute to this popularity. The Climbing Management Plan described damage to soils and vegetation and problems with crowding at Otter Cliffs. Some of the damage and crowding was due to several groups arriving to climb on the same day. Also, the number of climbing routes, especially beginner routes, is limited. The goal of the reservation system is to spread this group use out across the days of the summer to protect resources and provide a better experience for group and individual climbers.

Reservation Information

Reservations are required for organized commercial and noncommercial climbing groups wanting to climb at Otter Cliffs. They are not needed for groups of friends climbing together. The reservation season will run from Saturday of Memorial Day weekend to Labor Day. Two groups of up to twelve persons, including any guides or instructors, will be accommodated per day. Organized groups of five persons or less do not need a reservation for Otter Cliffs. Organizations will be limited to 10 days of climbing between the above dates. The group size

limit of 12 applies to ALL climbing groups using any park climbing areas at any time of year. The purpose of this size limit is to reduce the effects of large groups on park resources and the climbing experience. Your cooperation is much appreciated.

Reservation Procedures

Complete a separate reservation request for each day you wish to climb. The form can be requested by calling the park at (207)288-3338. There are no fees. Reservations can be sent by mail or fax, postmarked or faxed March 15 or later. Mail or faxes postmarked or sent earlier than March 15 will be discarded without action. Reservations can also be made in person at park headquarters beginning March 15. Telephone requests will not be accepted. A lottery system will be used to process requests by the date received. We will then notify you by mail of the status of your request. You may call (207)288-3338 Monday through Friday 8am–4:30pm to check availability of dates and for general climbing information. On weekends or holidays, you may leave a message at (207)288-8791. An Otter Cliffs climbing reservation does not authorize the exclusive use of any climbing routes. Group leaders are expected to contact other climbers about sharing routes. They are also expected to use extreme courtesy when dealing with other groups that may not be aware of the reservation system. If there is a conflict, work out an appropriate on-site solution together and tell the leader to contact the park. You should then contact the park also. We can suggest other climbing areas suitable for groups. Thank you for your cooperation.

Note: Group leaders should approach other climbers proactively about sharing routes.

ACADIA'S LANDSCAPE

Diversity

Diversity is the key word when referring to the natural features of Acadia National Park. While many parks have been established to highlight and protect a very specific natural feature, visitors to Acadia experience a wide diversity of ecosystems and biological communities. With elevation in the park ranging from 1,530 feet to sea level, animals and plants inhabit zones from sub-alpine to intertidal. Ocean, mountains, lakes, streams, wetlands, forests, meadows, and beaches are all found within the roughly 49,000 acres of Acadia, and each feature makes a unique contribution to the natural tapestry.

Mountains and Valleys

At first glance Acadia's mountains and U-shaped valleys are one of the Island most impressive features, especially for those arriving by water. 17 mountains rise from the sea and comprise much of the island on which a portion of Acadia National Park is located. Historically, a landmark for mariners, the rounded mountains and U-shaped valleys are telling of Acadia's geology and glacial history. The mountains were built up by tectonic and volcanic forces, and scraped down and shaped by a succession of glaciers. The land sank beneath the weight of mile deep ice as glaciers inexorably ground their way toward present day Georges Bank, Long Island, and Cape Cod. As the glaciers receded, they filled the valleys surrounding the mountains with meltwater. There are 26 lakes and ponds create by meltwater. Looking at a park map it's easy to see the north to south movement of the glaciers by noting the north/south orientation of the long finger like lakes and ponds as well as the more gradual slopes of the mountain ridgelines. Cadillac Mountain, at 1,530 feet, is the highest point along the North Atlantic seaboard of the United States. From October 7th to March 6th, the sun touches the slopes of Cadillac Mountain before any other place in the United States. For further information on Cadillac Mountain see Cadillac Mountain In-depth

There are 26 mountains in Acadia National Park:

Acadia (formerly Robinson) – 681'
Bald – 974'
Beehive – 520'
Beech – 839'
Bernard of Western – 1,071'
Cadillac (formerly Green) – 1,530'
Cedar Swamp – 942'
Champlain (formerly Newport) – 1,058'
Day – 580'
Dorr (formerly Flying Squadron and Dry) – 1,270'
Flying – 284'
Gilmore – 1,036'
Gorham – 525'
Huguenot Head (formerly Picket) – 731'
Mansell of Western – 949'
McFarland – 724'
North Bubble – 872'

Norumbega (formerly Brown) – 852'
Parkman (formerly Little Brown) – 941'
Pemetic – 1,248'
Penobscot (formerly Jordan) – 1,194'
Sargent – 1,373'
South Bubble – 766'
St. Sauveur (formerly Dog) – 679'
Triad – 698'
Young's – 680'

George Dorr, the park's first superintendent, changed many of the mountain names in 1918.

Lakes & Ponds

Twenty-six lakes and ponds dot the Acadia landscape ranging in size from a few acres to almost 900 acres. Some are located entirely within Acadia National Park's boundaries while others are shared with private landowners and local communities. Numerous streams, both seasonal and permanent, run through the park, feeding many of the lakes, ponds, and marshes. Acadia's lakes and ponds are stocked with fish by the Maine Department of Inland Fisheries and Wildlife. This is because legislation, The Great Ponds Act, in the 1600s gave the state (then part of Massachusetts Bay Colony) jurisdiction of waters greater than 10 acres in size.
Each year, from late April through October, park staff and trained volunteers sample many of Acadia's 22 named lakes and ponds to characterize water quality conditions as part of the park's water monitoring program. Monthly monitoring allows biologists to detect changes in water chemistry that can result from increased nutrient input (from sources such as road run-off) and acidic precipitation.

Ponds of Greatest Interest

Bubble Pond is 32 acres in size and 30 feet deep. Bubble Pond is a lovely destination located in a small glacial valley flanked by Cadillac and Pemetic Mountains. Afternoon winds often howl between these two mountains and can create a wind tunnel effect, turning a boater's leisurely paddle into an interesting adventure. The pond is stocked with brook trout by the Maine Department of Inland Fisheries and Wildlife. In the late 1800s, an outbreak of typhoid traced to local wells in both Bar Harbor and Northeast Harbor pushed the towns to consider the island's interior lakes and ponds as public water supplies. Bubble Pond, like Jordan Pond and Eagle Lake, is a public reservoir with swimming prohibited. A parking area along the pond's edge caused concern about the safety of the drinking water, so in the 1980s the lot was moved 200 feet away from the pond to keep oil, particulates from automobile exhaust, and other pollutants from running into the water. The park monitors the pond for water quality.

Eagle Lake is 436 acres in size and 110 feet deep at its deepest point. Visiting artists in the mid-1800s painted the sublime scenery of this large lake, bestowing the name Eagle Lake upon it, in reference to eagles soaring above its clear waters. In the late 1800s, a small steamship plied these waters, transporting visitors to the base of Green Mountain (Cadillac) to ride the Green Mountain Cog Railway to the summit. Visitors arrived at Eagle Lake via buckboard and then took the 15-minute trip across the lake on the Wauwinnet. It was a short-lived venture, and after ten years, the Wauwinnett was sunk to the bottom of the lake.

Monitoring records for Eagle Lake's surface temperature and water transparency date back to the early 1980s. Data shows that the water quality in the lake has remained fairly consistent. Long-term data records will help park staff detect water quality trends and identify pollution sources. Protecting Eagle Lake's water quality is especially important since it is Bar Harbor's municipal water supply. It is also enjoyed by many sportsmen, and is periodically stocked with togue, landlocked salmon, and brook trout by the Maine Department of Inland Fisheries and Wildlife.

Jordan Pond is Acadia's deepest lake at 150 feet and is the fifth largest at 187 acres. Despite the protection afforded by the state and Acadia National Park, there is concern that influences from outside sources, such as air pollutants, acidic deposition, and even potential climate change could adversely affect the ecosystem's integrity. Through annual water quality monitoring during the warm weather months, critical baseline data is analyzed to indicate potential changes.
Jordan Pond's clear waters lack a productive food chain to sustain a strong fishery, although some species of fish are found. These include brook trout, the only native fish on the island, and land-locked salmon and togue, stocked sporadically by the Maine Department of Inland Fisheries. Occasional sightings of beavers, loons, and mergansers reward the patient observer.

Maximum Depth

Aunt Betty Pond – 7'	34 acres
Beaver Dam Pond – 13'	
The Bowl – 29'	
Bubble Pond – 39'	32 acres
Eagle Lake – 110'	436 acres
Echo Lake – 66'	237 acres
Jordan Pond – 150'	187 acres
Halfmoon – 20'	3 acres
Hodgdon Pond – 22'	35 acres
Lake Wood – 11'	16 acres
Long Pond – 113'	897 acres
Lower Breakneck Pond – 21'	8 acres
Lower Hadlock Pond – 40'	39 acres
Round Pond – 19'	16 acres
Sargent Pond – 14'	
Seal Cove Pond – 44'	283 acres
The Tarn – 5'	8 acres
Upper Breakneck Pond – 12'	9 acres
Upper Hadlock Pond – 37'	36 acres
Witch Hole Pond – 33'	28 acres

Wetlands

Water runs readily off the slopes contributing to the lakes, ponds and wetlands. Wetlands are found in more than just valley areas. Over 20% of Acadia National Park is classified as wetland. All classes of wetlands (marine aquatic beds, intertidal shellfish flat, salt marshes, freshwater marshes, forested wetlands, and peatlands) are found within the park. They form the

transition between terrestrial and aquatic environments, and contribute significantly to the health, productivity, and uniqueness of the region. The freshwater wetlands of Acadia National Park and Mount Desert Island are living communities that are still in the process of formation. In a hundred years, many of them will look different than they do today. The Tarn and Aunt Betty Pond, for instance, are filling in and emergent wetland plants such as arrowhead, bayonet grass, and pickerelweed make the two ponds look like green meadows in late summer. See wetland plants for more info.

Freshwater wetlands provide habitat for three groups of plants and wildlife: (1) upland species that can tolerate wetland conditions including white pine, white-tailed deer, garter snakes, as well as frog and salamander species that breed in flooded wetlands in spring; (2) aquatic species including snapping turtles, otters, and water striders that can survive in wetland pools; and (3) species that live predominantly in wetlands including cattails, muskrat, beaver, and pickerel frogs.

The Park Loop Road provides numerous opportunities for viewing Acadia's mountain and valley / wetland landscape. A few areas include:

- Great Meadow: The wetlands lie between Champlain/Huguenot (left) and Dorr (right).
- Otter Cove: The cove was once a valley and rising from it are Cadillac (left) and Dorr (right) Mountains.
- The Jordan Pond Tea House lawn: There is a classic view across Jordan Pond of the Bubbles. Penobscot Mountain is on the left and Pemetic is on the right.
- Cadillac Mountain Road and Summit: Panoramic views

Rugged Coast

In addition to the mountains and U-shaped valleys, the rugged coastline is also an icon of Acadia National Park. Relieved of the great burden of the ice, the land slowly rebounded. The resilient land continued to rise relative to the sea until about 10,000 years ago, when it finally stabilized. Since that time, the level of the sea worldwide has risen to its present height, and continues to rise at a rate of about two inches per century. Visitors can image how the sea rose and depressed land mass created a "drowned coast." This means that what appears today as arms and fingers of the sea were once river valleys; islands were the tops of mountains; headlands and peninsulas were rocky ridges. Each headland, bay, and inlet reveals the majestic interface between sea and land. Acadia's rocky headlands bear the brunt of enormous energies unleashed in waves that batter cliffs and erupt in lofty spray.

The sea constantly reinvents the coastline of Acadia National Park. Waves and currents take material from one point on the coast, only to deposit it somewhere else. Cobble beaches are created in this manner, as rocks are dislodged and smoothed by the force of the ocean then placed on another section of shoreline. Because Acadia's coast is young, sandy shores are rare. However at Sand Beach, the park's largest feature of this type, shore currents have shifted the tons of sand that the sea eroded from the rocks. Mixed into the sand are broken bits of shells and the skeletons of crabs, mussels, sea urchins, and other marine life.

Although it's always dramatic, the landscape along the coast changes with the tide and sea conditions. Around Acadia National Park, the tide has a general fluctuation of 8 to 12 feet twice

daily (reaching 14 feet at certain times). When the tide is low, more of the rocky coast is exposed. There are five different zones. The lower the tide the more zones will be revealed. See intertidal exploration for further information. When the tide is high visitors can experience the impressive nature of the ocean. Many visitors hope to see the crashing surf and hear the "thunder" of Thunder Hole. The surf will be crashing when the seas are rough. The force of the surf can be enhanced with the great volume of an incoming tide. The amount of water entering Thunder Hole is greatest 2-3 hours before high tide.

There are numerous places to enjoy the rugged coastline:
Ocean Drive between Sand Beach and Otter Cove is the most popular. Views continue intermittently beyond this point until the one-way section of the PLR turns away from the coastline.

The southwest portion of the park between Seawall and the Bass Harbor Head Light offers views and walks to the coast on the southwest tip of the island.

Of the 2500 miles of coastline in Maine, only 150 miles are protected. Twenty-five percent of those are found at Acadia National Park. Considering the congestion that this section of the park experiences, especially in July and August, protection is challenging here. Millions of visitors plus vehicle exhaust add more stress to the plants and animals already living along the island's edge. Riding the Island Explorer bus instead of using individual vehicles is one answer to the congestion and exhaust problem. Visitor compliance to remain on trails lessens erosion and the impact of visitation on fragile plant communities living on granite ledges.

ACADIA'S GEOLOGY

Acadia's landscape is the product of great expanses of time. Massive geologic forces — mountain building, molten magmas, and huge ice sheets—formed the landscape, while the persistent forces of erosion—water, wind, and waves—ever so slowly continue to shape what we see today, leaving a record of Acadia's geologic past written in the rocks.

Bedrock Foundations

The landscape that we know as Acadia had its beginnings more than 500 million years ago, when mud, sand, and volcanic ash were deposited in an early ocean. With time, forces deep within the earth buried, heated, and squeezed sediments into Ellsworth Schist, a metamorphic rock characterized by contorted, thin bands of white and gray quartz and feldspar, and green chlorite. It is the oldest rock known in the Mount Desert Island (MDI) region. The combined forces of erosion and the shifting of the rigid plates that make up the earth's crust (tectonics) brought the deeply buried Ellsworth Schist to the earth's surface. Approximately 450 million years ago, it formed the floor of an ocean which accumulated sand and mud. With enough time and pressure, fine-grained deposits eventually cemented together to form the sedimentary Bar Harbor Formation, a sequence of brown to gray bedded, or layered, sandstone and shale.
A complex series of events involving plate tectonics followed, leading to the intrusion of several different types of molten, or igneous, rocks into the older Ellsworth Schist and Bar Harbor Formation. Most of the igneous rocks in Acadia are intrusive (cooled beneath the earth's crust) and are classified as granite, gabbo, diorite, or diabase. The exact assortment of minerals in igneous rock is determined by the chemistry of the magma. Crystal size is primarily a function of cooling speeds where fine grained rock (small mineral crystals) cooled quicker than large grained rock (large mineral crystals). Igneous rocks with different mineral combinations and crystal sizes have different names.

The oldest of Acadia's igneous rock is a gabbro. This rock is dark in color, and is made up of iron-rich minerals. In contrast to the dark, fined grained gabbro, granite (often light pink, white, or grey) has less iron, more silica, and often cools slow enough so that the individual minerals are visible to the naked eye. One of the oldest granites to appear was the Cadillac Mountain Granite, the largest granite body on the island. About 420 million years ago, magma oozed up through existing rocks, stressing and fracturing the overlying bedrock and causing large chunks to fall into the molten magma body. Some chunks of bedrock melted in the intense heat, while others were suspended in the magma. When the granite cooled deep in the earth these blocks remained, surrounded by crystallized granite. This region of granite and broken rock, called the shatter zone, is still visible as a ring around the Cadillac Mountain Granite. Because their mineralogy is so similar, the granites on MDI are identified by the size of individual mineral grains and the composition of the scattered dark minerals present. For example, a medium-grained rock called the Somesville Granite formed to the west of the Cadillac Mountain Granite and has a noticeably lighter color and finer texture.

Later volcanic activity injected diabase, a fine-grained, black, igneous rock along fractures in the granites and surrounding rocks. These narrow bands of intrusive rock, or dikes, can be seen as dark stripes (a few inches to several feet wide) along the Cadillac Mountain summit road and on Schoodic Peninsula. Diabase, basalt, and gabbro are similar in composition but formed

differently, basalt erupts onto the surface, diabase cools underground, and gabbros form deeper still.

Not all of the igneous rock in the area is intrusive (cooled inside the earth's crust). Sometime between the deposition of the Bar Harbor Formation and the intrusion of the granites, volcanoes erupted in the region. Volcanic flows and ash accumulated in the ocean basin, and formed the light-colored Cranberry Island volcanics. Mineralogical analysis suggests that this extrusive igneous rock (cooled outside the earth's crust) is closely related to the magma of the Cadillac Mountain granite.

Little record of the following several hundred million years remains. Since we know granite can only form deep in the earth, we know there must have been several thousands of feet of rock that once covered the large granite bodies. Granite is a very strong rock. Erosion removed much of the softer rock the covered and surrounded the granite, leaving behind resistant granitic mountains ringed by lowlands.

Odyssey of Ice

Evidence from many parts of the world suggests that a succession of 20-30 ice sheets flowed across northern North America during the last two to three million years. A glacial cycle lasts approximately 100,000 years: 85,000 of which involves ice and 10-15,000 of which is interglacial. It has been suggested that we are approximately 10,000 years into an interglacial period. There is approximately 3-6 degree difference in temperature between the height of an ice age and the height of an interglacial period. (Scientific evidence of global climate change demonstrates that temperatures fluctuations related to human activity over the past several hundred years have added to the natural fluctuation of the earth's climate.) Each glaciation removed traces of previous ice sheets, leaving a record of only the last ice sheet to move through the region. Land forms we see today are the cumulative effect of all glaciers. The general orientation of Acadia's mountain ridges, valleys, and elongated lakes and ponds along a north- south axis is linked to the powerful "rivers of ice" that flowed like pancake batter across North America from the Hudson Bay area.

Mile-high glaciers further eroded and rounded existing mountains and cut broad U-shaped valleys where narrower V-shaped river and stream valleys had once been. Materials carried at the base of the ice polished the mountains, and left long scratches (striations) and crescent-shaped gouges (chatter marks) in many places. The most recent episode, called the Wisconsin Glaciation, reached its maximum extent about 25,000 years ago with its terminus hundreds of miles to the south of Maine. As the climate warmed, more ice melted in the warmer months than accumulated in the winter. Although ice continually flowed south from more northern portions of the ice sheet, the front of the glacier began to melt and recede, exposing deposits of material carried by glaciers. Accumulations of rock, gravel, and sand dammed valleys. Boulders carried 40 miles or more were left behind by the melting ice. These glacial erratics are found in valleys and on mountain tops. A carpet of glacial debris was spread out upon the landscape. The vast weight of the ice depressed the land surface, so that in Maine's coastal region the melting of ice was accompanied by an invasion of the sea. Marine waters covered the lowlands and created islands of Acadia's mountains. Beaches and sea caves formed around 240 feet above the present day sea level. Fine-grained material settled out of the sea, and draped low

areas with a layer of marine mud. With the continued recession of the ice, the land surface rose and stabilized. Lakes, such as Jordan Pond, formed in valleys dammed by ridges of glacial debris. Rivers and streams carved new drainage paths, and plants and animals colonized the uncovered land.

Today

The varied landscape of Acadia is the result of continuing geologic processes. You can witness erosion in action anywhere granite is exposed. Large joints, or fractures, in the rock often form parallel lines, or even rectangular blocks. The joints enlarge and expand when water trickles in and freezes. Plants can send roots down into the cracks and speed up the process. Eventually the rock breaks away from the cliff leaving behind granitic rubble and bright pink scars on precipitous rock faces.

Although uncommon, recent earthquakes in the area have resulted in large rockfalls, especially visible on the east side of Champlain Mountain. A 4.2 magnitude earthquake and its aftershocks in the fall of 2006 shook loose enough rock to damage and temporarily close several trails. No injuries were reported, although many residents of Bar Harbor felt the shaking and a water main broke in town.

Along the coast, the sweep of tides and waves continually shape the shoreline. Rocky headlands bear the full brunt of the wind and waves of the open ocean. Many different types of beaches are found on Acadia's shores. The size of material composing the beach depends on the energy of the waves which create it. Beaches facing the open ocean and only minimally sheltered by rocky headlands consist of pebbles, cobbles, and even boulders. The stronger the wave action, the larger the material the waves can carry. In the case of a beach open to the storm-driven waves of the Atlantic, only the largest boulders remain.

The source of the beach material varies. In some places, glacial debris is washed in by the waves, and finer material is removed leaving a wide assortment of cobbles and pebbles to be rolled and rounded by the surf. In other places, erosion of the nearby bedrock results in beach material that matches the surrounding sea cliffs. Coves protected from strong wave action are made up of fine-grained material. Salt marshes, rich with life, grow in protected tidal valleys, while beaches occupy sheltered coves. Sand Beach contains the finest sediments of any of Acadia's beaches and is composed primarily of bits and pieces of the shells and hard parts of marine life, such as mussels and sea urchins. The soft sediments of Sand Beach are constantly moved in, out, and around by the tides, waves, and storm surges, sometimes to very dramatic effect.

Park Loop Road Geology

This section provides information about geologic features, in addition to those already mentioned in the general Park Loop Road section, that you that might point out along the drive. Most of Acadia's mountains are made from coarse-grained pink granite. Granite is an intrusive (beneath the earth) igneous rock. As with all intrusive igneous rocks, granite is "born of fire" and formed from magma beneath the surface of the Earth. Magma is a molten rock composed of a mixture of liquid chemical compounds, dissolved gases, and some solids. Perhaps as many as 420 million years ago, a huge molasses like plug formed miles beneath the surface of the

area we know as Acadia today. The magma worked its way up from the mantle of the Earth, melting and displacing the overlying bedrock. In the case of the Cadillac Mountain Granite, it cooled slowly, crystallizing into large mineral crystals of feldspar (pink), quartz (white), and hornblende (black), forming the coarse-grained granite known to anyone hiking Acadia's summits. Other granites on the island may look different depending on their magma composition and cooling speeds. Eons of erosion stripped the other bedrock layers away, eventually exposing the granite.

The Porcupine Islands are glacially sculpted islands of the softer sedimentary Bar Harbor Formation capped with a protective layer of harder diabase. While most of the rock around MDI that wasn't granite got ground down by erosion enough to be covered by the sea, a few resistant peaks of the sea floor rise up as smaller islands.

In contrast to the strong, resistant granite that creates a stable foundation for the majority of Acadia's scenery, the soft sediments at Sand Beach show evidence of constant change. Sand Beach shows dramatic changes from year to year, season to season, and even hour to hour. (See more details about Sand Beach in the Park Loop Road section of this guide.) As the volume and arrangement of sediments on Sand Beach changes, other features in the area are covered or revealed. In the spring of 2007, a single storm removed over 6 vertical feet of sand from the beach, revealing numerous boulders and cutting into the dune grass at the back of the beach. In a few short months, enough sand had been deposited back on the beach so that summer visitors had no idea what had happened. A new fence was constructed to help keep visitor away from the fragile dune habitat. By 2010, the volume of sand on the beach had increased so much that the fence had become completely submerged. Only the tips of the posts remained visible. Variation due to wave action is also evidenced in the sporadic unveiling of a wrecked schooner beneath the sand. In 1911, the Schooner Tay ran aground on Old Soaker, coming to rest on Sand Beach. Over time its deteriorated hull was covered by sand, but on occasion, the schooner's remaining ribs have resurfaced.

Acadia's numerous steep southern cliffs were sculpted by glacial plucking, a process where fingers of ice tore rocks from mountain slopes as the ice sheet advanced southward. As the ice crept up the northern slopes, pressure created a thin layer of melt water at the glacier base. Once over the mountain obstacle, water filled cracks in the granite and refroze. As the ice sheet continued southward, large rocks were "plucked" by fingers of ice from the mountain's southern side. The profile of the Beehive with its sloping northern ridge and steep southern cliff is a text book example of a glacially sculpted feature called a rouche mountonnee, French for "grazing sheep." Sand Beach provides a striking view of this geologic feature that looks like a nice fat sheep with its head down eating grass (with some imagination).

An example of sea level change connected to Acadia's glacial history can be found at an elevation of 240 feet along the Cadillac Cliffs trail off of the Gorham Mountain Trail. The Cadillac Cliffs sea cave is one of many shoreline features found at this elevation around the park.

At Otter Point an example of the shatter zone can be found. The shatter zone encircles the Cadillac Mountain Granite, and marks the contact zone where the hot magma plug and the

overlying cold bedrock met beneath the surface of the Earth some 420 million years ago. This severely shattered and fractured rock is up to a mile wide in some areas. Angular blocks of rock fragments can be found embedded in the solidified granitic mix. The rusty color comes from iron oxide as well as other mineral depositions.

Looking north from the Otter Cove Causeway provides great views up one of many of Acadia's U-shaped valleys and even contains a V-shaped notch where glacial melt water cut a stream channel into the granite between Cadillac and Dorr Mountains.

The Jordan Pond area contains a beautiful collection of glacial features. The deep U-shaped valley between Penobscaot and Pemitic Mountains filled with water to form Jordan Pond, Maine's clearest lake. The southern shore, where the Jordan Pond House sits, is a glacial moraine formed from glacial debris deposits. These deposits form a wall at the southern end of the valley and create a natural dam that holds back the waters of Jordan Pond. The Bubbles' rounded tops, sloping northern sides, and steeply chiseled southern sides show the characteristic glacial sculpting of rouche mountonnee (just like the Beehive). Bubble Rock, visible as a small blip on South Bubble, is a glacial erratic, a rock transported from a distant location and then deposited by the retreating glacier. The large black and white crystals of Bubble Rock contrast with Mount Desert Island's native pink granite. Similar bedrock outcroppings are found 40 miles to the northwest near Lucerne, halfway between Mount Desert Island and Bangor. Although Acadia's landscape is littered with erratics (rocks deposited from glacial ice), this giant boulder, the size of a cargo van, is perhaps Acadia's best known "rock from away."

ACADIA'S PLANTS

Introduction

Acadia's a landscape is brought to life with a surprising amount of plant diversity. In addition to the growing conditions created by the Acadia's geological and glacial history, the park's geographic location in a transition zone between northern and southern environments coupled with its maritime environment of fog and humidity, cooler growing seasons and warmer winters, sustain a representative range of 2500 miles of typical plants of the arctic, Canadian zone, and southern coastal plain. This remarkable accumulation in one area is a unique feature of Acadia National Park.

The park supports over 1100 vascular plant species that represent a wide diversity of plant life adapted to thrive in mostly thin, acidic, low nutrient soils. Grasses and wildflowers abound in park meadows, and lakes and ponds are home to emergent and floating aquatic vegetation. Dense conifer forests dominated by red and white spruce meet hardwoods stands more typical of southern New England. Almost one quarter of Acadia's flora is non-native, reflecting the influence European settlers have had on the landscape. About 25 species are globally, nationally, or locally rare. For a plant checklist, see the Acadia's Plants/Plant Checklist section.

As you and your group explore the beauty of Acadia, you're becoming a part of a long and rich history of botanical exploration in and around Acadia National Park—in fact, one of the oldest and most complete studies in the National Park system. In the late 1880s, students from Harvard University made their way to Acadia from Boston via train and steamship each summer in search of the unique plants found in bogs, on mountain summits, and the many habitats in between. The Champlain Society, as they called themselves, published "Flora of Mount Desert Island, Maine," authored by Rand and Redfield, in 1894.This benchmark publication cataloged vascular plants, mosses, algae, and lichens, and serves as a snapshot of plant life at the turn of the 20th century—a useful tool to study changes over time.

Views along the Park Loop Road

Hulls Cove Visitor Center to Otter Cliff

Hulls Cove Visitor Center to Great Meadow

The fire of 1947 burned 17,000 acres, including 10,000 in the park. The forest today is primarily a birch and aspen forest with pockets of other hardwoods like red oak, sugar maple, and beech. Birch and aspen are able to populate areas after fire because: 1) seeds from the dangly catkins travel easily on the wind, 2) their seeds germinate quickly in full sun, and 3) they are fast growers. Will this forest remain primarily birch and aspen? As a general rule—probably not. Birch and aspen are short-lived trees, and the shade of this forest will limit their seed germination and sapling growth. Red spruce prefers shade for seed cones to germinate, and once having sprouted, the saplings are shade tolerant. This partially explains why red spruce didn't readily grow after the fire, even though seeds were present. Today, red spruce is scattered beneath the deciduous canopy, perhaps waiting its turn to dominate once again. Visitors often ask about the numerous dead white barked trees. These are most likely birch trees which are nearing the end of their natural life span. For further information on fire management see the Resource Management Issues/Fire Management section.

Great Meadow to Otter Cliff
The forest opens up to the marshy Great Meadow, bordered by birch and aspen but filled with sedges, cattails, rhodora, alders, and winterberry. Diversity reigns in Acadia's fresh and salt water wetlands where a wide range of wildlife is supported and half of Maine's state-listed rare plants are found. Many wetlands help to purge water of pollutants and to recharge groundwater sources and reduce flooding by releasing water slowly.

Thunder Hole to Otter Cliff
The rocky shoreline can be an inhospitable environment for many plants. Thin soil, rapid run-off, strong winds, exposure, salt water spray, and minimal fresh water are natural stresses that coastal species must contend with. Those plants that do live here are well adapted to the difficult conditions. White spruce, which prefers cool coastal temperatures, has a shallow root system that can spread over rocky ledges. Bayberry's thick waxy leaves help to conserve moisture. The non-native rugosa rose can spread quickly by shallow underground root runners. This rose was introduced to help stabilize seaside soils in southern New England and the mid-Atlantic centuries ago.

Otter Cliff to Cadillac Mountain Road
This spruce-fir forest is perhaps similar to the one that burned in the fire of 1947 and is typical of Maine forests in much of the northern sections of the state. Red spruce and balsam fir can be distinguished easily from each other by their needles. Red spruce has "spiky" needles; balsam fir has "flat, friendly" needles. Although associated together, red spruce is the dominant species. Along this section of the Park Loop Road, the red spruce trees tower above a forest floor that is almost void of other vegetation. A spruce forest is a world of stillness, dampness, dense shade, and low diversity. Its acidic soil lacks many nutrients and thick needle-covered branches block the sun from reaching the forest floor. These ecological conditions combine to make an uninviting environment for most other species to live. Shallow-rooted trees, the red spruce is susceptible to blow downs, creating a domino effect as one spruce tree knocks over another.

One of the more common animals found in a spruce forest are red squirrels. The remains of shredded red spruce cones, a favorite food of the red squirrel, litter the base of many trees. Like all park wildlife, they should not be fed by park visitors. Visitors who feel obligated to feed animals like chipmunks, red fox, red squirrels, and seagulls only create nuisance animals in the long-run. The end result is the demise of the animal because of its growing dependence on people to feed them.

Summit of Cadillac Mountain
The glaciers scraped the summits bare. Therefore, life is not easy at the top, but the mountains are not as barren as Champlain described. Soil is slowly developing in crevices and sheltered areas. The summits are home to forests of spruce and pitch pine. Tiny subalpine plants, such as cinquefoil, blossom in joints in the granite and on the leeward side of rocks. Squat, gnarled trees may survive winter after harsh winter. During the spring and summer, peregrine falcons have called some sheer mountain cliffs home.

Plant Communities

The major plant communities within Acadia National Park are:

Forest
Maritime spruce-fir
White pine
Northern hardwood (birch-beech-maple)
Early successional forest (aspen-birch)
Mixed forest (coniferous-hardwood)
Woodland
Pitch pine woodland
Red oak woodland
Aspen-birch woodland
Maritime spruce-fir woodland
White pine woodland
Northern hardwood woodland (birch-beech-maple)
Mixed woodland (coniferous-hardwood)
Black spruce woodland
Shrub
Alder thicket
Dwarf shrub bogs
Scrub shrub
Grasslike
Beach dune
Salt marsh
Wetland meadow
Wetlands
Bog
Fen
Marsh

Plant Overview

Forests

When Samuel Champlain first explored the waters near Mount Desert Island, he described the mountain summits as barren and deserted of vegetation. Of course, his observation was from a distance, and had he explored the summits he would have found a rich diversity of plants nestled among the granite. Champlain also noted that the mountain slopes were covered with forests of pine, fir, and birch. Today, ecologists have identified 18 forest types, going well beyond Champlain's account in the early 1600s. Acadia National Park is situated in the transition zone of two ecological regions: the northern boreal forest and the eastern deciduous forest. Much of the park is covered by forests dominated by spruce representative of the boreal influence. Acadia also contains stands of birch, aspen, oak, maple, beech, and other hardwoods more typical of southern New England. Several unique, isolated forest communities, such as pitch pine and scrub oak woodlands, are found in the park at their northeastern range limit. Similarly, jack pine reaches the southern limit of its range in Acadia. Coastal forests are dominated by red and white spruce, white pine-- the state tree of Maine—eastern hemlock, and

low-lying wetlands may support white cedar, black spruce and larch. Acadia's diverse forests provide habitats that support a wide variety of wildlife.

A 17,000-acre fire in 1947 burned a large portion of the eastern side of Mount Desert Island. There is evidence of previous burns found in trees and soils across much of the park. The 1947 fire incinerated topsoil in some areas, and changed the forest on the eastern side of MDI from primarily coniferous to primarily deciduous. Astute observers will see 60 -year-old deciduous woodlands now being replaced with spruce in the understory.

About a quarter of the plants that one encounters at Acadia National Park appear "grass-like." Most people would probably call all of these grasses, but in fact some are sedges and some are rushes. Here is a little rhyme to help tell the three apart: "sedges have edges, rushes are round, and grasses have joints." Sedges usually have a triangular stem, rushes have round stems, and grasses have a jointed stem. Sedges, grasses, and rushes often inhabit wet areas. All have flowers; they just aren't showy. Take a closer look and you will be amazed at the diversity of these wind pollinated wildflowers!

Wetlands

Reflecting their need for water during the growing season, certain species of plants serve as indicators to the availability of water in the freshwater wetlands in which they thrive.

Indicator Species in Acadia's Freshwater Wetlands

- Permanently Flooded Wetlands: white water lily, spatterdock, pondweeds, floating heart
- Semi-permanently Flooded Wetlands: bur reeds, bayonet rush, pickerelweed, common arrowhead, common pipewort
- Seasonally Flooded Wetlands: cattail, tussock sedge, marsh fern, mountain holly, wild raisin, red maple
- Wetlands with Seasonally Saturated Soils: pitcher plant, white beak rush, leather leaf, sphagnum moss.

Freshwater Plants

Approximately 80 species of freshwater ("aquatic") plants can be found in the park, with another dozen species considered semi-aquatic, growing along shorelines. Seven of these aquatic or semi-aquatic species are either currently listed or proposed for listing on Maine's Official List of Endangered and Threatened Plants, while about 30 others are considered "locally rare."

Some freshwater plants grow completely submerged. Others are rooted in the lake- bottom, but their leaves or flowers may be on or above the water's surface. These are respectively known as "floating" and "emergent" vegetation. Freshwater plants provide shelter and nesting sites for a variety of fishes and other animals, and serve as an important food source for mammals, waterfowl, and turtles.

Shrubs

Some of the most popular plants at Acadia National Park fall into the shrub category. Blueberries, both highbush and lowbush, cover mountain slopes and entice many visitors to snack while hiking during July and August. Other berries, like raspberries and blackberries can

be found in open areas. The rugosa rose, with its perfume smell, dominates many areas along the coast. In June, sheep laurel opens its small five-sided cup-like pink flowers, held in small umbels just below the plant's new growth for the year. Sweet fern, aptly named due to its overwhelming scent when leaves are crushed, is found along the edges of carriage roads and other open areas.

Wildflowers

If you are in a wooded area of Acadia National Park, you are likely to find common, native woodland flowers, such as wild lily-of-the-valley (Maianthemum canadense), bunchberry (Cornus canadensis), goldthread (Coptis trifolia formerly C.groenlandica), bluebead lily (Clintonia borealis), and starflower (Trientalis borealis). Bunchberry is a member of the dogwood family and has dogwood-like white flowers in spring and red "bunchberries" later in the season. Notice the arching veins on its leaves, a hallmark of the dogwood family (Cornaceae). Bluebead lily has a pale yellow flower in spring and later a striking blue, beaded fruit that is poisonous. Goldthread gets its common name from its golden threadlike roots. You can take a peek at the gold threads without harm to the plant by carefully pulling the soil or moss away from the roots and then pushing it back.

In August and September Acadia's native wildflowers, the asters and goldenrods, both in the aster family (Asteraceae formerly named Compositae), are in full bloom. Their European relatives, daisies and black-eyed susans, are also in this family. Each "flower" is a composite made up of many disk and ray flowers. Disk flowers are in the middle surrounded by ray flowers. Each "she loves me, she loves me not" petal is actually a complete flower (take a look with a hand lens). So what appears to be one aster or daisy flower is made up of many disk and ray flowers densely packed together. If you look very carefully at goldenrods you will see that they too are made up of tiny daisy-like "flowers."

Ferns

Visitors to Acadia National Park will undoubtedly find many ferns, an interesting group of spore-producing plants. They thrive in cool, moist, shaded areas, which are quite common on the coast of Maine! Some of the easier-to-recognize ferns are species of rock polypody (Polypodium virginianum and P. appalachianum) which appear almost identical, and are often found growing in leaf litter duff on top of large rocks. The fronds are singular and look like they are growing in a small colony or mat. If you turn one of the fronds over you may see the round sori, clusters of spore-producing structures, on the underside. Another pair of related common ferns is cinnamon fern (Osmunda cinnamomea) and interrupted fern (Osmunda claytoniana).These two also look very much alike. Both are large ferns with non-fertile (vegetative) fronds arranged in whorls around the center. Cinnamon fern has separate, fertile, spore-producing fronds that sprout from the center of the plant in spring. These fronds are a cinnamon-like golden brown in color, which accounts for the plant's common name. Interrupted fern produces fertile leaflets in the upper third of the vegetative fronds; hence the frond is "interrupted" by the smaller fertile leaflets "within" the frond.

Lichens

A symbiotic relationship between a fungus and algae defines what lichens are. Each part of the plant provides an important function. The fungus anchors the plant to its substrate, whether rock, tree, or ground. Secretion of an acid dissolves minerals that are then absorbed by the

fungus and utilized by the algae, which manufactures the food needed for the continued growth of the lichen.

Lichens are plentiful throughout the park. There are three groups:

- Fruticose lichens have small stalk-like appendages. One that captures the eye of many people are the British soldiers (Cladonia cristatella), small green stalks with bright red caps. The multi-branching reindeer lichens (Cladonia rangiferina and gracilis) have pale grayish-green stalks and carpet both open sunny areas and forest floors. Old man's beard (Usnea barbada) is stringy long lichen that hangs in the branches of spruce trees.
- Foliose lichens are flat growing but have "leafy" margins. One example is the rock tripe (Umbilicaria vellea). Covering expanses of rock on mountain slopes, it resembles peeling paint. Its surface is olive-brown in color while the undersides are brownish-black. The yellowish Xanthoria found along the ocean's edge is another example.
- Crustose lichens cling to a substrate's surface, often appearing to be part of it. They are clearly evident on the island's granite, changing the rock's pinkish hue to gray, green, or black.

Mosses

If you find a bog in Acadia National Park you are sure to see sphagnum (pronounced "sfagnum") moss. Mosses, like ferns, reproduce by spores. However, mosses don't have well-developed conductive tissue and therefore cannot move water and nutrients throughout their systems as effectively as ferns and other vascular plants. Because of this, mosses by necessity always grow in low mats in wet areas close to their nutrient source. Sphagnum species are common and come in shades of green, red, and brown.

Bog hummocks, which are small mounds of sphagnum, often form to create an undulating bog surface. Each species of sphagnum finds its own niche based on levels of soil moisture. Therefore, the species of sphagnum growing on the top of the hummocks are usually different from the ones growing between the hummocks!

For further information see Resource Management concerns, see the Resource Management Issues/Exotic Plants section.

Plant Checklist

This checklist groups the park's most common plants into communities where they are typically found. To identify plants with which you are unfamiliar, consult a field guide or visit the Wild Gardens of Acadia at Sieur de Monts where more than 400 plants are labeled and displayed in their common habitat.

T tree
S shrub

Deciduous Woods
___ Ash, white (Fraxinus americana) T
___ Maple, mountain (Acer spicatum) T
___ Aspen, big-toothed (Populus grandidentata) T

___ Maple, red (Acer rubrum) T
___ Aspen, trembling (Populus tremuloides) T
___ Maple, striped (Acer pensylvanicum) T
___ Aster, large-leaved (Aster macrophyllus)
___ Maple, sugar (Acer saccharum) T
___ Beech,American (Fagus grandifolia) T
___ Mayflower, Canada (Maianthemum canadense)
___ Birch, paper (Betula papyrifera) T
___ Oak, red (Quercus rubra) T
___ Birch, yellow (Betula alleghaniensis) T
___ Pine, white (Pinus strobus) T
___ Blueberry, low sweet (Vaccinium angustifolium) S
___ Pyrola, round-leaved (Pyrola americana)
___ Bunchberry (Cornus canadensis)
___ Sarsaparilla, wild (Aralia nudicaulis)
___ Bush-honeysuckle (Diervilla lonicera) S
___ Saxifrage, early (Saxifraga virginiensis)
___ Cherry, pin (Prunus pensylvanica) T
___ Shadbush or serviceberry (Amelanchier spp.) T, S
___ Cherry, choke (Prunus virginiana) T
___ Solomon's seal, false (Maianthemum racemosum)
___ Elder, red-berried or stinking (Sambucus racemosa ssp. pubens) S
___ Solomon's seal, small (Polygonatum pubescens)
___ Fern, Christmas (Polystichum acrostichoides)
___ Starflower (Trientalis borealis)
___ Fern, bracken (Pteridium aquilinum var. latiusculum)
___ Twinflower (Linnaea borealis ssp. longiflora)
___ Goldthread (Coptis trifolia)
___ Twisted stalk, rose (Streptopus lanceolatus)
___ Hobblebush (Viburnum lantanoides) S
___ Violet (Viola spp.)
___ Lambkill or sheep laurel (Kalmia angustifolia) S
___ White-cedar, northern (Thuja occidentalis) T
___ Lily, bluebead (Clintonia borealis)
___ Wintergreen (Gaultheria procumbens)

Roadsides and Meadows
___ Alder, speckled (Alnus incana ssp. rugosa) S
___ Loosestrife, whorled (Lysimachia quadrifolia)
___ Aspen, big-toothed (Populus grandidentata) T
___ Mayflower, Canada (Maianthemum canadense)
___ Aspen, trembling (Populus tremuloides) T
___ Meadow-rue, tall (Thalictrum pubescens)
___ Aster, flat-topped (Doellingeria umbellata)
___ Meadowsweet (Spiraea alba var. latifolia) S
___ Aster,New York (Symphyotrichum novi-belgii)

___ Milkweed, common (Asclepias syriaca)
___ Blueberry, low sweet (Vaccinium angustifolium) S
___ Pearly everlasting (Anaphalis margaritacea)
___ Blue-eyed-grass (Sisyrinchium montanum var. crebrum)
___ Oat grass, poverty (Danthonia spicata)
___ Bluet (Houstonia caerulea)
___ Raspberry, red (Rubus idaeus)
___ Dogbane, spreading (Apocynum androsaemifolium)
___ Rose,Virginia (Rosa virginiana)
___ Fireweed (Epilobium angustifolium)
___ Sarsaparilla, bristly (Aralia hispida)
___ Goldenrod, gray (Solidago nemoralis)
___ Sarsaparilla, wild (Aralia nudicaulis)
___ Goldenrod, rough-stemmed (Solidago rugosa)
___ Strawberry, wild (Fragaria virginiana)
___ Hairgrass, common or wavy (Deschampsia flexuosa)
___ Willow (Salix spp.) S,T
___ Hardhack or steeple-bush (Spiraea tomentosa) S
___ Yellow rattle (Rhinanthus minor)

Bogs
___ Aster, bog (Oclemena nemoralis)
___ Laurel, bog (Kalmia polifolia) S
___ Bog rosemary (Andromeda polifolia var. glaucophylla) S
___ Lambkill or sheep laurel (Kalmia angustifolia) S
___ Chokeberry, black (Photinia melanocarpa) S
___ Leatherleaf (Chamaedaphne calyculata) S
___ Cotton-grass (Eriophorum spp.)
___ Maple, red (Acer rubrum) T
___ Cranberry, large (Vaccinium macrocarpon) S
___ Pitcher plant (Sarracenia purpurea)
___ Cranberry, small (Vaccinium oxycoccos) S
___ Rhodora (Rhododendron canadense) S
___ Crowberry, black (Empetrum nigrum) S
___ Rose, bristly (Rosa nitida) S
___ Goldenrod, northern bog (Solidago uliginosa)
___ Snowberry, creeping (Gaultheria hispidula) S
___ Huckleberry, dwarf (Gaylussacia dumosa var. bigeloviana) S
___ Spruce, black (Picea mariana) T
___ Iris, blueflag (Iris versicolor)
___ Sundew, round-leaved (Drosera rotundifolia)
___ Labrador tea (Rhododendron groenlandicum) S
___ Sweet gale (Myrica gale) S
___ Larch, hackmatack or tamarack (Larix laricina) T

Freshwater Marshes and Ponds
___ Arrowhead, common (Sagittaria latifolia)
___ Rose, swamp (Rosa palustris) S
___ Bladderwort, horned (Utricularia cornuta)
___ Spatterdock or yellow water-lily (Nupha lutea ssp. variegata)
___ Blueberry, high-bush (Vaccinium corymbosum) S
___ St. Johnswort, marsh (Triadenum virginicum)
___ Bluejoint, Canada (Calamagrostis canadensis)
___ Swamp candles (Lysimachia terrestris)
___ Cat-tail, common (Typha latifolia)
___ Turtlehead, white (Chelone glabra)
___ Lobelia,water (Lobelia dortmanna)
___ Water-lily, fragrant (Nymphaea odorata)
___ Pickerelweed (Pontederia cordata)
___ White-cedar, northern (Thuja occidentalis) T
___ Rhodora (Rhododendron canadense) S
___ Winterberry (Ilex verticillata) S

Coniferous Woods
___ Pyrola, one-flowered (Moneses uniflora)
___ Cranberry, mountain (Vaccinium vitis-idaea)
___ Sarsaparilla, wild (Aralia nudicaulis)
___ Dewdrop (Rubus dalibarda)
___ Shadbush or serviceberry (Amelanchier spp.) S,T
___ Fir, balsam (Abies balsamea) T
___ Shinleaf (Pyrola elliptica)
___ Woodreed, drooping (Cinna latifolia)
___ Wood-sorrel, northern (Oxalis montana)
___ Hemlock, eastern (Tsuga canadensis) T
___ Spruce, red (Picea rubens) T
___ Hobblebush (Viburnum lantanoides) S
___ Spruce, white (Picea glauca) T
___ Lily, bluebead (Clintonia borealis)
___ Starflower (Trientalis borealis)
___ Mayflower, Canada (Maianthemum canadense)
___ Trailing arbutus (Epigaea repens)
___ Mountain holly (Nemopanthus mucronatus) S
___ Twisted stalk, rose (Streptopus lanceolatus)
___ Partridgeberry (Mitchella repens)
___ Wintergreen (Gaultheria procumbens)
___ Pine, red (Pinus resinosa) T
___ Witherod or wild raisin (Viburnum nudum var. cassinoides) S
___ Pine, white (Pinus strobes) T
___ Bunchberry (Cornus canadensis)

Mountain Tops and Rocky Places
___ Alder, green or mountain (Alnus viridis ssp. crispa) S
___ Harebell (Campanula rotundifolia)
___ Aster (Aster spp.)
___ Heather, golden (Hudsonia ericoides)
___ Bearberry (Arctostaphylos uva-ursi) S
___ Holly, mountain (Nemopanthus mucronatus) S
___ Birch, gray (Betula populifolia) T
___ Huckleberry, black (Gaylussacia baccata) S
___ Blueberry, low sweet (Vaccinium angustifolium) S
___ Juniper, common (Juniperus communis var. depressa) S
___ blueberry, velvet-leaf (Vaccinium myrtilloides) S
___ Juniper, creeping (Juniperus horizontalis) S
___ Bush-honeysuckle (Diervilla lonicera) S
___ Lambkill or sheep laurel (Kalmia angustifolia) S
___ Cherry, pin (Prunus pensylvanica) T
___ Pine, jack (Pinus banksiana) T
___ chokeberry, black (Photinia melanocarpa) S
___ Pine, pitch (Pinus rigida) T
___ Cinquefoil, three-toothed (Sibbaldiopsis tridentata)
___ Raspberry, red (Rubus idaeus) S
___ Cranberry, mountain (Vaccinium vitis-idaea) S
___ Rose,Virginia (Rosa virginiana) S
___ Crowberry, black (Empetrum nigrum) S
___ Sandwort, mountain (Minuartia groenlandica)
___ Fern, bracken (Pteridium aquilinum var. latiusculum)
___ Sarsaparilla, bristly (Aralia hispida)
___ Goldenrod, Rand's (Solidago simplex ssp. randii)
___ Sweetfern (Comptonia peregrina) S
___ Oatgrass, poverty (Danthonia spicata)
___ Witherod or wild raisin (Viburnum nudum var. cassinoides) S

Tree Identification Key

1) Leaves needle-like or very small and scalelike; have cones . . . . . Go to 2
1) Leaves broad, decidous . . . . . .Go to 12
2) Leaves long, needle-like. . . . . ..Go to 3
2) Leaves small and scalelike, hugging branches . . . .Go to 11
3) Needles in bundles . . . . . ….Go to 4
3) Needles occurring singly. . . . . .Go to 8
4) Needles in groups of 2 . . . . . .Go to 5
4) Needles in groups of more than 2 . . . . . ….Go to 6
5) Needles long, 3"-8", cones 1 1/2" to 2 1/2" long . . . . . ……Red Pine
5) Needles short, 3/4" - 1 5/8", cones curved and in pairs . . . . . ……Jack Pine
6) Needles many, stemming from small spurs on branches;
deciduous conifer. . . . . ……Tamarack
6) Needles attached directly to twigs . . . . . ….Go to 7

7) Needles in groups of 3 . . . . . .…….Pitch Pine
7) Needles in groups of 5 . . . . . .…….White Pine
8) Needles flat, not sharp . . . . . .…….Balsam Fir
8) Needles sharp . . . . . … ..Go to 9
9) Needles 1/4" - 5/8" long, twigs hairy . . . . . ….Go to 10
9) Needles 3/8" - 3/4" long, twigs hairless . . . . . .……White Spruce
10) Needles 1/4" - 1/2", cones gray-brown . . . . . .……Black Spruce
10) Needles 1/2" - 5/8" long, cones reddish-brown,
hairs on twigs red . . . . . .……....Red Spruce
11) Leaves small and scale-like,
occur in flattened sprays; stringy bark . . . . . .……Northern White Cedar
12) Leaves and branches opposite . . . . . ….Go to 13
12) Leaves and branches alternate . . . .Go to15
13) Bark shows pale green stripes, leaves large with 3 lobes,
toothed margin . . . . . .…….Striped Maple
13) Leaves with more than 2 lobes, bark not striped . . . . . ….Go to 14
14) Leaves with 3-5 lobes, green underneath,
twigs and buds hairy . . . . . .…….Mountain Maple
14) Leaves with 3-5 lobes, silvery underneath, twigs smooth . . . . . ……..Red Maple
15) Leaves compound with 11-17 toothed leaflets,
bark smooth and gray-brown . . . . . .……..Mountain Ash
15) Leaves single . . . . . …Go to 16
16) Leaves oval, trunk peeling (mature tree) . . . . . …Go to 17
16) Leaves wide at base, tapering to narrow point,
trunk not peeling . . . . . .……Gray Birch
17) Leaves hairy underneath, mature tree with white bark,
peeling in layers . . . . . .……...White Birch
17) Leaves hairless, mature tree with shiny yellow or silver gray
bark, peeling in small, thin curls. . . . . .……Yellow Birch

ACADIA'S WILDLIFE

Introduction

Wildlife is abundant throughout Acadia National Park, although not always obvious. Many animals are nocturnal or secretive, and therefore go unseen. On closer inspection, however, signs of their presence are everywhere. The protection Acadia National Park provides animals and their habitat allows opportunities to learn more. Just as wildlife has a niche in the environment, we, too, must find our niche as wildlife observers. We are temporary visitors to the permanent homes of many species and we must ensure that our actions do not interfere with their basic requirements for survival.

Keep Your Distance

Observe animals quietly at a safe distance, allowing them to continue their normal activities. Most animals require a specific habitat for refuge, hunting, and feeding. This is particularly critical during nesting seasons when animals are devoting most of their energy to protecting or feeding their young. Human intrusion may cause serious stress on an animal, forcing it to move to less suitable areas or abandon its young. Nesting eagles, seabirds, seals, and other marine mammals need at least one quarter mile distance from people and their activities to avoid disturbance. Using binoculars provides a close view and is less stressful to wildlife.

Feeding Wildlife Can Have Devastating Consequences

It is tempting to feed a flock of gulls or an engaging red fox. However, this practice makes wild animals dependent on humans and less able to forage effectively for themselves. It also makes them vulnerable to poachers, whom wildlife may see as a source of food. Associating people with food can cause animals to become aggressive, and possibly attack. Aggressive wildlife cannot simply be moved to more remote areas. Most areas already have established wildlife populations. Relocated animals upset the balance in these areas, putting the relocated animal at risk from predators and competing animals. Some studies indicate that three-fourths of relocated raccoons do not survive. Animals have died accidentally or have had to be destroyed as a result of their dependence on human food. Feeding wildlife can contribute directly or indirectly to the animal's death. All wildlife in Acadia is protected under federal and state laws. It is illegal to feed, harass, or collect wildlife in Acadia National Park.

Give Me a Brake!

Drive slowly and observe speed limits. This will increase the chance of seeing more animals and gives wildlife a chance to safely cross roads. A porcupine, beaver, or a turtle crossing the road is no match for a speeding car. Be especially alert at dawn and dusk when mammals are most active.

Be a Wildlife Watcher

A duck swimming across a pond, a cedar waxwing feeding its young, or harbor seals hauled out on rocky ledges, are some of the wildlife activities one might observe in Acadia National Park. Seeing wildlife in its natural habitat can be the highlight of a trip. It also allows for the opportunity to gain a better understanding of the animal and its niche in the environment. Ask your group to sharpen their observation skills and follow the wildlife stewardship practices

outlined above. This can enhance everyone's opportunity to view and enjoy Acadia's diverse wildlife.

Report the location and condition of injured or abandoned wildlife to park staff. Do not attempt to move an animal. Unaware of your intentions, an animal may try to defend itself, resulting in further injury to the animal or injury to you. In the spring, harbor seal pups are temporarily left on beaches by their mothers, who are feeding nearby. Leave them be. It is illegal to handle these animals under the Marine Mammal Protection Act. Report any harassment of wildlife to park rangers. Call the park dispatch office at 288-8791.

You can also help park staff in protecting wildlife. If you observe an uncommon species or interesting wildlife behavior, please fill out a wildlife observation card at any information center. Your observations may be important to park scientists or resource managers.

Amphibians and Reptiles

The lakes, ponds, streams, and ephemeral vernal pools of Acadia National Park are rich in amphibian life. Eleven amphibian species, including frogs, salamanders, and one toad, have been identified on park lands and three other species have been historically reported in the park. A visitor does not have to spend much time in Acadia before being alerted to the presence of amphibians by the distinctive chorus of the spring peeper or the guttural croak of the bullfrog. Salamanders find clever hiding spots in wooded areas, wetlands, and streams, but can be seen by the astute observer!

A sunny summer day is a good time to locate the park's reptiles. Five species of snakes, none of them poisonous, might be found warming themselves on a rock, moving through some brush, or slithering across a carriage road. A painted turtle might be sighted soaking up the sun on a log along a lake's edge. The most dangerous reptile on the island is the snapping turtle. They are named "snapping" for a reason! For more information, see Acadia's Wildlife/Wildlife Fact Sheets.

Birds

With over 300 bird species identified on Mount Desert Island and its surrounding waters, Acadia National Park is considered one of the premier bird-watching areas in the country. Through the years, park staff and countless amateurs have observed the gradual extension of southern and temperate bird species to the region. Twenty-one species of wood warblers alone have been recorded as breeding in the park!

Acadia's offshore islands are also important nesting grounds for many birds, often marking the southern breeding limit for the species. Due to their secluded location and productive marine environment, the offshore islands administered by the park also serve as a critical nesting habitat for eiders and other sea birds, raptors, colonial birds (herons) as well as providing important wintering habitat for northern shorebirds (purple sandpipers), and harlequin ducks. Both the swift peregrine falcon and the bald eagle actively use areas within Acadia National Park. Eagles have been studied for several years to determine their breeding activity and population changes, and their response to environmental contaminants and human-caused disturbance. Peregrine falcons have rebounded since being on the brink of extinction in the mid-1960s. The falcons were reintroduced into the park in 1984, and have been returning of

their own accord to nest successfully from 1991 to the present. For information on some common birds, see Acadia's Wildlife/Bird Fact Sheets.

Fish

Historic records indicate that 31 fish species have been encountered in the lakes, ponds, and brooks of Acadia National Park, although only 24 species can be found today. Fifteen of these species are considered to be native, while the remainder are non-indigenous, often the result of stocking programs. The "missing" species are all non-natives that are no longer stocked. While brook trout, lake trout, landlocked salmon, and smallmouth bass are perennial favorites of anglers visiting the park, many of Acadia's fish are non-game species. The American eel, the banded killifish, and three species of sticklebacks are only part of the diversity of freshwater fish varieties found at Acadia. For information on Acadia's fish, see the Acadia's Wildlife/Acadia's Fishery section.

Invertebrates

Black flies, mosquitoes, and lobster are perhaps the most-well known of the invertebrates at Acadia with the latter falling in a more loved category by visitors than the first two.
Over a thousand species from 18 phyla of invertebrates have been reported from the park and the Mount Desert Island area. Insect inventories in the late 1940s reported over 6,500 species and subspecies of insects. William Proctor, of Proctor and Gamble fame, conducted this survey of the insects and spiders of Mount Desert Island between 1927 and 1945 "to add to the general knowledge on the insect fauna of a part of the Northeast section of this country." The thoroughness of his effort is best illustrated by some of his descriptions of collection sites and conditions.

- October 6, 1927: Stanley's Lobster Pound, Seawall. Old lobster, clam shells, and fish refuse. June 25, 1928: Salisbury Cove. Hatched from fungus found under birch log.
- June 26, 1929: Long Porcupine Island, breaking up rotten logs, mostly birch.
- June 6, 1938: Bald Mountain, west side of island, sweeping blueberry flowers and wild cherry blossoms.
- August 29, 1944: Town Hill cow dung for beetles.

A survey this extensive that is over 50 years old is very rare. There is a proposal to repeat this survey to find out how the insect diversity on Mount Desert Island has changed over the past half century. Such a study would tell about the biological diversity of the coast of Maine, including whether that diversity is increasing or decreasing as pollution and the summer population rise.

Mammals

From the big and charismatic, like the red fox or white-tailed deer, to the not so obvious, like the star-nose mole and the masked shrew, it is the diversity of habitat and its protection that allows such a range of species. Acadia is an important laboratory for numerous wildlife research studies that help park managers better understand the forty terrestrial mammal species and twelve species of marine mammals that call Acadia home. For information on the more common mammals, see the Acadia's Wildlife/Wildlife Fact Sheets section.

Habitat Protection

From the brook trout breaking the surface of Bubble Pond to the peregrine falcon soaring high over Jordan Cliffs, the land, water, and sky at Acadia are filled with a wide variety of animal life. Some call the park their home, others are simply passing through en route to a far-off destination, but all are closely tied to this unique and fragile environment. Protecting species hinges directly on habitat preservation and Acadia National Park's role is critical. Habitat loss is the greatest threat to plant and animal species. Changes in the landscape, primarily due to human impact, are the number one cause for a species to become threatened, endangered, or extinct. An endangered species is one in immediate danger of extinction due to low or declining numbers. A threatened species will probably become endangered if current population levels experience any further decline. The demise of a species is not the only loss— genetic diversity and the species niche in an ecosystem vanish forever. National Parks become even more important in the face of such concerns. Without protected lands, the rate of loss might be even greater. Acadia's forested woodlands, shimmering lakes, quiet marshes, bold, rocky shores, mountain cliffs, and coastal islands support a great diversity of animals.

Wildlife Research

Wildlife research answers questions such as: What is the identifying habitat preference of selected species? How do species compete? Completed studies let managers understand the species protected by the park, so that decisions, like the re-routing of a hiking trail, have limited environmental impact.

Current wildlife studies, as well as other park research, can be found at www.nps.gov/acad/parkmgmt/rm/htm. In addition to those studies, park staff annually monitors nesting state-listed peregrine falcons, bald eagles, breeding terrestrial birds, migrating fall raptors, amphibians, and beaver populations.

In wildlife research and monitoring, methods of data collection may be as complex as radio telemetry or as simple as looking for indirect evidence of an animal's presence from tracks or foraging. The following are some examples of studies and the methods used to gather data.

Inventories are the Foundation

Without basic biological data, upholding the National Park Service's mission of protect and preserve becomes more difficult. Protection relies on information. A careful list of resources - an inventory- adds to the general knowledge of park resources. In particular, inventories allow for managers to: 1) document the presence of an animal or population; 2) establish baselines to track changes in an animal's behavior, life history, or population status; 3) understand the relationships of an animal or population to other animals or to habitats within communities and at larger scales to one or more ecosystems; 4) identify sensitivities of an animal or population to changes or threats; 5) anticipate threats and identify conservation measures or mitigation actions; 6) learn key characteristics for monitoring programs; 7) correct or update life history information on species, populations, and habitats; 8) provide information for educational outreach; and 7) comply with legal mandates.

A major park inventory on Schoodic Peninsula in the mid-1990s was designed to acquire baseline data since no major biological information was available. Using wildlife census methods, biologists could estimate population size, density, distribution, and/or range of many of Schoodic Peninsula's mammals, birds, amphibians, and reptiles. Surveys were conducted using direct and indirect sampling or direct methods. Indirect methods use techniques where animal activity signs, such as foraging, trails or tracks, fecal deposits, scent marking, resting or protective sites such as burrows, lodges, nests, and direct observation, were used to provide information about the peninsula's smallest to largest animals.

In contrast, direct sampling methods use techniques that trap, capture, or temporarily hold animals to document not only the species' presence, but other health and condition information for a species. For example, biologists conducted small mammal population surveys using live and pitfall traps that were checked daily to document the presence and distribution of species as well relative abundance. Similarly they used trapping, visual, and auditory searches to document amphibians and reptiles within the study area. These initial data (baseline) can be compared with later survey data to better understand shifts in animal populations such as increases or decreases in population size, the factors affecting these changes, and the relationships among different species' populations (example: predator-prey).

What's Wrong With This Picture? Acadia's Bald Eagles

Recent reproductive failures of up to 40% in the Acadia bald eagle population raised questions about why an area with prime bald eagle habitat and far from pollutant -releasing industrial areas could not support healthy bald eagle populations. Suspicions led to studies that found high levels of many contaminants, with unusually high levels of polychlorinated biphenyl (PCB) that have been linked to lowered reproduction. To learn more, eaglets were removed from their nests by specially trained biologists who collected several body measurements as well as blood and feather samples. The samples were tested for heavy metals and persistent contaminants. As suspected, many of the young eaglets had high contaminant levels, including PCBs. What could this higher level be attributed to? Banding individual birds could help researchers understand more about bald eagle ranges, habitat use, and longevity. In addition, two adult eagles were equipped with radio transmitters allowing researchers to track the traveling birds daily to help in determining where they fed. Although a low percentage of banded birds are recovered, that information gives biologists vital information. Anyone finding a banded bird or spotting one should send that information to: U.S. Fish and Wildlife Service Bird Banding Laboratory, Laurel, MD 20708.

Follow That Deer – Telemetry

White-tailed deer low population numbers were odd considering Acadia's habitat could support higher numbers. Why was this? To answer this question, both adult deer and fawns were tracked using radio telemetry. This method of study aids researchers in learning more about the day to day movements of wildlife and their feeding habits, social interactions, and causes of death. Equipment consists of a directional antennae and receiver, in addition to the radio carried by the animal, whether as an ear tag, collar, or in an ingested form. This equipment is supplemented by binoculars, tape recorder, notebook, maps, and compass.
Radio telemetry was essential for finding the fawns for the study. Researchers first located pregnant collared does ready to give birth. Then once the fawns were born, researchers searched for and collared 29 fawns with collars that expanded and eventually fell off as the fawn grew.

Results from the study showed that the deer population was healthy, but numbers were most likely kept down by three sources of mortality: 1) coyotes, 2) domestic dogs, and 3) automobiles.

Acadia's Fishery

The management and protection of native fish species and aquatic communities, while providing the recreational angler with a quality fishing experience, is the focus of the National Park Service's (NPS) recreational fisheries program. The NPS together with the Maine Department of Inland Fisheries and Wildlife regulate and manage freshwater fishing in Acadia National Park.

The fish communities of ponds and brooks of Mount Desert Island, particularly those within the boundaries of Acadia National Park, have been influenced by humans for well over two centuries. This has resulted in extensive stocking of fish species native to Mount Desert Island as well as non-native and exotic (e.g. brown trout) introductions.

Virtually all ponds have been influenced by stocking at some point during the century. Of 24 ponds, only 6 have not been stocked, and these are all less than six acres in size. The first intentionally introduced species was small mouth bass in 1891. Since that time, brook trout, rainbow trout, brown trout, Sunapee char, lake trout, landlocked salmon, alewives, rainbow smelt, largemouth bass, steelhead, sea-run Atlantic salmon, and various species of sticklebacks and minnows have either been intentionally stocked or illegally moved to water bodies within Acadia National Park. As a consequence of these actions, fish community compositions have changed in 91% of the MDI water bodies. Historically, 31 species or subspecies of fishes have been confirmed for waters within the park, but only 15 are thought to have been native to Mount Desert Island. The most widespread of these native fishes are banded killifish and golden shiner, each found in 79% of the ponds, as well as in several brooks. Other widely distributed fish species within park waters are brook trout (71% of ponds), pumpkinseed (67%), American eel (63%), white sucker (54%), northern red belly dace, and rainbow smelt (each 50%).

As a general trend, there was less multi-species stocking by the late 1990s compared to the previous two decades. Most recent stocking has been with salmonid fishes. Numbers stocked have declined, but the size of stocked fish is larger, to promote higher survival and growth potential. Bear Brook, Duck Pond, and Lakewood Pond are stocked annually with brook trout. Since almost all waters within the park are biologically altered from their original species mixture, most fish communities will never return to their original state, especially with high angler demands of salmonids from local residents and tourists. Stocking has been a tool for meeting this demand—to introduce new species of game fish or to supplement existing populations. Research could address the progression of community changes and the consequences of such species changes.

Common Fish Species Caught at Acadia:

- Brook trout
- Landlocked salmon
- Lake trout

- White perch
- Small mouth bass
- Yellow perch

Endangered Wildlife Categories in the State of Maine

Endangered Species

A Maine Endangered Species is one in immediate danger of extirpation from the state due to critically low or declining numbers. Habitat loss or degradation, overexploitation, pollution, and disease are all causative factors. This includes any species that spends a significant part of its life cycle within the state of Maine, and is not limited just to those that breed in Maine. Continuous survival of these species within the state is unlikely without the implementation of special protective measures. In addition, any federally listed Endangered Species occurring in Maine is included in this listing.

Threatened Species

A Maine Threatened Species is not as critically jeopardized by extirpation as an endangered species, but will probably become endangered if current population levels experience any further declines. This includes any species that spends a significant part of its life cycle in the state of Maine, and is not limited just to species that breed in Maine. Any indigenous wildlife species that has been documented to be rare or declining within the state, and which is likely to become endangered in Maine in the foreseeable future is included. In addition, any federally listed threatened species occurring in Maine is included in this listing or in the endangered listing.

Special Concern Species: A species that is not endangered or threatened, but is particularly vulnerable to potential population decline due to restricted distribution and/or habitat loss.

Watch List Species: Species that do not meet the rigorous requirements of inclusion under the above categories, but do warrant special attention.

Extirpated Species: Species of wildlife that were once indigenous to Maine but have not been documented as naturally occurring in the state for the past 50 years.

Checklists

Status Descriptions:
Extinct: species no longer exists
Extirpated: human induced absence: hunted, trapped, or driven out from former range
** Maine Species of Indeterminate Status: believed to be endangered, threatened, or of special concern status, but insufficient data is available*
~ Maine Watch List: species that warrant special attention, but do not meet requirements of other categories
+ Federally Listed Endangered Species: in danger of extinction throughout all or a significant part of its range

Bats
Northern long-eared bat: common*
Little brown bat: common*
Silver-haired bat: unknown*
Big brown bat: common*
Red bat: uncommon*
Hoary bat: uncommon*
Eastern small-footed bat: uncommon

Bears
Black Bear: uncommon

Canids
Eastern timber wolf (gray wolf): extirpated
Eastern coyote: common
Red fox: common

Felines
Bobcat: rare
Lynx: extirpated
Eastern cougar: extirpated

Frogs and Toads
American toad: uncommon
Spring peeper: common
Gray tree frog: uncommon
Bullfrog: common
Green frog: common
Pickerel frog: common
Leopard frog (northern): uncommon
Wood frog: common

Hoofed Browsers
White-tailed deer: common
Moose: uncommon
Eastern woodland caribou: extirpated

Marine Mammals
Harbor seal: common
Gray seal: uncommon
Harbor porpoise: common
White-sided dolphin: uncommon
White-beaked dolphin: rare visitor
Pilot whale: rare
Finback whale (seasonal): common+
Minke whale: common
Humpback whale: uncommon
Right whale: rare+
Orca (killer whale): rare visitor
Beluga: rare visitor

Rabbits and Hares
Snowshoe hare (varying hare): common

Raccoons
Raccoon: common

Rodents
Porcupine: common
Beaver (re-introduced, 1921): common
Woodchuck: common
Muskrat: common
Gray squirrel: common
Red squirrel: common
Eastern chipmunk: common
Deer mouse: common
White-footed mouse: common
Southern bog lemming: unknown ~
Boreal red-backed vole: common
Meadow vole: common
Northern flying squirrel: common
Southern flying squirrel: uncommon
Meadow jumping mouse: common
Woodland jumping mouse: common
House mouse: uncommon
Norway rat: uncommon

Salamanders
Spotted salamander: common
Red-spotted newt: common
Dusky salamander: uncommon
Red-backed salamander: common
Four-toed salamander: uncommon
Two-lined salamander: common

Blue-spotted salamander: unknown

Shrews and Moles

Masked shrew: common ~
Northern water shrew: uncommon ~
Pygmy shrew: unknown ~
Short-tailed shrew: common ~
Star-nosed mole: common
Hairy-tailed mole: uncommon
Smokey mole: uncommon

Snakes

Red-bellied snake: common
Garter snake: common
Ringneck snake: common
Smooth Green Snake: common
Northern Milk Snake: common

Turtles

Snapping turtle: common
Stinkpot turtle: accidental
Eastern painted turtle: common
Central painted turtle: unknown
Wood turtle: accidental
Blanding's turtle: accidental

Weasels

Short-tailed weasel (ermine): common
Long-tailed weasel: common
Mink: common
River otter: common
Striped skunk: common
Fisher: unknown
Sea mink: extinct

Mammal Habitats

Mount Desert Island offers an environment rich with the presence of somewhat shy and secretive wildlife. Many leave signs of their presence such as nipped-off twigs, feces, tracks, eggshells, shed hairs, or nut hulls. Perhaps the most effective strategy for observing wildlife is to sit quietly for an hour or so in some secluded spot and wait for local species to declare themselves in the course of their daily lives. It may take repeated visits over many years to a variety of habitats to spot even half the species listed below, but the result is apt to be highly satisfying as a revelation of the hidden residents of Acadia National Park.

Bats

Little brown myotis: caves, attics, barns, tunnels, hollow trees
Silver-haired bat: forested areas near lakes or streams
Big brown bat: buildings, bridges, caves, tunnels, hollow trees
Hoary bat: wooded areas where it roosts in trees 10 to 15 feet above ground; uncommon
Keen's myotis: uncommon
Red bat: wooded areas where it roosts in trees 5 to 40 feet above ground; uncommon

Bears

Black bear: uncommon

Canids

Coyote: edges of second growth forests, open brushy fields, forest openings
Red fox: prefers a mixture of forest and open areas

Felines

Bobcat: mixed deciduous-coniferous and hardwood forests broken by fields and roads; rare

Hares

Snowshoe hare: woodlands with dense brushy understory; coniferous swamps

Hoofed Browsers
White-tailed deer: forest edges, swamp borders, woods interspersed with fields
Moose: second-growth boreal forests with semi-open areas and swamps or lakes; Uncommon

Raccoons
Raccoon: wooded areas interrupted by fields and water courses

Rodents
Eastern chipmunk: deciduous woodlands with abundant cover
Woodchuck: edges of woodlands, open cultivated land, pastures, meadows
Gray squirrel: deciduous and mixed forests
Red squirrel: coniferous, mixed, and occasionally deciduous forests
Northern flying squirrel: mixed mature coniferous and deciduous forests
Beaver: slowly flowing brooks, usually bordered by woodland
Deer mouse: coniferous or mixed forests, field borders, stone walls, out-buildings
Boreal red-backed vole: cool moist deciduous, mixed, or coniferous forests
Meadow vole: fields, pastures, orchards, marshes and meadows, swamps, bogs
Muskrat: marshes, shallow portions of lakes, ponds, swamps, streams, ditches
House mouse: buildings, fields, corncribs
Meadow jumping mouse: moist, open grassy and brushy marshes and meadows
White-footed mouse: forests and fields; not habitat specific
Woodland jumping mouse: brush and herbaceous vegetation in forests, near water
Porcupine: mixed or coniferous forests, especially northern hardwood-hemlock
House mouse: uncommon
Norway rat: wherever food is abundant; waterfronts, farms, towns, dumps; uncommon
Southern flying squirrel: uncommon

Shrews and Moles
Masked shrew: woodlands with grasses, rocks, logs, or stumps; bogs
Water shrew: wet areas along ponds and streams in coniferous forests
Northern short-tailed shrew: both timbered and fairly open habitats
Star-nosed mole: low wet ground near bodies of water
Short-tailed shrew: forests, grasslands, marshes, brushy areas
Hairy-tailed mole: open woods and meadows with light, sandy loam; uncommon
Smokey mole: uncommon

Weasels
Ermine: wooded or open country with thickets, rock piles, and other heavy cover
Long-tailed weasel: open woods and woodland edges, grasslands, river bottomlands
Mink: stream banks, lakeshores, marshes
Striped skunk: semi-open country, woods and meadows, agricultural lands, suburbs
River otter: borders of streams, lakes or other wetlands in forested areas

Amphibian and Reptile Habitats
Common Species
Spotted salamander: moist woods, stream banks, beneath stones, logs, boards

Red-spotted newt: ponds, weedy areas of lakes, marshes, ditches, backwaters, pools
Redback salamander: mixed deciduous or coniferous woods; under stones, moist litter
Four-toed salamander: wet woodlands w. sphagnum moss; tamarack bogs
Northern two-lined salamander: floodplain bottoms to moist forest; streams; seeps
Eastern American toad: gardens, woods, yards with cover and damp soil (limited distribution on island)
Northern spring peeper: marshy or wet woods; sphagnum bogs; near ponds and swamps
Bullfrog: near shorelines of large bodies of water with emergent vegetation
Green frog: shallow freshwater margins
Wood frog: wooded areas, often far from water in summer
Pickerel frog: colder waters of lakes, ponds, streams, springs, sphagnum bogs
Common snapping turtle: bottom dweller in any permanent/semi-permanent water body
Eastern painted turtle: quiet, shallow ponds, marshes, woodland pools, shores, bogs
Northern red belly snake: moist woods, hillsides, bogs, meadows; under debris
Eastern garter snake: island-wide
Northern ringneck snake: secretive, under cover in moist shady woodlands
Eastern smooth green snake: upland areas, grassy fields, meadows
Eastern milk snake: farmlands, woods, outbuildings, meadows, river bottoms, bogs

Wildlife Fact Sheets

Beaver Castor, Canadensis

Busy as a beaver is a good description when it comes to the largest rodent native to North America, second largest in the world only to South America's capybara. Only beavers and Humans have the special ability to make major changes in their environment, altering land to suit their needs. The range of the beaver covers all of North America, except the extreme north and parts of California, Nevada, Arizona, and Florida. They prefer slow moving streams or rivers bordered by a suitable woodland food source. At Acadia that means birch and aspen forests located near a brook or pond.

An adult beaver averages 3 1/2 feet long and can weigh from 28 to 75 pounds. Their massive skull supports strong jaw muscles capable of dragging trees used for building dams. Its incisor teeth are wide and chisel-like, while its flat molars are used to grind woody vegetation. The beaver's large, webbed hind feet make it a powerful swimmer. Split toenails on the second toe of the hind feet and the small dexterous front feet spread oil over the body to keep its fur sleek and water repellent. Long, coarse guard hairs give the fur a rich brown color while the paler, compact underfur keeps water from reaching the skin. The large, flattened, scaly tail is used as a rudder and allows the beaver to swim and steer while towing branches and logs. On land the tail props the beaver into an upright position while felling trees. Valves automatically close the nostrils and ears when a beaver submerges and reopen when it surfaces. Beavers can remain underwater for up to 15 minutes. Their lips can close behind the teeth to permit chewing while underwater. A clear membrane protects the beaver's eyes while submerged. Except for vision, the beaver's senses are highly developed. Between late April and late June an average of 4 kits are born in the lodge. Beavers mate for life and the family unit centers on the breeding female. When born, the kits are covered in fur and their eyes are open. The characteristic flat tail of the adult is more rounded on the kits. After one month the young are able to eat solid food. The young stay with the family unit for two years and are then driven off by the parents.

Beavers are herbivores. They eat the buds, leaves, twigs, and soft cambium layer of bark of certain trees as well as many types of aquatic vegetation including sedges, water grasses, fleshy roots, and water lilies. Beavers prefer small trees but large trees are used too. During autumn, beavers cache a winter supply of branches and logs in the water near their lodge to use when the pond is iced over.

The squat, rotund body of the beaver makes it clumsy on land. Beavers spend much of their time constructing and maintaining their environment. By digging channels, damming creeks, and constructing lodges made of sticks and mud this defenseless, slow moving mammal creates escape routes and shelter. In winter the lodge is frozen hard as concrete and is able to stop the teeth and claws of the strongest and most determined predator. The shallow ponds created by these engineers of nature provide valuable habitat for many other creatures; waterfowl come and feed, frogs and insects are both hunter and hunted, and mammals such as otter, muskrat, and moose find a home sweet home. In addition, their dams prevent erosion, conserve water, and increase the water quality of rivers by reducing the amount of silt flowing into them. Active lodges at Acadia vary year to year according to food availability and continued habitat suitability. Ask staff at the visitor center if they are aware of the best locations for beaver watching.

Before Europeans arrived, the beaver population in the United States was estimated at 60 million. During pioneer times, the beaver's valued pelt, musk glands, edible flesh, and the ease of locating and trapping the animal contributed to its decline. They were extirpated from Mount Desert Island due to trapping in the early 20th century were reintroduced by George B. Dorr in 1920. Since 1930, regulations and protection have allowed the beaver to make a natural comeback. Today it is estimated that there are more than 2 million beavers in the United States.

Eastern Coyote, Canis latrans

As the sun sets, the coyote begins its evening song. Soon others join in the call. The coyote is one of the fastest mammals in North America, running at speeds up to 40 mph. Coyotes have expanded their range across the eastern United States due to the elimination of wolves and the creation of favorable habitat due to breaking up of forests for settlement by humans. They prefer open regions such as farming areas and forest clearings and they have adapted to urban habitats. Their home range is from 5 to 25 square miles depending on habitat quality and food availability. In 1981, the first documented coyote sighting on Mount Desert Island was recorded.

This opportunistic feeder is both a scavenger and a predator. 90% of a coyote's diet is made up of rodents and rabbits. Such small mammals are usually taken by stalking and pouncing. Coyotes have been seen snatching fish from shallow streams and taking large prey, such as white-tailed deer, by pack hunting. Other foods that comprise their diet include songbirds, snakes, frogs, crayfish, insects, fruits, and plants. Coyotes have been known to prey on livestock. Because of this, farmers and trappers have used every known method to catch or kill this animal. This activity has had little impact on the species. At Acadia, deer are part of the coyote's diet, especially in the winter when deep snow made it difficult for deer to escape. Other food preferences include snowshoe hare, blueberries, and insects.

The coyote is a medium-sized member of the dog family. An adult male averages 4 feet long and weighs from 15 to 50 pounds. Females are about 1/5 smaller in size and weight. Long, slender legs, a tapered muzzle, and large pointed ears give the coyote its characteristic look. The color of the fur varies from buff yellow to grey. Black-tipped hairs give the back, neck, front of legs, and top of the tail a grizzled appearance. The chest, abdomen, area around the lips, inside the ears, and the tip of the tail are creamy white. Their eyes are yellow, like a fox, but their pupils are round, unlike the elliptical pupils of the fox. When running, coyotes carry their bushy tail below the level of their back while wolves hold their tail up above the level of their back. Although coyotes rarely mate for life, a pair may remain together for several years. A hollow log, rocky ledge, or an enlarged animal burrow, is selected as a den for raising the young. The female will prepare more than one den before the pups are born so that the young can be moved to another den if there is a disturbance. Averages of six young are born during April or May. When born, the pups' eyes are closed and they are covered with short, yellow-brown fur. After about ten days their eyes open and they begin to move around the den. The male brings food to the female for the first two months after the pups are born. Some of this food is regurgitated to feed the young during and after weaning. After about eight weeks the pups have been weaned and the den is abandoned. By following along on hunting trips and watching the parents the young are taught to hunt. By the end of the summer the pups are out looking for their own territory or have formed a pack with the parents.

Coyotes can be active at any time during the day, but they are most active in the early morning and at sunset. They lead lives that vary from solitary to sociable and coyotes communicate with one another using a variety of senses including visual, auditory, olfactory, and tactile. The coyote has learned to adjust to rapid changes in its environment, and for this reason this species will continue to flourish and expand its range in the future.

Harbor Seal, Phoca vitulina concolor

Harbor seals are playful and inquisitive creatures. A year round resident in the Gulf of Maine, this species is frequently seen and known locally as the common seal. Popular haul-out locations include Egg Rock and Bunker's Ledge, accessible only by boat. It is rare to see harbor seals close to Mount Desert Island shores. This species basks and sleeps on coastal islands, ledges, and sandbars during low tide. During high tide they can be seen bobbing in the water while foraging for food.

Harbor seals are carnivores, with a diet that includes herring, squid, cod, flounder, and several other invertebrates, depending on what they can find. This energetic predator may consume up to 10 percent of its body weight in fish per day. Like other carnivorous mammals, seals are intelligent and have well developed senses. Their eyesight is keen in water, functional in air, and adaptable to the darkness of deep dives and the dark winter months of northern latitudes. Hearing is acute in both air and water. The sense of smell operates both in the air, as when a mother identifies her pup, and underwater by picking up dissolved molecules from their environment. The nostrils and ears are normally closed and are opened by voluntary muscles only when the head is above water.

Adult males average 5 feet and 200 pounds while adult females average 4 feet 8 inches and 156 pounds. Females mature first, at 3 to 4 years of age, while males mature at 4 to 6 years of age. Both sexes are similar in appearance. The coat varies from light gray or tan to brown, black, or even reddish, with fine dark mottling on the back. Seals move in the water by waving the hind flippers from side to side. Movements on land or ice are awkward, the fore limbs propel the seal forward while the hind limbs are dragged along behind. The harbor seal looks like it's wiggling along on land.

Pups are born from late April to mid-June, weighing 21 pounds and measuring 2.5 feet on average. Pups are born on land and are able to swim by the next high tide. Nursing takes place ashore or in the water and lasts about 30 days. About 30 percent of the pups die during the first year; some of the causes are abandonment by mother, disease, storms, parasites, and predation by ospreys, black-backed gulls, and sharks. Occasionally, seal pups are found along Acadia's coastline. It is best to leave the pup alone as the mother may return to it. If the pup is there for more than 12 hours, call the Marine Patrol in Ellsworth at 667-3373 or the Marine Mammal Stranding Hotline at (617) 973-5247. Harbor seals have lived 35 years in captivity.
During the late 1800s fishermen complained about seals damaging nets and competing with them for commercial fish. A bounty of $1.00 per animal was established in Maine. By the early 1900s, harbor seals were nearly exterminated along many areas of the coast with no noticeable effects on fish catches. The bounty was lifted in 1905 and they began to regain their former numbers. In 1972, the Marine Mammal Protection Act prohibited taking harbor seals in the territorial waters of the United States without a permit.

Raccoon, Procyon lotor

The conspicuous black mask across the eyes and cheeks and the round, bushy tail of the raccoon make it one of the first wild animals we learn to recognize as children. This clever, curious creature is known to open coolers, remove trashcan lids, and live in chimneys or attics. Campers at Blackwoods and Seawall campgrounds know these creatures all too well. Anyone who has left food exposed for a short period of time will most likely come face to face with this nuisance pest.

The raccoon lives in all 48 of the contiguous United States and its range is confined to North America. It prefers wooded areas along waterways but can be found in almost any urban environment, utilizing sewer pipes, culverts, and drainage pipes for travel to feeding areas. It's one of the few large mammals that have done well in an urban habitat. Raccoon dens are located in tree hollows, brush piles, rock crevices, buildings, or other man-made structures. If an adequate food supply is available, the home range of a raccoon is about one square mile. Raccoons average 12 to 30 pounds but can weigh as much as 55 pounds and are about 3 feet long. Besides the characteristic mask and ringed tail which ends in a black tip, its fur is long, thick, and grizzled gray in color. The raccoon walks flatfooted, just like humans. The soles of its feet are hairless with five flexible toes and sharp claws that aid it in climbing trees.

Raccoons are omnivores, meaning they will eat anything they can find including garbage. Much of its diet is taken either in the water or along the water's edge. Crayfish, crabs, frogs, fish, and salamanders are favorites. Along the coast, tidepools and mudflats are visited for tasty treats. In addition, they eat almost every edible fruit and nut within their range as well as insects, worms, slugs, snails, sweet corn, small mammals, and birds as large as geese. It is not surprising that an animal with such a varied diet has a brain that is capable of problem solving and learning.

Raccoons eat more during autumn than at other times of the year. By increasing their body fat by 50 percent in the fall, they are able to survive the winter months when little food is available. They have well developed senses of hearing, sight, and touch. Although its rounded ears are small, the eardrums are well developed. Raccoons pay close attention to any noise that sounds out of place in their environment. Being nocturnal, their eyes are adapted to utilize all available night light. Their black, alert eyes also reflect the raccoon's intelligence and curiosity. Even though the raccoon does not have an opposable thumb, its fingers are so dexterous that it can locate food by touch alone. At one time, it was thought that the raccoon always washed its food before eating. Today it is thought that water heightens its sense of touch and for this reason, it seems to wash its food.

As an average, four young are born during April and May. At birth, the young weigh only a few ounces and their eyes are closed. After about 2 months, young raccoons begin to leave the den for short periods of time. They remain with their mother during spring and establish their independence in a nearby den by late summer. Yearling raccoons leave the area to go off on their own at about 14 months of age. These black-masked bandits do not hibernate during winter but will stay in their dens for extended periods of time. Raccoons are known carriers of rabies and should not be handled. Cases of rabies have been reported in the Acadia area.

Red Fox, Vulpes vulpes

Sleek and sly. Cunning and crafty. These words bring to mind the image of a red fox. Our language has taken on many different meanings when it comes to this wily creature: sly as a fox, foxy lady, outfoxing your opponent. The red fox has one of the largest geographical ranges of any species in the animal kingdom. Beyond America, it is found in Europe, Iceland, India, North Africa, Japan, and even Australia where it was imported during the late 1800s for the sport of fox hunting. This species prefers to live in open regions such as farming areas, alpine and arctic tundra, meadows, brushy fence rows, woody stream borders, forest clearings, and along beaches bordering large lakes. At Acadia, it is known to visit tidepools for a meal. It has adjusted to living closely with humans and is often seen running across roads. For many years near Sand Beach and Thunder Hole, red foxes learned the fine art of begging for food. Feeding any wildlife is strongly discouraged by park staff, and in this case, led to the removal of the individual foxes in that area. The size of the home range of the red fox is influenced by habitat quality and food availability. In ecologically diverse habitats, red foxes may live in an area as small as 140 acres. Where less diverse habitat exists, they may require two to three square miles to fulfill their needs. At Acadia, studies indicated that with the arrival of the eastern coyote, the red fox territories fell in between coyote territories.

Long-legged and built for speed, the red fox is as handsome as it is swift and cunning. A thick, full coat makes the fox appear much larger than its 9-12 pounds. A bushy tail makes up half of the total length of its 3 foot body. Although its coat varies in color from deep, russet red to sandy blonde, the legs, feet, and back of the ears are usually black. The pupils of the fox's eyes are elliptical, more like a cat's eyes. This adaptation lets more light filter through the pupil allowing the fox better vision for night hunting. Their teeth add layers continuously to compensate for the wear and abrasion of gnawing and chewing. Its hearing is so sensitive that it can follow the footsteps of a mouse concealed under vegetation or snow. The red fox's nose is estimated to be 100 times more sensitive than that of humans.

The diet of the red fox is limited only by what it can catch or find making it an omnivore. Its preference is for small mammals such as mice; but frogs, insects, birds, bird eggs, snakes, carrion, and plant material such as acorns, grasses, and fruits are often eaten. Like their cousins, wolves and coyotes, foxes often bury any food they cannot eat right away. Unlike their canine cousins, foxes are solitary and hunt alone except during the breeding season.

Foxes tend to mate for life. The dog, male, and the vixen, female, find each other and pair up in mid-December after having lived alone since the last family unit broke up the previous fall. The pair will stay together until early fall when the pups and parent each go their own way. The vixen chooses an abandoned animal burrow in which to raise her young. After a little remodeling and enlarging the den is ready for an average of five pups to be born during March or April. The dog remains outside, leaving food by the entrance of the den. The pups grow quickly and soon the parents begin to bring them half-dead animals to play with. This "playful hunting" teaches them the skills they will need for survival.

Red Squirrel, Tamiasciurus hudsonicus

Red squirrels are very easy to observe at Acadia. Its small size, white eye ring, tufted ears, black lateral stripe, and reddish coat and tail make the red squirrel easy to distinguish. Simply hiking in the vicinity of one will elicit a scolding. Dismantled red spruce cones littered on the forest floor are further evidence of the red squirrel's activities. Red squirrels are high-energy animals. Where some squirrels are shy and secretive, red squirrels are bold and aggressive. It is not hard to picture a red squirrel displaying displeasure with an intruder by foot stamping, tail flicking, and chattering. They are noisy and seem to be constantly on the move. This arboreal kamikaze runs through trees at high speeds, leaping from branch to branch, and dropping spread eagle to the ground.

Being a tree squirrel, it inhabits northern cone-bearing evergreen forests, mixed conifer and hardwood stands, and, sometimes, pure deciduous hardwood forests. Their range extends from tree line in Canada and Alaska southward as far as New Mexico and Arizona and in the higher mountains of the south. Red squirrels are not highly social. They are solitary but use a home range which is partly shared with others. Both sexes are territorial and defend their territories against intruders by using at least four different vocalizations during encounters.

Because of their high metabolism, red squirrels require a diet high in energy content. They are opportunistic feeders and rely on seasonal foods in addition to the year round supply of acorns, conifer seeds, and nuts from the autumn harvest. They are more carnivorous than other tree squirrels, eating insects, bird eggs, and nestlings. This species has even been known to rob meat used to bait traps. They gather bushels of cones and store them in huge piles, called seed middens, which can be three feet deep and several yards across. Since they do not hibernate in winter, caching seeds and fungi in tree hollows that are dry and protected provides a steady food supply during the winter months. Red squirrels become inactive for short periods of time in winter to avoid cold temperatures and storms. In spring, seeds left behind in caches sometimes sprout, making the red squirrel a beneficial forester of the woods. These acrobats of the forest are fascinating to watch as they scurry through the trees.

Red squirrels have two litters each year. The young are born and reared in a tree cavity or hollow trunk. If a den is not available, the female will build a round leaf nest in the branches of a tree. At Acadia, nests are made from twigs, cedar bark, and Old Man's Beard, the stringy lichen found growing on spruce tree branches. A single litter may contain four to seven young. At birth, they weigh half an ounce, their skin is pinkish, and their ears and eyes are closed. After about five weeks their eyes open and at six weeks the ear canals open and fur covers their body. The young squirrels stay with their mother about three months or until she has a second litter.

White-tailed Deer, Odocoileus virginianus

White-tailed deer are extremely plentiful in the United States. Population estimates are at 12 million. The proximity of agriculture and forested areas provides abundant habitat for white-tailed deer and is one reason for their large populations. Deer are reproductively mature by one and a half years, and in their prime reproductive years until they are eight years old. White-tailed deer populations at Acadia National Park have fluctuated in the past half century. Prior to the fire of 1947, which burned over 17,000 acres on Mount Desert Island's east side, Acadia's deer herd was smaller than a few years after the fire. This increase resulted from the replacement of the predominant spruce forest with a forest abundant in the favorite food of deer—certain species of deciduous trees (such as birch) and shrubs. In time, these forests changed again due to the natural progression of succession. Finding browse for the larger deer herd became more difficult, resulting in over browsing and malnourishment. The population stabilized toward the end of the 1960s due in part to a selective hunting program in the park. The program ended once the deer herd was considered healthy.

Deer, under good conditions, eat about 2.5 lbs of food a day. The preferred browse in Acadia National Park is cedar and certain species of pine, maple, and birch. In addition, acorns, apples, alfalfa, and clover are favorites. During winter months feeding is at a minimum and deer are often found in groups.

The results of the previous November's mating season are evident as does give birth, usually to twins, in May or June. To protect the young, the mother finds a safe and densely wooded area where the young's protective white spots mesh with dappled sunlight on the forest floor. Fawns barely move until 8-10 days old. Their ability to remain still is their most important survival tool until they are able to run to escape danger. Does, attempting not to draw attention to the young will leave for two to eight hours at a time to forage, and return only to nurse each fawn for a few minutes. People who stumble across fawns may mistakenly believe they have been abandoned and try to take them—usually to the detriment of the fawn.

Amphibians

To learn about amphibians here at Acadia National Park, one needs only to venture into the park with a receptive alertness. Crouched by the edge of a pond, one can watch a multitude of shimmery tadpoles dart by. The banjo plucking sound of a green frog can be heard in the park's marshes. Currently, 11 of the 19 amphibians identified in Maine (frogs, toads, and salamanders) are found in Acadia National Park.

Although Acadia's geographic location and weather extremes present many challenges for amphibians, the park's protected diverse freshwater habitats are ideal for these water loving creatures. Amphibians have a permeable skin which allows water to easily move into their body. Any excess is eliminated through the kidneys. While most have lungs or gills for breathing, all amphibians use their skin to take in some oxygen. When visiting a pond at Acadia, you may see frog throats rhythmically expanding and contracting. They are pushing air in and out of their bodies, exchanging oxygen and other gases. This adaptation is good while in an aquatic environment but can cause problems while on land. To avoid drying out, amphibians seek out shady and wet areas. Water also plays an important role in amphibian reproduction. Amphibian egg shells, like their skin, are permeable. If the eggs are not kept moist, the embryos inside easily dry out and die. For this reason, most species still return to water or a very moist environment to breed.

A spring evening in Acadia's wetlands is often accompanied by a chorus of male spring peepers and wood frogs all vying for attention from the opposite sex. For many amphibians, the mating season is in the spring. Adults begin migrating to their breeding waters. For those who live in or near water all their lives, such as the bull frog, the trip is short. For others, however, migration may require crossing busy roads to get to their breeding pond or stream. Once the larvae emerge, they are well adapted to a watery life with gills for breathing and a tail fin for swimming. They spend most of their time eating and eventually develop their adult characteristics. For most amphibians, the change from larvae to adult is complete after about 12 to 16 weeks.

In areas where temperatures become very cold and ponds may freeze over, some amphibians overwinter in their larval stage. The bullfrog tadpole, for example, may overwinter two or three times before it becomes an adult frog. In temperate places, such as Acadia, where summers are warm and winters very cold, amphibians must hibernate to survive. In the fall, as the temperatures decrease, amphibians burrow below the frost line or in the mud of a lake or pond. During this time their heartbeat and respiration are slowed and the little oxygen needed is absorbed through the skin. As daylight hours increase and temperatures rise in the spring, amphibian activity increases, hibernation is broken, and these creatures must come to the surface once again.

National parks, no longer immune from the effects of human activity, are in an important position to lead amphibian research and to provide information regarding this possible decline. The preserved ecosystems of national parks are crucial ground for amphibian monitoring.

Did you know?

- The red-backed salamander is the most common vertebrate in Maine. It has been estimated that at 1/4 oz. each there are 63.2 million pounds of salamanders crawling around Maine. Compare this to about 20 million pounds of moose at 1000 lbs apiece.
- The bullfrog is the largest North American frog with a record length of 8 inches.
- A single male spring peeper repeats his call about 4,500 times at night. It is rare to see a spring peeper—after all, they are only the size of your thumbnail.
- Northern dusky salamanders are 2 to 4-1/2 inches in length. Half of that length is their tail! They are a mottled grayish-brown color and are often found close to running water.

Quiet Wetlands – Where Are Acadia's Frogs?

Amphibians are good indicators of the overall health of wetland environments for several reasons: 1) their permeable skin and eggs make them susceptible to absorption of toxins, 2) their shell-less eggs leave them unprotected from radiation, 3) their complex life cycles force them to come into contact with both land and aquatic environments, and 4) they remain in small areas their entire lives and therefore, their declines may reflect what is happening in that locality.

The above reasons are why the recently discovered mass die-off of specific frog species in five wetland sites at Acadia prompted immediate questions and need for investigation. How did a fungus and certain viral and bacterial strains, never recorded for many of these species in the United States, develop in Acadia and cause high mortality rates in juvenile and adult frog populations of frogs for these sites? Had this phenomenon gone unnoticed and could it have been naturally-occurring for many years? Or was it the result of unexpected changes in these mortality agents (i.e., fungus, diseases) caused by anthropogenic environmental factors that somehow made them highly dangerous to wetland animals under certain conditions? If it was related to human activities, was it one such as radiation due to the thinning ozone layer, or air-borne pollutants, or some cocktail mix of pollutants and environmental factors that might be impossible to tease apart? For more information on Acadia's resource management and research programs, see Resource Management fact sheets, pages 3-81–3-102.

Amphibian Worries

Mass die-offs of multiple frog species at all life stages discovered at five wetland sites in some of the most pristine park areas in 2001 have park managers concerned. These concerns range from how the diseases arrived or developed at these sites, how contagious or transferable they are to other ages or wetlands, to what the implications are for the long-term survival of these meta- or local populations of amphibians. These die-offs were linked to five different causes, some strains of different viruses, to fungi, to a trematode, and to the possibility of these in some lethal combination that killed large numbers of individuals such as spring peepers, or bullfrogs, or green frogs, or some of all at different wetland sites. Most of the mortalities occurred to individuals that had just hatched or were in one of the tadpole stages of development; however, this pattern was not consistent at all sites.

Entire populations of spring peepers, a small tree frog, were destroyed at two park sites in 2000 and 2001 by the strains of the Iridio virus. The die-offs in park temporary pools first documented the virus in an amphibian family in North America. Massive bruising and bleeding

occurred, and a year's worth of eggs were lost. Because spring peepers live only three years, the loss of an entire year of offspring was a concern for the population because of the loss of a full year of breeding adult spring peepers at these sites. About the same time, a fungus called icthyophonus caused a mass die-off of bullfrogs at two of the five sites in Acadia. The fungus has been known to kill massive numbers of bullfrogs, but it's more commonly the cause of massive fish kills, particularly mackerel. The samples taken from Acadia revealed telltale signs of the fungus: huge lesions on the internal organs, particularly the liver and intestines. Ribeiroia, a parasite, caused a massive die-off of both bullfrogs and green frogs at another site, and another parasite that is a protozoan was found in "vast concentrations" in wood frogs at yet another site.

The most important task researchers must first accomplish is to gather baseline data so they have something to measure and compare their findings against. A critical part of establishing the baseline information is to reproduce the diseases found in the Acadia frogs in healthy samples so that researchers can study the progression of the diseases and hopefully learn what triggers them and why.

At Acadia National Park, biologists are interested in assessing the park's current amphibian population and condition. Potential future declines would be difficult to document without accurate records. Studies and long-term monitoring are critical considering five wetland sites in the park have had documented mass die-offs of certain frog species. Currently, 11 of the 19 amphibians identified in Maine (frogs, toads, and salamanders) have been found in Acadia National Park.

Reptiles

Reptiles seem to be secretive animals in part because of their cold-blooded nature that fluctuates with the surrounding air temperature. They are represented at Acadia by five species of non-poisonous snakes and two species of turtles. During the warm months you may discover some of these shy animals sunning themselves on a rock or log. Colder temperatures force them into burrows under mud, rocks, or earth. In addition to being cold blooded, reptiles lay eggs with leather shells or give birth to fully-formed young, breath with lungs, have a covering of scales, and either have no legs (snakes) or four legs with clawed toes (turtles and lizards).

Eastern Milk Snake

Rows of reddish-brown patches line the tan to pale gray snake. Two to three feet long, it can be found in woodlands, where its coloration helps in camouflage.

Eastern Garter Snake

This very common snake can be black, brown, or olive with three lengthwise stripes of various colors—like yellow, green, or brown. Meadows, woods, marshes—the garter snake is found in a variety of Acadia's habitats. It is usually one to two feet in length.

Eastern Smooth Green Snake

The name of this snake aptly fits its description. It is a bright green snake with a much lighter underside of white or pale yellow. Small in size, it is only one to one and a half feet in length.

Red-Bellied Snake

The dark gray to black upper body is under laid with a red belly. There are also pale yellow spots at the back of the head. It is a small snake about one foot in length.

Ring-Neck Snake

A thin yellowish-orange ring is just behind the head on these dark gray snakes. Small snakes, only about one to one and half feet in length, they can be found in moist woods under rocks and rotting logs.

Snapping Turtles

These turtles are common in Acadia's lakes and ponds. As their name implies these large turtles (adults up to over twenty pounds and one and a half feet in length), can give a nasty bite. They should not be handled. They prefer quiet muddy spots close to the water's edge.

Eastern Painted Turtles

If you see a small turtle sunning itself on a log, most likely it is this common turtle. They are only five to six inches long and have patterns of black, red, and yellow along the edges of their smooth shells. Bright yellow spots mark the head.

ACADIA'S BIRDS

Birding on Mount Desert Island

With over 273 species of birds seen around Mount Desert Island, Acadia National Park is truly a good place to look for them. This is due in part to the meeting of northern and southern forest types, along with open ocean, sheltered bays, and freshwater marshes and ponds. The distribution of individual birds, however, changes with the time of day, the season, and the year. Seeing certain species may take a lot of patience and persistence, and being in the right place at the right time. To find birds, spend time in the preferred habitat of the species you are looking for, noted in the bird checklist or in field guides, and follow the tips below.

Birding Tips

Bald eagles and ospreys nest on many off-shore islands around Mount Desert Island. They may be seen near any body of water, especially on nature cruises. Look for them on tops of trees, on rocky islands, or flying overhead. Give a wide berth to any eagle nests and do not land on an island with an active nest.

Common loons breed on many freshwater lakes and ponds. They may be heard calling on Echo Lake, Eagle Lake, Bubble Pond, Jordan Pond, and Long Pond. Loons move into saltwater bays for the winter.

Northern species at the southern edge of their distribution, such as boreal chickadees, gray jays, red and white-winged crossbills, spruce grouse, and black-backed woodpeckers. They may be rare or absent, however, in any given year. Spruce forests, especially on the west side of the island, such as at Wonderland or Ship Harbor, are the best places to look.

Atlantic puffins are birds of the open ocean, rarely seen at Acadia National Park. They nest on nearby Petit Manan National Wildlife Refuge and can be seen during various commercial boat trips.

Peregrine falcons nest on some of the park's cliffs between late March and early August, and adults may be present into December. The Precipice Trail parking lot is a good vantage point from which to look for these falcons. Park staff may be there with spotting scopes to help you see them.

In the fall: Watch for migrating falcons, hawks, and other birds of prey from any mountain in the park, especially when the winds blow from a northerly direction. Mixed flocks of migrating warblers and other songbirds may be encountered along the south end of the island and by bodies of water.

In the winter: Seabirds, like Long-tailed Duck, common eiders, and red-necked grebes, are the easiest birds to see in the coldest months. Look for them along Ocean Drive, around Bar Island, or in any sheltered bay. Northern shrikes, great gray owls, and northern hawk owls are sometimes found in open areas like Great Meadow and Beech Mountain.

Sieur de Monts is one of the best birding locations. Look for American woodcock, black-billed cuckoo, great crested flycatcher, eastern peewee, eastern phoebe, alder and least flycatchers, wood thrush, veery, red-eyed vireo, black-and-white and black-throated green warblers, American redstart, ovenbird, scarlet tanager, rose-breasted grosbeak, and swamp sparrow.

Otter Point is a summertime home to northern species like the black-backed three-toed woodpecker, boreal chickadee, and gray jay.

Ship Harbor's coastal spruce forest harbors up to eighteen species of warblers.
Look for shorebirds in search of food in the harbor's quiet cove and mudflats.

Bird Checklist for Acadia National Park

This checklist covers the entire Acadia National Park archipelago from Schoodic Point east, to Isle au Haut west, and Mount Desert Rock south, including all of Mount Desert Island. Species that have been recorded five or more times within the Acadia National Park area are shown in this checklist. These bird species may be here year round, from spring to autumn, or only in one season. For specifics on when they can be sighted, pick up a copy of Acadia National Park's Bird List. Look at the migrant list for species return to Acadia in appendix B. Accidental species are listed separately. Please report details of unusual sightings to Acadia National Park naturalists.

Abundance Designations
+ Irregular: may be intermittently abundant, common or absent
** Breeds: confirmed breeding since 1965*

Habitat :Species restricted to one or two habitat types are assigned code letters based on the following key:
B Brushy areas
M Mixed Forest
C Coastal
O Open Fields
D Deciduous forest
P Pelagic
E Evergreen
R Residential
F Fresh marsh, bogs
S Salt marsh
I Offshore islands
T Tidal zones
S Lakes

Loons
___ Red-throated Loon C, P
___ Common Loon *
Grebes
___ Pied-billed Grebe *
___ Horned Grebe C
___ Red-necked Grebe C
Shearwaters
___ Northern Fulmar + P
___ Cory's Shearwater P
___ Greater Shearwater + P
___ Sooty Shearwater
___ Manx Shearwater P
Storm-petrels
___Wilson's Storm-Petrel + P
___ Leach's Storm-Petrel * I
Gannets
___ Northern Gannet C, P
Cormorants
___ Great Cormorant * C, I
___ Double-crested Cormorant *
Bitterns and Herons
___ American Bittern *
___ Least Bittern * F
___ Great Blue Heron *
___ Great Egret S
___ Snowy Egret S
___ Little Blue Heron S
___ Cattle Egret O
___ Green Heron *
___ Black-crowned Night-Heron
___ Yellow-crowned Night-Heron

Ibises

___ Glossy Ibis
Geese and Ducks
___ Snow Goose
___ Brant + C, I
___ Canada Goose
___ Wood Duck * F, S
___ Green-winged Teal *
___ American Black Duck *
___ Mallard *
___ Northern Pintail
___ Blue-winged Teal *
___ American Wigeon
___ Ring-necked Duck * S
___ Greater Scaup C
___ Common Eider * C, I
___ King Eider C
___ Harlequin Duck I
___ Oldsquaw C
___ Black Scoter C
___ Surf Scoter C
___ White-winged Scoter C
___ Common Goldeneye C, S
___ Barrow's Goldeneye C
___ Bufflehead C, S
___ Hooded Merganser
___ Common Merganser * C
___ Red-breasted Merganser * C, S
___ Ruddy Duck
Rails
___ Virginia Rail * F
___ Sora *
___ Purple Gallinule F
___ Common Moorhen (Gallinule)
___ American Coot F, S
Plovers
___ Black-bellied Plover
___ American Golden-Plover O,T
___ Semi-palmated Plover T
___ Killdeer * O,T
Sandpipers
___ Greater Yellowlegs
___ Lesser Yellowlegs
___ Solitary Sandpiper
___ Willet
___ Spotted Sandpiper *
___ Whimbrel O,T
___ Upland Sandpiper
___ Hudsonian Godwit
___ Ruddy Turnstone
___ Red Knot T
___ Sanderling T
___ Semipalmated Sandpiper S, T
___ Least Sandpiper S, T
___ White-rumped Sandpiper T
___ Pectoral Sandpiper S
___ Purple Sandpiper + C, T
___ Dunlin I,T
___ Short-billed Dowitcher S, T
___ Common Snipe
___ American Woodcock *
___ Red-necked Phalarope P
___ Red Phalarope P
Alcids
___ Dovekie + P
___ Common Murre P
___ Thick-billed Murre P
___ Razorbill P
___ Black Guillemot * C, P
___ Atlantic Puffin P
Jaegers, Gulls and Terns
___ Pomarine Jaeger P
___ Parasitic Jaeger P
___ Laughing Gull * C,T
___ Common Black-headed Gull C,T
___ Bonaparte's Gull C,T
___ Ring-billed Gull
___ Herring Gull *
___ Iceland Gull
___ Glaucous Gull
___ Great Black-backed Gull *
___ Black-legged Kittiwake C, P
___ Royal Tern C, P
___ Roseate Tern C
___ Common Tern * C, P
___ Arctic Tern * C, P
___ Least Tern C, P
___ Black Tern
Vultures
___ Turkey Vulture
Hawks and Eagles
___ Osprey *
___ Bald Eagle *

___ Northern Harrier *
___ Sharp-shinned Hawk *
___ Cooper's Hawk *
___ Northern Goshawk *
___ Red-shouldered Hawk
___ Broad-winged Hawk *
___ Red-tailed Hawk *
___ Rough-legged Hawk
___ Golden Eagle
Falcons
___ American Kestrel
___ Merlin
___ Peregrine Falcon
___ Gyrfalcon *
Grouse
___ Ruffed Grouse *
___ Spruce Grouse * E
___ Northern Bobwhite *
___ Ring-necked Pheasant *
Doves
___ Rock Dove *
___ Mourning Dove *
Cuckoos
___ Black-billed Cuckoo *
___ Yellow-billed Cuckoo
Owls
___ Great Horned Owl *
___ Snowy Owl +
___ Northern Hawk-Owl +
___ Barred Owl *
___ Long-eared Owl *
___ Short-eared Owl
___ Northern Saw-whet Owl *
Nightjars
___ Common Nighthawk *
___ Whip-poor-will *
Swifts
___ Chimney Swift * R
Hummingbirds
___ Ruby-throated Hummingbird *
Kingfishers
___ Belted Kingfisher
Woodpeckers
___ Red-headed Woodpecker
___ Red-bellied Woodpecker
___ Yellow-bellied Sapsucker *
___ Downy Woodpecker *
___ Hairy Woodpecker *
___ Three-toed Woodpecker E, M
___ Black-backed Woodpecker * E, M
___ Northern Flicker *
___ Pileated Woodpecker *
Flycatchers
___ Olive-sided Flycatcher * E, M
___ Eastern Wood-Pewee *
___ Yellow-bellied Flycatcher *
___ Alder Flycatcher *
___ Least Flycatcher *
___ Eastern Phoebe *
___ Great Crested Flycatcher *
___ Western Kingbird
___ Eastern Kingbird *
Larks
___ Horned Lark T
Swallows
___ Purple Martin
___ Tree Swallow *
___ Northern Rough-winged Swallow
___ Bank Swallow *
___ Cliff Swallow *
___ Barn Swallow *
Jays and Crows
___ Gray Jay * E, M
___ Blue Jay *
___ American Crow *
___ Common Raven *
Chickadees
___ Black-capped Chickadee *
___ Boreal Chickadee * E, M
Nuthatches
___ Red-breasted Nuthatch *
___ White-breasted Nuthatch * D, R
Creepers
___ Brown Creeper *
Wrens
___ Carolina Wren
___ House Wren * B, R
___ Winter Wren * E, M
___ Sedge Wren * F, O
___ Marsh Wren
Thrushes
___ Golden-crowned Kinglet *

___ Ruby-crowned Kinglet *
___ Blue-gray Gnatcatcher
___ Eastern Bluebird *
___ Veery *
___ Gray-cheeked Thrush
___ Swainson's Thrush *
___ Hermit Thrush *
___ Wood Thrush *
___ American Robin *

Mimics

___ Gray Catbird *
___ Northern Mockingbird
___ Brown Thrasher *

Pipits

___ American Pipit O,T

Waxwings

___ Bohemian Waxwing +
___ Cedar Waxwing *

Shrikes

___ Northern Shrike

Starlings

___ European Starling *

Vireos

___ Solitary Vireo *
___ Warbling Vireo *
___ Philadelphia Vireo
___ Red-Eyed Vireo *

Wood Warblers

___ Blue-winged Warbler
___ Golden-winged Warbler
___ Tennessee Warbler *
___ Orange-crowned Warbler
___ Nashville Warbler *
___ Northern Parula *
___ Yellow Warbler *
___ Chestnut-sided Warbler *
___ Magnolia Warbler *
___ Cape May Warbler *
___ Black-throated Blue Warbler *
___ Yellow-rumped Warbler *
___ Black-throated Green Warbler *
___ Blackburnian Warbler *
___ Pine Warbler *
___ Prairie Warbler
___ Palm Warbler *
___ Bay-breasted Warbler *
___ Blackpoll Warbler *
___ Black-and-white Warbler *
___ American Redstart *
___ Ovenbird *
___ Northern Waterthrush *
___ Mourning Warbler
___ Common Yellowthroat *
___ Wilson's Warbler *
___ Canada Warbler *
___ Yellow-breasted Chat

Tanagers

___ Summer Tanager
___ Scarlet Tanager *

Cardinals

___ Northern Cardinal * B, R
___ Rose-breasted Grosbeak *
___ Blue Grosbeak
___ Indigo Bunting *
___ Dickcissel

Blackbirds and Orioles

___ Bobolink *
___ Red-winged Blackbird *
___ Eastern Meadowlark * O, B
___ Rusty Blackbird
___ Common Grackle *
___ Brown-headed Cowbird *
___ Orchard Oriole
___ Baltimore Oriole *

Finches

___ Pine Grosbeak +
___ Purple Finch * +
___ House Finch R
___ Red Crossbill * + E
___ White-winged Crossbill * + E
___ Common Redpoll +
___ Pine Siskin * +
___ American Goldfinch *
___ Evening Grosbeak * +

New World Sparrows

___ Eastern Towhee *
___ American Tree Sparrow
___ Chipping Sparrow *
___ Clay-colored Sparrow
___ Field Sparrow *
___ Vesper Sparrow
___ Savannah Sparrow *

___ Nelson's Sharp-tailed Sparrow *
___ Fox Sparrow
___ Song Sparrow *
___ Lincoln's Sparrow * F
___ Swamp Sparrow * B, F
___ White-throated Sparrow *
___ White-crowned Sparrow B, R
___ Dark-Eyed Junco *
___ Lapland Longspur O,T
___ Snow Bunting O,T
Old World Sparrows
___ House Sparrow * R

Species reported less than five times are listed below:
Arctic/Pacific Loon
Boreal Owl
Eared Grebe
Chuck-will's-widow
Red-billed Tropicbird
Rufous/Allen's Hummingbird
Magnificent Frigatebird
Acadian Flycatcher
Tricolored (Louisiana) Heron
Willow Flycatcher
Tundra Swan
Say's Phoebe
Greater White-fronted Goose
Ash-throated Flycatcher
Northern Shoveler
Scissor-tailed Flycatcher
Gadwall
Tufted Titmouse
Eurasian Wigeon
Bewick's Wren
Canvasback
Northern Wheatear
Redhead
Townsend's Solitaire
Lesser Scaup
Varied Thrush
Swainson's Hawk
Loggerhead Shrike
Clapper Rail
Yellow-throated Vireo
King Rail
White-eyed Vireo
Sandhill Crane
Black-throated Gray Warbler
Piping Plover
Townsend's Warbler
American Oystercatcher
Yellow-throated Warbler
American Avocet
Cerulean Warbler
Western Sandpiper
Prothonotary Warbler
Baird's Sandpiper
Worm-eating Warbler
Curlew Sandpiper
Louisiana Waterthrush
Stilt Sandpiper
Kentucky Warbler
Buff-breasted Sandpiper
Connecticut Warbler
Long-billed Dowitcher
Hooded Warbler
Marbled Godwit
Western Tanager
Long-tailed Jaeger
Black-headed Grosbeak
Great Skua
Lazuli Bunting
South-Polar Skua
Painted Bunting
Little Gull
Green-tailed Towhee
Lesser Black-backed Gull
Spotted Towhee
Sabine's Gull
Lark Sparrow
Ivory Gull
Lark Bunting
Caspian Tern
Grasshopper Sparrow
Forster's Tern
Le Conte's Sparrow
Sooty Tern
Seaside Sparrow
White-winged Tern
Harris' Sparrow
Black Skimmer

Yellow-headed Blackbird
Barn Owl
Brewer's Blackbird
Great Gray Owl
Bullock's Oriole
Eastern Screech-Owl
Hoary Redpoll

Approximate Times of Arrival of Spring Migrant Birds

Late March
Great blue heron
Canada goose
Brant
Common merganser
Kestrel
Woodcock
Killdeer
Mourning dove
Horned lark
Crow
Robin
Song sparrow
Tree sparrow
Junco
Fox sparrow
Red winged blackbird
Grackle
Pine sisken
Red crossbill
White winged crossbill
Purple finch

Early April
Red-throated loon
Pied-billed grebe
Double-crested cormorant
Green-winged teal
Wood duck
Ring-necked duck
Snipe
Red-shouldered hawk
Harrier
Merlin
Peregrine falcon
Osprey
Kingfisher
Flicker
Phoebe
Brown creeper
Winter wren
Hermit thrush
Bluebird
Golden crown kinglet
Pipit
Savannah sparrow
Meadowlark
Cowbird

Late April
Gannet
Great egret
Bittern
Blue-winged teal
Hooded merganser
Broad-wing hawk
Laughing gull
Yellow-bellied sapsucker
Tree swallow
Barn swallow
Brown thrasher
Yellow-rump warbler
Palm warbler
Vesper sparrow
Chipping sparrow
Field sparrow
White-throated sparrow
Swamp sparrow
Goldfinch

First Week of May
Green heron
Sharp-shinned hawk
Spotted Sandpiper
Solitary Sandpiper
Greater yellowlegs
Chimney swift
Kingbird
Catbird
Veery

Solitary vireo
Nashville warbler
Parula warbler
Black and white warbler
Northern waterthrush
Yellowthroat
Towhee
White-crowned sparrow
Scarlet tanager

Second Week of May
Leach's petrel
Whip-poor-will
Semi-palmated plover
Common tern
Arctic tern
Roseate tern
Ruby-throated hummingbird
Least flycatcher
Bank swallow
Cliff swallow
House wren
Wood thrush
Black-throated blue warbler
Chestnut-sided warbler
Magnolia warbler
Black-throated green warbler
Yellow warbler
Redstart
Rose-breasted grosbeak
Bobolink
Northern oriole

Third Week to Late May
Ruddy turnstone
Black-bellied plover
Short-bill dowitcher
Semi-palmate sandpiper
Least sandpiper
Northern phalarope
Parasitic jaeger
Nighthawk
Alder flycatcher
Yellow-bellied flycatcher
Wood pewee
Olive-sided flycatcher
Swainson's thrush
Gray-cheeked thrush
Ruby-crowned kinglet
Cedar waxwing
Red-eyed vireo
Tennessee warbler
Blackburnian warbler
Cape May warbler
Bay-breasted warbler
Blackpoll warbler
Mourning warbler
Canada warbler
Wilson's warbler
Ovenbird
Indigo bunting
Lincoln's sparrow

Early June
Wilson's petrel
Black-billed cuckoo
Crested flycatcher
Philadelphia vireo
Sharp-tailed sparrow

Bird Fact Sheets

Bald Eagle, Haliaeetus leucocephalus

Bald eagles, our national symbol, give each of us a sense of the wild. They are large birds with a wingspan of up to seven feet. Their characteristic white head and tail set them apart. “Bald” comes from an old English word meaning white. Their Latin name, Haliaeetus leucocephalus, means white-headed sea eagle. This characteristic trademark does not appear until they are between four and six years old. Keen eyesight and huge talons assist in searching for their primary food—fish. Bald eagles also eat carrion and occasionally bully other birds to abandon food. On the coast of Maine, the majority of their diet is seabirds. Their preferred habitat is forested shoreline along open water. Eagles are found from British Columbia and Alaska, across Canada, and down towards Florida. In Maine, the highest concentration is along the rocky coastline.

Eagles build large nests of sticks, known as aeries. Look for an eagle’s aerie just below the crown of trees or on a ledge. Each year eagles return to the same nest site, adding more sticks. Some nests may eventually measure up to eight feet in diameter and 10 feet deep. Eagles raise one brood each year consisting on the average of one or two chicks. Both parents share in incubating the speckled white eggs for approximately 35 days. The white downy young rapidly grow to match their large “beak and feet” size. It can take up to four months for flight feathers to develop on eaglets. Feeding occurs several times a day during this time. As the eaglets grow and strengthen, the parents provide whole prey for them to tear up. Wing flapping practice begins as they approach the date of their first flight. Imagine the eagle’s amazement once they are airborne! Usually only one eaglet from the nest will make it to adulthood.

Their life span may be as long as 30 years. A milestone for bald eagles, as well as an outstanding achievement for the Endangered Species Act, was their removal from a federally endangered species to threatened on July 4, 1995. Populations are doing well in many parts of the country although habitat destruction and shooting continue to cause problems. Persistence of environmental contaminants like heavy metals (lead, mercury) and organochlorines (synthetic chemical compounds like DDT or PCB’s) also continue to cause concern.

Common Loon, Gavia immer

The common loon is a large swimming bird. This powerful swimmer can stay submerged for several minutes and cover hundreds of yards during a single dive. Loons are long, slender, and streamlined with legs attached to the rear of their body and webbed feet that serve as efficient propellers. They have a stout, dagger-like bill, relatively solid bones, and float low in the water. Their eyes are adapted for both aerial and underwater vision. These characteristics enable loons to pursue and catch fish underwater. A "preen gland" located on the rump at the base of the upper tail feathers secretes an oil that is worked into the feathers with the bill and is essential in preserving the feathers. Apparently, the oil has many functions: to help keep the feathers flexible and waterproof and to inhibit the growth of fungi and bacteria.

The yodel, or call, of the loon has a haunting quality that is difficult to describe and hard to forget. This call signals territorial ownership of an area. Loons are known to claim and defend one lake as their breeding territory. If the lake is large enough, more than one pair may take up residence with each pair staying on its own turf. Loons breed during the summer in freshwater lakes and ponds. Working together, the male and female build a platform type nest out of aquatic vegetation. One to three eggs are laid from mid-May to late June with both sexes incubating the eggs, in turn, for about 29 days. Both parents help in raising the chicks, feeding them small whole fishes, crustaceans, and bits of plants. Loon chicks take to the water within hours of hatching, and when alarmed will crawl up onto their parents back for a free ride and better protection. Besides a suitable nesting site, common loons also look for a "nursery" pool. This pool contains water clear enough for the chicks to spot their prey, shallow enough to limit the size of predatory fishes and turtles, and rich enough to supply the chicks with food for eleven weeks.

A graceful bird on water, the loon becomes clumsy on land and can barely waddle along. It is impossible for them to take flight from land and even from water they need a long takeoff.
In winter, when the lakes and ponds freeze over, common loons move to rivers, tidal bays, and the open ocean along the Atlantic coast. In the Acadia area, from a distance, they can be mistaken on the ocean for cormorants. The loon's profile is more parallel to the water than the cormorant, and the loon's body sits higher in the water. Today, loon nesting areas are threatened from the wake of motorboats on lakes. Boats on all except one of Acadia's lakes and ponds are restricted to 10 horsepower motors.

Peregrine Falcon

For centuries, peregrine falcons (Falco peregrinus) hunted the skies of the world. Peregrines are one of the most widely distributed birds across the globe, existing on all continents except Antarctica, and utilizing most habitat types. They tend to be migratory, nesting in the north and wintering in the south. Most peregrines will stay true to their name, meaning "wanderer," at least some. However, some of our island birds may not migrate. Falcons are the fastest animals on earth and amazing hunters, well-known for their impressive, in-flight hunting abilities. Specific adaptations for aerial assault, including long narrow wings and narrow tail for speed, sharp claw-like feet (talons) and hooked beak with a notched ridge (tomial tooth) to catch and kill their prey, and even black hooded feathers around the eyes to reduce glare and specialized nasal cones in their nostrils to help them breathe at high speeds all contribute to this unique ability.

Imagine this crow-sized raptor flying high above another bird, then diving (stooping) to attack prey at speeds greater than 200 mph to catch and kill their next meal. If the initial impact doesn't kill the prey, then a quick bite to the back of the neck with its tomial tooth will. For many of us born before the 1980's, this was an extremely rare sight, as these birds disappeared across the globe, and became endangered. Originally nest robbing and trapping for falconry (a practice over 4000 years old) and shooting them as pests were to blame. However British scientists were the first to learn that their world wide and quick demise in the mid-1900's came from the bioaccumulation of DDT (dichlorodiphenyltrichloroethane), a cheap, very efficient and effective insecticide used to kill disease spreading insects after WWII. DDT could not only kill an individual bird in extremely high concentrations, but more importantly, thinned the eggshells to the point of simple breakage, even from the most careful adult incubating the egg. Many breeding individuals would try their whole life to find a mate and nest successfully to have young, but fail every year. The peregrines' disappearance was even more devastating in the northeast of the United States, where the last known nesting pair in Acadia National Park was here in 1956 and, by the 1970's, no successful nesting pairs were found east of the Mississippi River. At this time other birds of prey were also found to be impacted by this chemical, notably the nation's symbol, the bald eagle. As the Endangered Species Act was created in the early 1970's, many raptors, including the peregrine falcon, were added to the list and a massive campaign to protect and bring these birds back began. However, unlike bald eagles where there were at least some nesting pairs around, (less than 30 in the state of Maine alone) there were no falcons to even begin with, and the US Fish and Wildlife (USFW) declared the northeast North American subspecies (Falco peregrinus anatum) extinct.

In 1972, the Peregrine Fund, Cornell University, and the USFW collaborated for an extensive captive breeding program, bringing adult breeding birds from around the world, of all different subspecies, hoping that the juveniles could be reintroduced to the wild and live to re-establish breeding populations of peregrine falcons throughout the United States. This process is termed "hacking," adapted from falconry training methods where young chicks are hatched and raised in captivity (reared by puppets to decrease human imprinting for release into the wild). As they become ready to fly (fledge), the chicks are transferred in a hack box (with a mesh side for the birds to see their new surroundings) to the hack site (safe open area for the birds to fly) where food is dropped down a tube for the birds to eat on their own. Peregrines, however, are cliff nesters, preferring high places to see long distances so they can defend a territory and find food for their young and themselves. These aren't the easiest places to get to for this process, but the

hope was that natural nesting sites where they were released would encourage them to return to the same place or nearby as they became old enough to breed. As mandated by the Endangered Species Act, all federal agencies were to protect endangered species and their habitats. Acadia responded enthusiastically to participate in reintroduction projects for peregrines, as different mountain cliffs in the park were historically known to provide successful nesting habitat and potential Acadia sites were considered the highest priority in Maine. The decision to create a hack site at Jordan Cliffs, on the east side of Penobscot Mountain, was made based on easier accessibility, equidistant between the last known nesting sites on the island, low hiker impacts, the absence of great horned owl activity, and protected jurisdiction of the park. Between 1984 and 1986, 22 captive-hatched chicks were successfully hacked at Jordan Cliffs. More were set to be released in 1987, but the brief return of a sub-adult from previous hacking, halted further release. These birds are so protective of their territory, that they will kill other falcons to protect their home, particularly young birds.

In 1988, a male hacked from Jordan Cliffs in 1986 (named Ganesh) returned to the Precipice cliff, courted a female, finally succeeded in having young in 1991, and continued successfully nesting through 1999, when he disappeared that following winter. Other nesting sites consequently started appearing across the island, including a 1994 Precipice chick nesting at Beech Cliffs in 1995, Jordan Cliffs establishing in 1996, Valley Cove (Eagle Cliffs) starting in 1998, and the newest pair on Acadia's easement land on Ironbound Island in 2009. Every year, the park attempts to band every chick. However, there's only a three to five day window to coordinate park and state biologists, law enforcement rock climbers, support staff and the weather to be successful. About half of the hatched chicks have been banded at the park. Some of the chicks have been found in Boston, New York City, New Hampshire, Washington, D.C., Vermont, New Brunswick, and Cuba (where a bird was shot).

Today, a total of 107 chicks over the last 20 years have been fledged from Acadia National Park., 58 chicks alone from the Precipice, making the site one of the most successful in Maine. Many falcons have acclimated to cities with tall buildings and plenty of pigeons to become just as much a city bird as a country bird. Across the states, reintroduction and recovery were so successful the peregrine falcon came off the federal Endangered Species List in 1999. However, east of the Mississippi River, where their population is recovering from ground zero, most eastern states still have this bird on the state Endangered Species list, including Maine. In 2009, there were 24 nesting territories in Maine with 15 sites successful with 37 fledglings. Acadia National Park protected five territories, including three successful sites with nine fledglings. About 20% of the state's population is protected in this small park. Originally the trails and surroundings of the nest sites were closed to protect these crucially endangered species, but today, because they are so aggressively defensive of their "home" especially with young present, nesting areas are closed for people's protection as well as for the protection of this state endangered bird. Today, whether you are in Acadia or anywhere across the country, you, your children, and your grandchildren once again have the opportunity to see these magnificent airborne hunters in action. Be prepared to be awed and amazed! Rangers and volunteers are present at the Precipice starting mid-May, 9:00 a.m. till noon, weather permitting, until the chicks have fledged and are independent of the cliff, which is usually mid-August.

Field Marks

- Wings: Long, pointed, sickle shaped. All falcons in a dive appear to have sickle shaped wings. Wing shapes depend on the degree to which the bird is soaring or diving. Be careful in making identifications.
- Head: Small with dark black "helmet" with "sideburns."
- Size: Crow-sized: body length: 13-23 inches; wingspan: 31-47 inches, female larger than male.
- Feet: Large (hence the nickname big-footed falcon). Adult: yellow. Immature: light green.
- Plumage: Adult: white to beige breast, with black mottling spots, dark gray back; Immature: streaked breast, brown back.

Behavior

Feeding: Hunts mostly during dawn and dusk in open areas; shores, wetlands, valleys, and islands, except when feeding young when they hunt throughout the day. Primarily eats mid-sized birds (guillemots, grosbeaks, robins, shorebirds, etc.) but has been known to successfully hunt ducks and gulls, occasionally bringing a greater black-backed gull to the nest. It plucks feathers from the prey as it feeds. Occasionally it will eat bats, but rarely a small mammal. Strikes: Usually in mid-air, knocking the quarry to the ground. Less commonly, it will strike and grab prey and fly away.

Nesting: Mostly on precipitous cliffs, but will also nest under suspension bridges and atop tall city buildings. Eggs are laid on a gravel covered ledge that has been scratched in preparation for the clutch. This area is called a scrape. Territorial defense often accompanied by a series of sharp, aggressive, territorial calls,"Kack, kack, kack, kack, kack," before they will attack, dive-bombing and chasing.

You can help protect and promote conservation of peregrine falcons in Acadia by:

- Learning characteristic field marks and behavior to make a positive identification.
- Reporting your sightings to any park information desk.
- Keeping away from areas where peregrines are nesting and respecting trail closings that are marked and/or blocked. Avoid observing the birds from a location higher than the nest site. Adult peregrines generally won't tolerate people around them and may dive-bomb intruders, particularly if they are defending a nest or chicks.
- Reporting any person who fails to do so.

Peregrine Watch: What to Look For at the Nesting Cliff

March to April (courtship): Adult falcons fly close to each other near the nesting cliff, feeding each other, and perform in-flight acrobatics and mating. The falcons are very vocal at this time, including "chup, chup, chip" or "Eeee, chup, chup, chup, chup."

April through May (nesting): One falcon incubates eggs while the other perches nearby or goes off to hunt. Adults may exchange food in mid-air or change places incubating.

June: First sightings of chicks may be seen at the edge of the scrape as “tiny white snowballs.” Their markings will change as they mature and get juvenile feathers. They may flap their wings to build strength for flight as they mature.

July through August (fledging): Young falcons learn to fly then practice flight, exploring farther afield as they gain confidence and maturity. Watch for them flying above the cliff or other parts of the island. They may perch anywhere on the cliff’s ledges or on dead trees.

Fall and Winter (migration): Peregrines from Greenland and Canada migrate through Mount Desert Island from August through October. Some may spend the winter on Mount Desert Island depending on the severity of the winter or the availability of prey. Resident nesting peregrines tend to “wander” once again for winter, but with a milder winter and good food availability, one might stay.

Seabirds

Acadia's numerous land holdings also include many off-shore islands that are critical habitat for nesting seabirds and sea mammals. These seabirds, which lay only a small number of eggs, can nest on exposed rocky ledges, in crevices, burrows, or in vegetation. Breeding on these islands is one strategy to protect them against predation. Many have lifespans of 20 to 30 years. Although they live in social groups, most are monogamous. Monogamy suits the demands of raising chicks with voracious appetites as both parents are needed for foraging and protection. While avoiding large terrestrial predators by nesting on ledges and islands, predation trouble still comes for many seabird eggs and chicks from gulls and bald eagles. Disruption to nesting sites occurs when people do not use caution. Nesting islands should not be visited from April 1 to August 15 and many federal and state-owned islands are closed to the public. Even well-meaning visitors can frighten birds, causing them to abandon their nests, leaving the eggs and chicks open to predation.

Double-Crested Cormorant

Phalacrocorax auritus—Often seen on rock ledges with their black wings outstretched like laundry lines, cormorants are a relative of the pelican. When swimming, cormorants can be identified by their long curved neck rising from the water while their body almost entirely disappears. Their slender bill is held upright at a slight angle. They are well adapted for diving for fish and can swim underwater in search of their prey, sometimes up to 100 feet.

Common Eider

Somateria mollissima—The male eider duck is primarily white with striking black markings on its sides, tail, and top of its head. It is often seen floating with many other males in large rafts. Female eiders, which are a mottled brown color, build nests on islands in colonies with other eiders. Eiders seem to prefer islands where gulls already nest, despite the fact that gulls prey on eider eggs and chicks. After laying four to six eggs, the females incubate the eggs for 25 days, never leaving the nest. After the eggs hatch, the young eiders have a perilous journey to the water. Great-black backed gulls prey on the chicks and many do not make it to the water. Once there, they are protected in creches with one dominant female who is not necessarily the mother of the chicks. Twelve to 15 chicks can be seen following this one female. Other females become peripheral females in the group.

Black Guillemot

Cepphus grille—A relative of the puffin, visitors have a much better chance of seeing this little bird on a local boat cruise. Guillemots are small black birds with a conspicuous white patch on each wing. Red feet and legs and a bright red mouth interior are striking. They sometimes can be seen "flying" underwater using their wings to help swim. Their nests are in crevices, under boulders or cobbles, or on rocky ledges. They only lay one to two eggs.

Herring Gull

Larus argentatus—This is the most common gull, easily identified by its gray wings and black wing tips. A red spot on their bill is a visual cue for the young who peck at it, causing the adult to regurgitate food for the chick. They build shallow nests from grass and seaweed in the open where they have a view of their surroundings. Two to three eggs are usually laid. In the early 1900s gull numbers declined dramatically from hunting and egg collecting, but today there are over 200,000 breeding pairs off the coast of Maine. They are considered a nuisance bird

because they take advantage of any food source, like garbage dumps and visitors who are unaware that the birds should not be fed, and in turn, are predators on other seabirds.

Great-Black Backed Gull
Larus marinus—This seagull is much larger than the herring gull and has a wingspan of up to 65 inches. It is characterized by its black wings, giving it the name "ministers" of the coast. This gull was completely exterminated off the coast in the 19th century, not re-colonizing again until 1926.

Osprey
Pandion haliaetus—Also known as a "fishhawk," osprey have a remarkable ability to sight fish from 30 to 100 feet above the water. They dive from mid-air and grab the fish in their sandpapery talons, turning the fish head to the front so it is more aerodynamic. Ospreys have a brown mottled appearance with a white head and a dark band by its eye. When in flight, the white underside of each wing is visible and forms a slight "v." They have a large wingspan of up to six feet. Nests, preferred on ledges or platforms are built by the male and female together and are continuously used. One, on the side of Sutton's Island just outside of Northeast Harbor has been in existence for decades. Two or three eggs are laid and the young are ready to fly around 7–8 weeks old. By 10 weeks they are ready to try fishing. Pesticide use in the 1950s and 1960s, particularly DDT, weakened the shells of these birds as well as other raptors like the peregrine falcon and bald eagle, causing their population to decline. Today their numbers have rebounded.

ACADIA'S INTERTIDAL ZONE

Introduction to the Zones

No other place on earth experiences such drastic physical changes daily as this narrow strip caught between the ocean and land. The tide along Acadia's coast ranges from 8 to 12 feet. The tide creates habitats where organisms have adapted to a variety of conditions that can occur all within a few feet of each other. Twice daily, the rise and fall of the tide leaves these intertidal organisms exposed or submerged. Tide pools are perhaps the most amazing aspect of the shore. Natural basins and crevices which retain pools of seawater as the tide recedes are called tide pools. These crevices in the rocky surfaces provide places for an abundance of animals to hide and protect themselves. Some will spend their entire lives in a tidepool, while some are temporary visitors—coming and going with the tides. Others stay only part of their life cycle. Whether in a tidepool or a mudflat, the plants and animals here are well adapted for harsh conditions. Depending on their specific tolerance of exposure, "zones" have formed, named for their dominant species.

Splash Zone

The highest zone along the coast is the splash zone or the black zone. The names offer clues about the place. Found above the usual high tide line where the waves may splash the exposed rock, it appears black. Its color comes from an organism called blue-green algae (which is actually black and a cyanobacterium!).This zone is very slippery when wet. Not much lives in this zone except rough periwinkles. These creatures are so small that you might not notice them at first. But once you begin to see them in the cracks and crevices, their numbers might surprise you.

The Barnacle Zone

Continuing toward the water, you will next enter the barnacle zone. Here the whitish conical shells of these marine creatures cover the rocks. Many boat or dock owners consider barnacles a nuisance to be scraped off. However, closer study reveals that these are fascinating animals. Barnacles begin their lives in a significantly different form. They are tiny members of the zooplankton (animal plankton) which is washed about by waves and tide. Eventually, they must find a spot to settle for the rest of their lives. Living near other barnacles seems particularly beneficial. From our human point of view, living in the intertidal zone might seem rather inconvenient. But for the barnacles, this location provides some advantages. During high tide, they can open their shells to feed or reproduce. During low tide, the exposed creatures must close their shells to avoid drying out. While the water removes food and needed moisture, it also removes many marine predators. This zone also supports both dog whelks, which feed on barnacles, and common periwinkles, which feed on algae.

Rockweed Zone

While animals characterize the barnacle zone, the rockweed zone is characterized by plants. The most obvious group, the rockweeds, includes knotted wrack and bladder wrack. These seaweeds attach to the rocks and drape over them at low tide. As the tide rises, little bumps or air bladders help the plant float toward the surface of the water. This allows more sunlight to reach the plant for photosynthesis. Moving the rockweed aside, you can expose the animals staying hidden and moist under it. (Be sure to replace the plants when you finish looking. The

animals need their protection.) Two introduced species, green crabs and common periwinkles, thrive here. Dog whelks, smooth periwinkles, and limpets move over the rocks. (Don't try to pick up the limpets. They need to stay in their chosen places). Likewise, blue mussels should remain where they have anchored themselves to a rock. Their byssal threads are very strong and are being researched for possible insights into dental adhesives.

Irish Moss Zone

The Irish Moss Zone commonly merges with the zones above and below it. The characteristic plant in this area grows in small but thick patches and has amazing iridescent tips. If the plant is removed from the water, it loses this coloration. Irish moss is harvested and used as a thickener in ice creams, chocolate milk, and other products. (Look for carrageenan in ingredients). Dulse and sea lettuce also grow here.

Dulse is another red algae. It is sometimes dried and sold in strips as a chewy snack, or shredded and used as a seasoning. Sea anemones and nudibranchs, or sea slugs, might be found tucked into the rocky crevices. Anemones attach themselves to the rocks and use their sticky tentacles to sting small prey that swims or drifts by. Nudibranchs can eat anemones. Some of them can transfer the anemones stinging cells to projections on their own backs to serve as protection from predators.

Kelp Zone

The next and final zone is the kelp zone. Here, as you might imagine, the kelps grow. These brown seaweeds almost always remain under water. They have three main body parts: the holdfast attaches the plant to the rock, the stipe resembles a stem, and the blade looks like a leaf. Within the kelps, there is wonderful variation. Imagine what the horsetail kelp and sea colander look like. Many of the tidepoolers' favorite creatures such as the sea star, sea urchin, and sea cucumber reside in this zone. All these animals are echinoderms, meaning they have spiny skin and radial symmetry (usually with five sections). Rock or Jonah crabs live here where lobsters might rarely be found. As you can see, within the tidepools, an amazing amount of life exists in very concentrated areas. The zone divisions allow different organisms to find their appropriate niche. For example, competition between plants is minimized because the different color algae photosynthesize with different wavelengths of light. Green algae grow in upper zones while red and brown algae grow in progressively lower zones and use the light that reaches their depths.

Marshes, Mudflats, and Other Muck

Rocky shores are the most obvious coastal feature, but in quiet coves one can find mudflats. Mud collects in estuaries, marshes, mudflats, and other places with still or slow moving water such as Ship Harbor mudflat. Rivers and streams wash down the particles of mud. Waves and currents then move them about. But as the water loses energy, it drops its larger loads until, eventually, even the mud settles out. The mud that settles in the intertidal zone is covered at high tide and exposed at low tide. Gulls, herons, and other birds can be found at low tide feeding in the mud, extracting clams and marine worms.

Mud is a suitable habitat for these invertebrates, offering them protection. They are less likely to be found by various predators, and less likely to be dried by the sun or wind when the tide recedes. Furthermore, the mudflat's environment, not suitable for other species, limits

competition faced by its inhabitants. But living in the mud does have some disadvantages. For one thing, there is not much oxygen in mud. This condition suits the anaerobic bacteria that live there. As the name implies, this bacteria does not need oxygen. But other mud dwelling animals need more than is readily available. What to do? Anyone who has been clam digging knows that some creatures in the mud have their own siphons or tunnels to the surface. Through this opening, the critters below can access oxygen and water. The water can bring food and wash away waste.

How the Tide Works

Both tidepools and mudflats are greatly influenced by the action of the tides. Around Acadia National Park, the tide has a general fluctuation of eight to 12 feet twice daily (reaching 14 feet at certain times). A 12 foot change might not seem particularly significant in the middle of the Gulf, but along the shoreline it's quite important. Imagine your home filling with 12 feet of water twice a day, or a 12 foot deep pond draining twice a day. The plants and animals that live along the Gulf's edge face such dramatic changes. But what causes these tides?

Short answer: Tides are the result of the movement of water due to the gravitational attraction between the Earth, Sun, and Moon. A slight bulge forms in the ocean as each locality on the Earth rotates through the Moon's gravitational pull. The centrifugal force of the Earth's rotation creates another bulge on the opposite side of the Earth. Where the bulges occur, it is high tide; where the water is "flattened out," it is low tide. Because the Moon revolves around the Earth in a 28 day cycle, the tides change by 50 minutes each day. The Sun's gravitational pull has an effect on tides as well, although not as pronounced as the Moon's.

Complicated answer: A more complicated answer includes many factors such as the shape of the water basin and the direction of the Earth's rotation. A simplified answer focuses on the gravitational forces between the Earth, Moon, and Sun. Any two bodies in space will exert a gravitational pull on each other. The Earth and Moon are two such bodies. The Moon is much smaller than the Earth but still influences it. Over 70 percent of the Earth's surface is covered with water which is pulled toward the Moon. Even the ground responds to this gravitational pull, but is less noticeable. At the same time, there is a corresponding bulge on the backside of the Earth. Explanations for this bulge vary and involve the Earth's rotation, centripetal/ centrifugal force and the result of land under water being pulled toward the Moon. In a simplified model, any place on the earth's surface will pass through both of these bulges during each 24 hour revolution. Each bulge results in a high tide. So, we have two high tides each day: one when we are close to the Moon, the other when we are far from it. The spaces between the bulges have had the water pulled from them, resulting in two low tides each day. These high and low tides do not occur at a set hour every day. Instead, each one happens about 50 minutes later than it did the day before. Why? The earth completes a rotation each day while the moon's revolution around the earth requires approximately 28 days. Imagine standing at Ship Harbor with the moon directly overhead. If you stayed for 24 hours, you'd experience one complete rotation of the Earth. When you and Ship Harbor returned to your "starting point," the moon would no longer appear overhead. Instead it would have moved about 1/28th of the way around the Earth. Therefore, the Earth must continue revolving for approximately 50 minutes to "catch up" with the Moon. The Sun also influences the tides. Being so far away, it plays less of a role than the moon. But, because of its large size, it still has quite a pull. When the Earth,

Moon, and Sun are all in line (at each full moon and new moon) the high tides are extra high and the low tides are extra low. These extreme tides are called spring tides. (They have nothing to do with the season of spring, but come from the Old English word meaning to spring up).When the Sun and Moon are at right angles to each other (at the first and third quarter moons) their pull on the tides works against each other. At such times, the tidal change is the least significant. These small tides are called neap tides (and come from the same word as nap).

The diverse sea life in the intertidal zone is a valuable resource. The National Park Service at Acadia National Park is charged with the protection of this fragile area. We invite investigation but ask that all organisms remain undisturbed. Please leave behind any plant or animal (living or dead), sand, rocks, or any other natural material. Enjoy and explore a unique region, but take part in the protections and preservation of this habitat.

How to Tidepool Safely

Suggestions for a Low Impact Visit to the Shore

Always consult a tide chart before planning your trip! Also take into consideration that on the day of your trip, if seas are rough, tidepools may not be as exposed and extra caution for safety is advised.

Park staff encourages visitors simply to explore and watch intertidal animals rather than disturb them from their natural environment. You can learn a lot by watching them in their habitat! However, if you choose to allow your group close up inspection of some of these critters, please follow these guidelines:

- Never force an organism from its home if it is reluctant to “let go.” Sea urchins’ and sea stars’ delicate tube feet are easily torn. Slow, gentle nudging may release an animal’s grip. Limpet shells are easily broken and should be left in tidepools undisturbed.
- Never remove excessive quantities of seaweed.
- Keep cold water in the containers at all times.
- Limit the number of common organisms examined. If possible, select only one organism of each species for examination.
- Return organisms to the exact locations they were found.
- If examining a mudflat, please ask your group to be considerate about digging. If any digging takes place, it should be done as a demonstration, rather than having each individual in an entire group scrounging beneath the surface to see what they can find.

Tips for Exploration

Look underneath seaweeds; they provide great moist environments where creatures (especially crabs) may hide while the tide is out!

- Animals may hide if water is disturbed. Observe tidepools carefully before reaching in to explore.
- Allow sufficient time for independent exploration. Discovery brings out magic.
- Have fun and be safe. Remember, seaweed is slippery!

Common Intertidal Animals

Blue Mussel

Mytilus edulis—A common tidal creature, the blue mussel's two identical shells joined by a hinge identify it as a bivalve. They grow to about 4 inches. Tough byssal threads help secure the blue mussel to rocky surfaces. Food is ingested after slightly opening the shell to allow water to move through its body cavity.The blue mussel then extracts microscopic plants and animals, trapping them on sheets of mucus.

Common Periwinkle

Littorina littorea—This small snail is well known to tidepool explorers. Scattered everywhere in the upper and mid tidal area, the periwinkle is identified by its somewhat flattened conical shell in shades of olive to gray. The elliptical opening of the periwinkle is protected by a hard plate (operculum) that closes to protect the snail from drying out or from predators. Periwinkles inch along tidepools with a muscular foot, and feed by scraping algae off of rocks using its radula, a tongue-like appendage with rough pointed teeth.

Dog Whelk

Thais lapillus—Found in the mid tidal area, the dog whelk is distinguished from the periwinkle by its pointed spiral shell, colors of yellow, orange, cream or brown appearing in bands, and the obvious groove in the dog whelk's shell opening. This groove is used for the dog whelk's radula, adapted to drill through mollusk shells to eat the animal inside. Small, rice-like grains in clusters attached to the sides of tidepools are the dog whelk's eggs.

Green Crab

Carcinus meanus—This relatively small crab, only 3 inches in size, is found in upper tidepools, mudflats, and salt marshes. Despite the small size, they can give quite a pinch. It is a scavenger that feeds on decaying plants and animals. Look for it under rockweeds —watch it walk sideways to get away!

Sea Star

Asterias vulgaris—Although immediately identified by its five arms, there are many variations.They can grow up to 8 inches and come in hues of orange, red, purple, brown, and yellow. Hundreds of tube feet, operated by the sea star's "hydraulic system," move the animal along in the lower tidepools. Sea stars are predators, and eat animals like mussels by encircling the shell with its arms and then pulling the shell open. The sea star places its stomach inside the shell and then ingests the animal.

Sea Urchin

Strongylocentrotus droebachiensis—Appearing as green pin cushions, sea urchins are found in the lower tidepools.A relative of the sea star, the sea urchin also has five arms, easily seen by looking at one of the empty shells commonly found broken on the rocks. (Sea urchins are a favorite food of sea gulls!) Sea urchins move with tube feet and feed by using five triangular teeth to scrape algae from rocks.

Sea Cucumber

Cucumaria frondusa—An odd creature, this leathery animal can look like a small fat football or a long rubbery cucumber. Five rows of tube feet connect this animal to the same family as the

sea star and sea urchin. Tentacles that are often hidden from view protrude to feed on microscopic plants from the ocean waters. When seriously disturbed or threatened the sea cucumber may try to escape by throwing up its internal organs. The amazing thing? They will regenerate their organs, just as a sea star can re-grow its arms.

Hermit Crab

Pagurus sp.—The small hermit crab looks for its own home by choosing empty periwinkle and dog whelk shells to fit its soft abdomen, providing it with protection. Its five pairs of claws are well adapted for its life in a borrowed home— the front two are for grabbing, the two middle pairs are for walking, and the last two pairs help the snail stay snug inside the shell.

Limpet

Acmaea testudinalis—Appearing as a small conical hat on tidepool rocks, this little snail forms a strong attachment to the rocky bottoms and sides of tidepools with its muscular foot. It clamps down tight to withstand both crashing waves and periods of exposure. Trying to remove a limpet from a tidepool could seriously injure the animal.

Rock Barnacle

Balanus balanoides—Common in the upper intertidal areas, barnacles blanket the rocks creating a whitish stripe that help distinguish one of the intertidal zones. Barnacles have a six-sided conical shell which protects the small crustacean—a relative of crabs, lobsters, and shrimp. When the tide comes in, barnacles feed by opening the hinged plates on top of its shell extending its six pairs of feathery feet to filter microscopic plants and animals from the water.

Common Intertidal Plants

Kelps

Various—Kelps are large brown algaes that come in a variety of species. All kelps have a holdfast to attach the kelp to rocks, a stipe (similar to a stem), and a blade. The long and wavy large sugar kelp that grows to 10 feet in length, the odd sea colander that has a hole-riddled blade, and the horsetail kelp, that has long wavy fingers can all be found in the lower tidepools where the tide rarely leaves them exposed.

Bladder Wrack

Fucus vesiculosus—Dominating the mid tidal range, bladder wrack is an olive brown algae with flattened blades up to two feet in length. Its name comes directly from the air bladders that are paired along the blades. Swollen receptacles at the end of the blades are for reproduction.

Knotted Wrack

Ascophylllum nodosum—Knotted wrack has narrow leather blades and is found in association with bladder wrack. Its tangled clumps create dense forests for intertidal animals to hide in. Like the bladder wrack it also has air bladders which help the seaweed to float during high tide. Both bladder wrack and knotted wrack make up the rockweed zone, one of the five distinct zones in tidepools.

Irish Moss

Chondrus crispus—A short and frilly red seaweed, Irish moss is found in the lower intertidal zone. Its color is obvious during low tide when brownish-red bands of Irish moss can be seen.

ACADIA'S PEOPLE

Collections and Research

Most visitors may think of Acadia as only a "natural" park, but it holds a rich cultural heritage as well. Over 865,000 objects and documents are in the collection from both Acadia National Park and Saint Croix Island International Historic Site (overseen by Acadia National Park). Items in the collection date from 1596 to 2011 and include the following:

- Archeological materials (prehistoric and historic) related to ancestral Wabanaki sites in the park, the Carroll Farm Homestead, Islesford (Little Cranberry Island), and the settlement of Saint Croix Island
- Historic artifacts and archival documents pertaining to New France, George B. Dorr (one of the founders of Acadia National Park), the Cranberry Isles, the Mount Desert Island Region, the Carroll family of Southwest Harbor, Maine Acadian Culture, park administrative history, and genealogy of the first settlers of the Cranberry Isles
- Plant and animal specimens related to Acadia National Park, including the William H. Proctor invertebrate and the Harold White dragonfly/damselfly collections

Islesford Historical Museum

Founded by William Otis Sawtelle in 1919 and located on Little Cranberry Island. The permanent museum exhibits explore life in the Town of Cranberry Isles (a set of five islands located in the Gulf of Maine) during the 19th century, when schooners were the mode of transportation and oceans were the highways. Special exhibits are often displayed. The museum is open mid-June to late September and admission is free.

William Otis Sawtelle Collections and Research Center

Located in Bar Harbor at park headquarters, the center is dedicated to William Otis Sawtelle, founder of the Islesford Historical Museum on Little Cranberry Island. The center houses historic artifacts, archival documents, and natural history specimens currently not on exhibit at the Islesford Historical Museum or the Sieur de Monts Nature Center. The museum items represent the natural and cultural history of Acadia National Park and Saint Croix Island International Historic Site; the Carroll Homestead of Southwest Harbor; George B. Dorr, one of the founding fathers of Acadia National Park; The Town of Cranberry Isles; "New France;" and the administrative history of Acadia and Saint Croix. Over 865,000 artifacts, documents, and specimens, dating from 1596-2011, are in the museum collection.

The center is open, by appointment, year around. Access to the collection for scientific research, genealogical study, or development of a publication is permitted. Prospective researchers need to contact the park's cultural resources manager for an appointment.
To arrange an appointment to conduct research or if you have research questions contact:
Acadia National Park, W.O. Sawtelle Center, P.O. Box 177, Bar Harbor, Maine 04609
(207)288-8728 or e-mail: **rebecca_cole-will@nps.gov**

Archival documents in good condition (determined by the museum curator) may be photocopied for a small fee. Photographs (in good condition) may be reproduced for a fee (contact the curator for current prices). Artifacts may be loaned to other institutions for exhibitions.

Mount Desert Island History

American Indian peoples have inhabited the land we now call Maine for 12,000 years. Today four distinct tribes—the Maliseet, Micmac, Passamaquoddy, and Penobscot—are known collectively as the Wabanaki, or "People of the Dawnland." Mount Desert Island and Acadia National Park have remained in the center of Wabanaki traditional homelands for thousands of years. For centuries before Europeans arrived, the Wabanaki traveled here in seaworthy birchbark canoes. Setting up temporary camps near places like Somes Sound, they hunted, fished, gathered berries, harvested clams, and traded with other Wabanaki. Some called Mount Desert Island "Pemetic," meaning "range of mountains."

In the nineteenth century, Wabanaki people came to sell their handmade ash and birchbark baskets to wealthy travelers, and to harvest precious basket-making resources. Summer tourists and summer residents alike were entertained by elaborate Wabanaki dance performances at venues such as Sieur de Monts and the town of Bar Harbor. Led by Wabanaki guides, canoe trips around Frenchman Bay and the Cranberry Islands were a convenient and pleasurable way for visitors to reach the outer islands.

Today, each tribe has a reservation and government headquarters located within their territories throughout Maine. Still, Wabanaki people have a unique relationship with this land, from the first rays of dawn seen from Cadillac Mountain to the last light of dusk slipping behind Bar Island. Many Wabanaki people today come for much the same reasons as others—to hike the mountain trails and enjoy the striking scenery. Yet some still come to gather precious sweetgrass, sell handmade baskets, and to show respect for this magnificent landscape, as their ancestors did for thousands of years.

New France

The first meeting between the Native peoples in Maine and the Europeans is a matter of conjecture. L'Acadie, the French title for this region, most likely originated from the name Arcadia. That title was bestowed in 1524 by Italian navigator Giovanni de Verrazano to describe present-day Chesapeake Bay and the Outer Banks of North Carolina shore scenery. It was a cartographer's mistake that placed Arcadia well north of the coastline that had reminded Verrazano of ancient Greek landscapes with beautiful green forests.

King Henry IV gave Pierre Dugua, the Sieur de Mons, authority over the 40th-46th parallel of North America, a land grant encompassing present-day Montreal to Philadelphia! Dugua and his navigator Samuel Champlain marked one of the first European records of this region. Champlain led the expedition that landed on Mount Desert on September 5, 1604 and wrote in his journal, "The mountain summits are all bare and rocky… I name it Isle des Monts Desert." Champlain's visit to Acadia sixteen years before the Pilgrims landed at Plymouth Rock destined this land to become known as New France before it became New England.
While Dugua and his crew established a settlement on Saint Croix Island along the present-day Maine/New Brunswick border, Samuel Champlain set sail down the coast with his crew and two Native guides. Although the Saint Croix settlement failed, the name bestowed by Champlain upon this island, the "Isle des Monts Deserts", has endured.

In 1613, a French Jesuit settlement believed to have been established at the mouth of Somes Sound was also ill-fated. Instead of the harsh weather elements that the Saint Croix settlement succumbed to the Jesuit colony was attacked by the British. The English victory at Fernald Point doomed Jesuit ambitions on Mount Desert Island, leaving the land in a state of limbo. The French were firmly entrenched to the north, while the British settlements in Massachusetts and southward were becoming increasingly numerous. No one wished to settle in this contested territory and for the next 150 years, Mount Desert Island's importance was primarily its use as a landmark for seamen.

There was a brief period when it seemed Mount Desert Island would again become a center of French activity. In 1688,Antoine Laumet, an ambitious young man who had immigrated to New France and bestowed upon himself the title Sieur de la Mothe Cadillac, asked for and received a hundred thousand acres of land along the Maine coast, including all of Mount Desert Island. Although Cadillac and his bride resided here for a time, they soon abandoned their hopes of establishing a feudal estate in the New World. Cadillac later gained lasting recognition as the founder of Detroit.

The French took advantage of the region's islands and crooked coastline for hiding tall frigates that would surprise and attack British ships. "Frenchman Bay" and other French names reflect the area's historic French influence. As you enjoy the park you will find any other place names that commemorate the park's French influence.

New England

In 1759, after a century and a half of conflict, British troops triumphed at Quebec, ending French dominion in Acadia. With the Wabanaki scattered and the fleur-de-lis banished, lands along the Maine coast opened for English settlement. Governor Francis Bernard of Massachusetts obtained a royal land grant on Mount Desert Island. In 1760, Bernard attempted to secure his claim by offering free land to settlers. Abraham Somes and James Richardson accepted the offer and settled their families at what is now Somesville. In the aftermath of the American Revolutionary War, Bernard lost his claim, and the newly created United States of America granted the western half of Mount Desert Island to John Bernard, son of the governor, and the eastern half of the island to Marie Therese de Gregoire, granddaughter of Cadillac. Bernard and de Gregoire soon sold their landholdings to nonresident landlords. Their real estate transactions probably made very little difference to the increasing number of settlers homesteading on Mount Desert Island.

By 1820, farming and lumbering vied with fishing and shipbuilding as major occupations. Settlers converted hundreds of acres of trees into wood products ranging from schooners and barns to baby cribs and hand tools. Barrel staves shaped from island lumber, ice cut from frozen coves and nearby lakes, cobbles collected from beaches for roads, granite quarried for buildings, and fish harvested from the bays were transported by the trucks of the day, sailing ships, to Portland, Boston, and New York. In 1837, six hundred sets of sails were counted dotting Frenchman Bay. By 1850, the now familiar sights of fishermen and sailors, fish racks and shipyards, revealed a way of life linked to the sea.
Shipbuilding was a common sight in many of the harbors and coves. Towering white pine trees were perfect for masts. Schooners, a ship with at least two main masts, were born of a need for fast-moving vessels, able to race back from fishing excursions at the Grand Banks to get top

dollar for their catch. Schooners also served well in smuggling illicit goods! Eventually, schooners were replaced by steamships, and today the bay sees mostly pleasure craft, whether private boat or large passenger cruise lines. Schooners still appear though, allowing a glimpse into days gone by.

Beginning in the mid-1800s, Mount Desert Island was transformed into a well-known vacation spot with Bar Harbor eventually serving as its hub. Those with time to enjoy adventure and relaxation, such as clergy and professors, journeyed here. Artists like Frederick Church and Thomas Cole of the Hudson River School, painted mountain scenery and crashing surf. Writers poetically expressed the island's charms. These expressions of the island's beauty lured more people to its shores. Hotels sprang up, including one of the largest in Bar Harbor, The Rodick House, with 600 rooms.

Those who could afford to build cottages—multi-room mansions that gave Bar Harbor's shoreline the nickname "Millionaire's Row." From 1890-1915, Bar Harbor replaced fashionable Newport, Rhode Island as the summer resort. This opulent era slowly closed as the effect of income taxes, the Depression, and two World Wars took their toll on the financial wealth of many of the summer residents. Cottage upkeep and taxes became cost prohibitive and by the early 1940s, many were torn down or sold at a fraction of their worth. A massive fire in 1947 razed 67 mansions, perhaps to the relief of some of their owners.

George Dorr and the Formation of Acadia National Park

George Dorr was a member of the Hancock County Trustees of Public Reservations, an early 1900s organization of summer residents alarmed at the rate of development on Mount Desert Island. In response to their concern, through donation and the use of their own private funds, almost 6000 acres were in the trustees' possession by 1912.The eventual possibility of loss of their tax-exempt status coupled with the understanding of the intrinsic value of their land holdings, spurred Dorr to petition political players in Washington D.C. in 1913 to accept the lands as a national monument. Why a national monument and not a national park? An act of Congress is needed to make a national park while a national monument only needs the signature of the president. The latter choice offered a better probability of success and in 1916, President Woodrow Wilson created Sieur de Monts National Monument.

The original charter creating the park stated that the acquisition of lands would only occur through donation and not with federal funds. Two outcomes have since resulted. One, private landowners have demonstrated their love of Mount Desert Island and Acadia National Park through generous gifts of land. The approximately 49,000 acres that comprise Acadia are almost all from land donation. Second, land donations have given a jigsaw puzzle shape to the park boundary. In 1986 a permanent boundary was established for Acadia. Land parcels of significant importance to preserve were purchased with federal funds or traded for with park-owned land of lesser ecological value.

Historical Timeline

3000 BC–1900 Although deep shell heaps testify to Indian encampments dating back 5000 years in Acadia National Park, prehistoric records are scanty. The first written description of Maine coast Indians, recorded 100 years after European trade contacts began, describe American Indians. Members of the Wabanaki tribe, the Penobscot and Passamaquoddy lived in this area.

1524 Giovanni Verazzano, an Italian navigator for the French crown sailed along the North American coast, placing the name "Arcadia" on areas between New Jersey and North Carolina. Map makers later mistakenly placed that title between the 40th and 46th parallel (between present-day Philadelphia and beyond Montreal).

1604–1605 Pierre Dugua, Sieur de Mons, after being granted authority from King Henry IV of France over all of North America from 40th-46th parallel, set sail with his navigator Samuel Champlain, and established the settlement of St. Croix on an island along today's Maine-Canadian border. While on a scouting mission along the coast, he wrote about the island he named "Isle de Monts Deserts."

1613 Records indicate that it may have been at Fernald Point in the mouth of Somes Sound where a group of French Jesuits, dispatched by Madame de Guerchville of France, established the settlement of Saint Sauveur. The settlement was short-lived, falling to the British. For the next 150 years, both the British and French would claim this region of North America for their own.

1622 The English lay claim to Mount Desert Island when Sir Robert Mansell, Vice Admiral of His Majesty's Navy, purchased the island.

1688 Self-proclaimed nobleman, Antoine Lamuet, Sieur de la Mothe Cadillac, received a huge land grant from the French Crown including Mount Desert Island. After visiting here, he went on to found the present-day city of Detroit. Yes, there is a connection between the car and the nobleman!

1759 The French and Indian Wars ended after nearly a century and a half of conflict. British troops triumphed at Quebec, ending French dominion in the Acadia region.

1760 King George III of England gave Francis Bernard, the last British governor of Massachusetts, a royal land grant on Mount Desert Island.

1761 Bernard offered free land to Abraham Somes and James Richardson who settled their families at what is now Somesville.

1790 Census records indicate that 800 settlers lived on Mount Desert Island.

1820 Census records indicate that 1300 settlers lived on Mount Desert Island. Farming and lumbering vied with fishing and shipbuilding as major occupations.

1840 First steamship wharf at Clark's Point in Southwest Harbor.

1860s–1870s Artists and journalists begin to visit Mount Desert Island, depicting the beauty of the island in both paintings and prose. Two of the most famous artists, Frederic Church and Thomas Cole of the Hudson River School spent summers here. The presence of these visitors issued in the age of the rusticators on the island, as farmers and fishermen opened their homes to accommodate them.

1870 The entire first growth of forest had been removed from Mount Desert Island. Quarrying operations for the beautiful pink granite began at Hall Quarry on the west side of the island.

1880s Hotels begin springing up on the island to accommodate the influx of visitors. Seventeen hotels were in Bar Harbor, with many others in Seal Harbor, Northeast Harbor, and Southwest Harbor.

1880s–1900s The wealthy make Mount Desert Island, in particular the eastern side, a playground. Multi-room mansions called "cottages" are built, and Bar Harbor replaces Newport, Rhode Island, as the fashionable capitol of where to "summer."

1901 The Hancock County Trustees of Public Reservations is formed by Charles Eliot, George B. Dorr, and a handful of other summer residents who became concerned with the rapid development of Mount Desert Island. Their goal was to begin protecting land in its natural state.

1913 The Trustees, having acquired 5000 acres, turn to the federal government to create a national park on Mount Desert Island. It marks the beginning of George B. Dorr's many visits to Washington DC to advocate for the formation of the park.

1913–1940s John D. Rockefeller Jr. begins building carriage roads. Once the park is established, he donates land parcels with carriage roads in place, resulting in over 11,000 acres of land and 51 total miles of carriage roads (45 in the park).

1916 President Woodrow Wilson announces the creation of Sieur de Monts National Monument. George B. Dorr is the first superintendent. Original charter dictates that lands are only to be donated, not purchased with federal funds.

1919 Sieur de Monts National Monument becomes Lafayette National Park, the first national park east of the Mississippi.

1929 Schoodic Peninsula is donated to the park. Name is changed to Acadia National Park.

1930s–1940s Decline of the cottage era. The income tax, World War I, and the Depression take away much of the unbridled wealth of many summer residents. Cottages begin to be boarded up or razed.

1947 Over 17,000 acres burned on the eastern side of Mount Desert Island, 11,000 of which were in the park.

1990s Park's final boundary legislation directs park to purchase or land swap for parcels of specific land critical to protect. Once these parcels are acquired, no more lands will be added to the park, either by donation or purchase. Park begins to take on conservation easements by private landowners. National parks become more important in the national eye as not only a place for recreation and respite, but critical for research and to use an indicators of environmental problems Acadia National Park is a crucial barometer of environmental degradation such as air quality, declining amphibian populations, endangered species, and more.

Today
Over two million visitors a year enjoy Acadia National Park, thanks in part to all of the hard work, dedication, and foresight of those that came before.

Who's Who at Acadia

Giovanni de Verazzano: An Italian navigator sailing for France in 1524,Verazzano sailed along the eastern seaboard of present day Northeast and mid-Atlantic states.A cartographer's error placed Arcadia, the name Verazzano called some places along the shoreline of Virginia and North Carolina, to the region between present-day Philadelphia and Canada.

Pierre Dugua Sieur de Mons: A French nobleman commissioned as Lieutenant Governor of New France by King Henry IV in 1603.As Lieutenant Governor, de Mons gained authority over all North America between the 40th and 46th parallels, from present-day Philadelphia to Montreal. Sieur de Mons, his navigator Samuel Champlain, and his crew sailed to the New World in 1604, establishing an ill-fated French settlement on the Maine-Canada border at St. Croix.

Samuel Champlain: In September of 1604, Samuel Champlain, navigator for Sieur de Mons, set sail southward from the settlement of St. Croix in the mouth of the St. Croix River separating present day Maine and Canada. Along with 12 soldiers and two Indians, Champlain scouted the indented coast. The sight of a large island with several prominent rounded mountains prompted Champlain to note the island in his journal calling it the "Isles des Monts Deserts."

The Wabanaki: The native peoples of eastern and coastal Maine, Prince Edward Island, New Brunswick, and Nova Scotia. Consisting of five tribes, the Penobscot, the Passamaquoddy, the Micmac, the Maliseet, and Abenaki, their population was estimated around 32,000 before European arrival. Because of European-introduced diseases, 75% of tribal members died in the early 1600s.The Penobscot and Passamaquoddy tribes lived in the Acadia region.

Madame de Guerchville and Jesuit colonies: A French supporter of the Jesuits, Guerchville purchased Sieur de Mons land grant with the intention of settling Jesuit colonies in New France. A group of Jesuits from the Port Royal colony in present-day Canada were believed to

have settled in the mouth of Somes Sound. The colony, established in 1613, and named St. Sauveur was short-lived, destroyed by the English.

Antoine Lamuet, Sieur de la Mothe Cadillac: A self-proclaimed French nobleman, Cadillac received a land grant of Mount Desert Island from King Louis XIV in 1688. An experienced navigator and cartographer, Cadillac's relevance to the area included practical nautical and land descriptions around the Mount Desert Island area. He did not stay long on the island, and went on to found Detroit.

Governor Francis Bernard: The last colonial governor of Boston in the mid 1700s before independence from Britain was gained. He encouraged settlers on Mount Desert Island, which he acquired in 1759 as a re-payment for personal monies he used on the governor's mansion in Boston.

Abraham Somes and James Richardson: Considered Mount Desert Island's first permanent non-Native American settlers, establishing homes at the end of Somes Sound in 1761. "Betwixt the Hills" would later become Somesville.

The Hudson River School: In the mid-1800s, this school for 19th century artists generated paintings of panoramic views, sunrises, and sunsets. Elements of humanity, such as Native Americans, frontiersmen, or farms, were often part of the scenes. Influenced by European theories of nature as an overwhelming power and hallowed ground reflecting the hand of God, many paintings captured a quickly changing landscape and served as travel posters for those interested in visiting scenic places like Mount Desert Island.

Thomas Cole: The leader of the Hudson River School, Cole visited Mount Desert Island in 1844. Fascinated by the landscape, he painted numerous scenes all with an ethereal quality to them depicting the splendor of mountains, forests, lakes, and sea.

Frederic Church: A student of Thomas Cole, his many visits here in the mid 1800s resulted in paintings depicting the island's essence. He named some of the island's prominent features such as Eagle Lake and the Beehive. Other names such as Lake Silence for Echo Lake are no longer used. More paintings of the island were done by Church than Cole.

Charles W. Eliot: President of Harvard and a regular summer resident of Mount Desert Island, it was Eliot who began the Hancock County Trustees of Public Reservations in 1901 whose sole purpose was to "acquire, by devise, gift or purchase, and to own, arrange, hold, maintain, or improve for public use lands in Hancock County, Maine, which by reason of scenic beauty, historical interest, sanitary advantage or other like reasons may become available for such purpose."

George Bucknam Dorr: A wealthy Boston native whose family fortune came from stock in the textile trade with the West Indies and banking. A great lover of Mount Desert Island, Dorr is considered the Father of Acadia. A member of the Hancock County Trustees of Public Reservations, it was primarily Dorr in the forefront who championed a national park on Mount Desert Island. Upon its inception into the National Park System in 1916, Dorr became

superintendent with a salary of $1.00 a year. By the time he died, he had spent his entire family fortune, much of it on the growth of Acadia National Park.

William Otis Sawtelle: Founder of the Islesford Historic Museum, Sawtelle was a physics professor at Haverford College in Pennsylvania. Like some other summer residents of the time, Sawtelle's fascination with maritime history prompted him to work towards its preservation. Having purchased the old Islesford Market in 1928, once the Hadlock Ship Store, he used this to begin showing collected artifacts. Eventually the fire-safe brick Islesford Historical Museum was built to house the collection.

John D. Rockefeller, Jr.: A summer resident of Seal Harbor and the son of wealthy oil tycoon, Rockefeller Jr.s' deep appreciation for Mount Desert Island coupled with his love of the horse and carriage resulted in a remarkable system of carriage roads. Rockefeller's legacy to the park not only includes the carriage roads but also 11,000 acres of land and partial financing of the Park Loop Road. Other national park beneficiaries include the Blue Ridge Parkway, Shenandoah, Grand Tetons, Virgin Island National Park, and Mesa Verde among others.

Island Life in the 1800s and the Islesford Historical Museum

As the boat winds through the fishing boats in the protected harbor and approaches the dock, two buildings command the eye's attention. The Blue Duck Ships' Store is a one-and-one-half story, gabled, wooden structure standing where the island meets the harbor. Directly behind the Blue Duck is the Islesford Historical Museum, a one and- one-half story brick Georgian Revival building. These two buildings, part of Acadia National Park, preserve the memory of those who lived on the Cranberry Isles and those whose lives were tied to the rhythms of the sea.

Off the jagged, rocky coast of Maine lie approximately 5,000 islands ranging in size from ledge outcroppings to the 80,000 acre Mount Desert Island. During the mid-18th century many of these islands began to be inhabited by European settlers eager to take advantage of this interface between land and sea. Despite hardships, at the time of early settlement in the 18th century, the islands off the coast of Maine were more coveted than the mainland. Islands were easier to hold against attack and they provided their own boundary for keeping livestock--fencing was seldom needed. Island living was also convenient for the many people who made their living by the sea.

Edwin Hadlock, a local entrepreneur who lived on Little Cranberry Island, built the structure known today as the Blue Duck about 1850. He and his sons Gilbert and William used it as a ships' store for at least 25 years. The Blue Duck is an unadorned wood frame structure that represents a simple building style common to maritime villages in the 19th century. After 1875, it operated as a general store. About 1918, Doctor William Otis Sawtelle, a college professor, purchased the building. Sawtelle gave the store its current name, the Blue Duck, after discovering many duck decoys stored there. He painted the decoys Prussian blue and scattered them around the property.

As a summer resident, Doctor Sawtelle became interested in the history of maritime New England, especially Little Cranberry Island, and formed the Islesford Historical Society. By

1919, the Blue Duck was used to exhibit various historical objects and memorabilia collected by the Society. It soon became apparent that the ever expanding and valuable collection required a permanent home. By 1927, under Sawtelle's leadership, friends of the Society contributed sufficient funds to erect a slate roofed brick and granite building-the Islesford Historical Museum. The people whose stories are told in the Islesford Historical Museum on Little Cranberry Island are the ones whose lives were part of a growing nation. The occupations represented in the museum are typical of those of the day: schoolteacher, midwife, cooper, captain, homemaker, merchant, and postmaster. In 1948, the museum and the Blue Duck became part of Acadia National Park.

Island People Portraits

Enoch Spurling (1789-1839) was a prominent mariner and merchant from Great Cranberry Island. While on trips, he sent letters back to his wife Hannah and their children. He worked to separate the Cranberry Isles from Mount Desert Island to make them an independent town. He held several different jobs for the town: selectman, assessor, and town clerk.

Hannah Newman Spurling, Enoch's wife, took care of all the business when Enoch was gone for months at a time. When he died in 1839, she continued to run the business paying taxes, hiring legal help, dispersing proceeds from the shipping business, running the store, and raising the children.

Mary Ann Carroll taught school in the Cranberry Isles. While working, she lived with a local family. During breaks, she returned to the Carroll Homestead in Southwest Harbor. She bought a share in a ship to gain financial independence but the ship was lost.

Hannah Lurvey Gilley, born in Massachusetts in 1782, moved to Mount Desert at age 13. She married William Gilley and had three children. About 1806, they moved to Baker Island and had nine more children. Hannah had a strong education from Massachusetts and taught all 12 children to read, write, and cipher. She died on Little Cranberry Island in 1852.

William Gilley, husband of Hannah, became the first lighthouse keeper on Baker Island. He was given a house, all the sperm whale oil he could burn, and $350 per year. He lost this appointment when the Whigs took power in 1849. He then moved to Great Duck Island which he had purchased in 1837.

Samuel Hadlock, Sr. lived from 1771 until 1854. He moved to Little Cranberry Island in 1790. He was both a mariner and a merchant and built a ship store on the harbor in the early 19th century.

Samuel Hadlock, Jr., was born on Little Cranberry Island in 1792. He sailed north to the Arctic for whaling and sealing expeditions. In 1821, he recruited a family from a northern tribe to represent an Eskimo family for a traveling exhibition. He toured New York, Philadelphia, and Baltimore before leaving for Europe. He married Dorothea Albertina Wilhimina Celeste Russ from Prussia in 1825. Most island residents called her the Prussian Woman, while Samuel named her Hannah Caroline. Hadlock was lost at sea in a sealing expedition in 1825.

Edwin Hadlock lived from 1814 until 1875. He was the son of Samuel Hadlock Sr., the mariner and merchant who built a ship store on the harbor in the early 19th century. Edwin enlarged the operation around 1850 by building what we now call the Blue Duck.
William Hadlock (1834-1911) served in the Civil War as a colonel in the 28th Maine Regiment. His sword and scabbard are in the museum. He returned home to the family business started by his grandfather.

Portraits of Three 19th Century Island Families

When history is recorded it is frequently the unusual or the remarkable individual that is remembered. Those who have made new discoveries or accomplished great feats are deemed the most noteworthy. But this leads to an incomplete picture, for far more people live their lives in happy obscurity than ever make it into a volume of "Who's Who in America."To fully understand history we must know the story of the ordinary citizen as well as the extraordinary citizen. The following three accounts profile three ordinary families in the Mount Desert Island region during the 1800s.

The Carroll Family

(Visit their homestead in Southwest Harbor on Route 102.)
When John and Rachel Carroll moved into their farm house in the fall of 1825 they could not have imagined that it would one day be preserved as an historic resource in Acadia National Park. A piece of land given to them by Rachel's parents would set the stage for the building of the one and a half story Greek revival style house, built of hand hewn posts and beams on a fieldstone foundation with a cellar. The next three generations of Carrolls would all call the "Mountain House" home. John and Rachel would have six children, five daughters and one son. The homestead became a subsistence farm common to the coast of Maine in the 19th century. Its purpose was to provide for the needs of the family. There was a kitchen garden behind the house, but most of the property was left in wood lots. Agricultural production for commercial sale and use was never a goal. Farms like the Carrolls were self-sufficient, although with never-ending chores. They could provide food, clothing, and shelter for their owners. It was, however, a cash-poor economy. To make money needed to buy things that were not grown locally such as coffee, sugar, and spices, many Mainers turned to the sea, spending some months of the year fishing or in the shipping trade. John Carroll turned to the trade he had learned as a boy back in Ireland: masonry.

John Carroll died in 1867 at the age of 77. Rachel continued to live at the Mountain House until her death in 1881 at the age of 90. She had lived in the house for 56 years, longer than anyone else ever would. After his father's death, Jacob Carroll, John's only son, inherited the property. Jacob did not move into the Mountain House right away, however. He had been a sailor since the age of fourteen and had spent most of his life at sea.

The only one of the Carroll men to pursue a career at sea, Jacob crossed the Atlantic five times and sailed around the world once. In his more than 25 years at sea, Jacob would visit many exotic and far away ports including Rio de Janeiro, Calcutta, Peru, Constantinople, Bombay, London, Amsterdam, and Paris. Finally, at the age of 40, Jacob returned to Mount Desert Island and married Rebecca Whitmore Lurvey. Married, with property and family to tend to, Captain Carroll made shorter voyages to sea, instead primarily engaging in the coasting trade by owning

shares of numerous ships. Jacob was very successful in this trade and his family's standard of living rose considerably during this time period. An important consideration, since there were now eight daughters and two sons in the family. Rebecca's chores at home were probably easier than those her mother-in-law had known. An advantage of Jacob's profession was that he often brought both gifts and necessities home with him.

The availability of factory-made and imported goods was an advantage appreciated by many island and coastal residents of Maine. The Carroll children, although not required by law to attend school walked to nearby Norwood Cove for classes. Schooling was for young children and for older children only when it did not interfere with work. Many children only attended school eight or nine weeks each year.

Toward the close of the 19th century, the rippling effects of industrialization were beginning to be felt. As the economy changed, the need for cash increased. When Jacob retired from sailing he began a second career working as a brick mason, frequently traveling to other parts of Mount Desert Island where the influx of visitors with their needs for hotel and cottages kept him in numerous jobs. Some of his daughters who were not married also worked. One daughter, Kate, moved to Medway, Massachusetts, to work in a straw hat factory. Some like Mary Ann Carroll, who never married, was a life-long teacher. (Look for her photo at the Islesford Historical Museum).

Jacob Carroll died in 1899 at the age of 69. His wife Rebecca left the homestead and moved to Southwest Harbor. John (II) Carroll and his wife Viola and their two small children moved into the Mountain House in 1900.They would raise six children. Like his ancestors, John depended on the masonry trade for cash. Considering the incredible level of development on the island at the time, job security was not a concern. Most of the family's food continued to be grown on the farm. John especially loved his apple trees, which are still scattered about the homestead today. The children took advantage of the combination of the natural bounty of food and summertime visitors by selling extra produce and fresh-picked blueberries.

As cash flow increased, lifestyles changed. For the first time the Carroll family owned a horse and carriage. Prior to that time they walked, or rowed, everywhere. With fewer chores to do the Carroll children were able to attend school regularly. All of John and Viola's children graduated from high school. The family life was becoming more centered on social and business activities centered in Southwest Harbor, and although life at the Mountain House was good, it was becoming inconvenient. In 1917 the family moved to Southwest Harbor, ending four generations of Carrolls who called the Mountain House home. The house would be used in the summer, and later rented to summer visitors. In 1982 it was donated to Acadia National Park.

The Hadlocks

(Memorabilia from the Hadlocks can be found at the Islesford Historical Museum.)
Two of the busiest and most productive fishing communities in Maine were off the Mount Desert Island Coast—the Cranberry Isles and Southwest Harbor (on Mount Desert Island).A common sight was fishing boats headed for Labrador or the Grand Banks, or ships returning from Europe or the West Indies. At one time 85 ships called these harbors their home port. As Ted Spurling, a descendent of one of the Cranberry Isles sea captains noted: "Usually, they

went down to the West Indies…They'd take salt fish down there or maybe potatoes, or sometimes (in later years) they would take an ice cargo. They'd go to the tropics. They'd take ice and granite…They'd take popple stones off the beaches and a lot of these cobble stone roads in Boston, like that are made—they call them popple stones. And there were all kinds of different cargo they'd get from the land…but an awful lot of it was salt fish."
The ledgers and logs found in the Hadlock Ship's Store certainly account for this trade with entries regarding molasses, rum, and sugar being quite common. The Hadlock family represents a maritime family, with a Civil War captain and an overseas adventurer thrown in for good measure. With profits from an oversea voyage, the first Hadlock store was built in the early 1800s.The operation was later enlarged in 1850 by adding the current building standing on the island's waterfront. From a ship's store housing a sail loft and carrying maritime goods and then to a general store, the structure's use changed as times changed.

Samuel Hadlock VI (1770-1854), moved to Little Cranberry Island in 1791, where he acquired a large part of the island property and was instrumental in establishing the waterfront settlement now called Islesford. In 1808 Samuel Hadlock VI, using the proceeds from a fishing expedition, built a ships store, one of the first commercial waterfront buildings in Islesford. By 1850, his son Edwin had built another ship's store, the building now known as the Blue Duck.
Hadlock built many vessels, some of which were commanded by his sons. All but one of his five sons died or were lost at sea. His oldest son, Samuel, master of the ill-fated Minerva, was lost with all hands "at the ice" in 1829. Elijah, master of the brig Beaver, died on board of yellow fever the year before. Epps, master of the schooner Otter, and his brother Gilbert, were lost with all hands in the West Indies in 1831.

In 1848, several years before Samuel Hadlock VI died, the schooner Samuel Hadlock, was built on Little Cranberry Island. The largest vessel constructed in the Mount Desert region, this vessel was commanded by Edwin Hadlock, Samuel Hadlock's only surviving son. Edwin barely escaped a similar fate on a voyage from Tampico, Mexico, to New York in the spring of 1849, which took almost two months. Baffled by head winds and heavy seas, with men growing weaker and weaker and with hope almost gone, Edwin could record in the log, "Still a head wind and heavy seas. On allowance of one quart of water and one pound of bread per man. And so ends the twenty four hours on allowance and no tobacco. Providence doeth what seemed right in His sight."

The Gilleys

(Baker Island accessible only by boat)
About the year 1806, William Gilley and Hannah Lurvey Gilley moved with their three small children from Norwood's Cove (Southwest Harbor) on Mount Desert Island to Baker Island. Before the move, Gilley had fished, worked on coastal vessels, cut wood, and farmed. The move to Baker was a calculated risk, difficult perhaps in the isolation they might face, but not in the hard work that would lay ahead. No transaction of money occurred for the island; they just simply lay claim to it.

On this beautiful island, with a spectacular view to the north of the whole Mount Desert Island mountain range, where all around lay the glistening sea, at times calm and reflective of sun and sky; at other times gray and frothy and wild, the Gilleys would raise six sons and six daughters After 10 years and much hard labor, the Gilleys had changed a part of a rocky, wooded island

into a reasonable farm with six cows, a yoke of oxen, two or three young cattle, about 50 sheep, and three or four hogs. Surrounded by the sea, food was abundant. Lobster could be picked from shallow pools along the rocky shore. Fish were caught most of the year. Seabird eggs were collected and eaten. The livestock raised and vegetables grown all added to their well-rounded diet. Clothing came from the wool of their own sheep wove into cloth by Hannah and the girls and then sewn into garments. Bare feet were the rule most of the year, with shoes used only during the coldest of months.

Cash, still needed for purchasing essentials they could not raise or make on their own, came through selling feathers of seabirds, eggs, and butter in Southwest Harbor. In 1828,William Gilley's appointment as a lighthouse keeper at Baker Island in 1828 offered a new occupation. Hannah, who was raised in Massachusetts was fairly educated and made sure that her children learned to read and write. Nearly every Sunday in the summer Hannah took the eldest children 14 miles round-trip, in an open boat, to the Congregational Church at Southwest Harbor.
The twelve children raised by the Gilleys all lived to maturity, and Hannah and William would have 58 grandchildren. A small graveyard on the island is the final resting place of some of their descendants. Under Acadia's care, the stories of these families are preserved as an example of a bygone way of life. Park visitors with boat access to Baker Island can step back in time and encounter a piece of the history of coastal Maine in the 19th century.

Quotes

Explorers: "It is very high, and notched in places, so that there is the appearance to one at sea, as of seven or eight mountains extending along near each other. The summit of most of them is destitute of trees, as there are only rocks on them. The woods consist of pines, firs, and birches only. I named it Isles des Monts Deserts." —Samuel Champlain, 1604

Wabanaki: "I should consider these Indians incomparably more fortunate than ourselves: for, after all, their lives are not vexed by a thousand annoyances as are ours." —Father Christian Le Clerq, a Jesuit priest, early 1600s

Writers During Rusticator Era: "These mountains are the bones of the earth, which, being broken and upheaved, form some of our most striking and beautiful scenery, giving us lovely valleys, wild mountain passes and sparkling freshwater lakes, within the sound of the murmuring sea." —Travel writer Benjamin De Costa,"Rambles in Mount Desert," 1842

Artists During Rusticator Era: "Yankee enterprise has little sympathy with the picturesque and it behooves our artists to rescue from its grasp the little that is left before it is forever too late.This is their mission." —Thomas Cole, head of Hudson River School, 1844

"This is a very grand scene—the craggy mountains, the dark pond of dark brown water—the golden sea sand of the beach and the light green sea with its surf altogether with the woods of varied color- make a magnificent effect such as is seldom seen combined in one scene."
—Thomas Cole on Sand Beach and Beehive

Hotel Era: "There is a vigorous, sensible, healthy feeling in all they do, and not a bit of that overdressed, pretentious, non-sensical, unhealthy sentimentality which may be found at other places." —George Ward Nichols, "Mount Desert Harpers Magazine," August 1872

Cottage Era: "The following groups have come to the social resorts in this order: First, artists and writers in search of good scenery and solitude; second, professors and clergymen and other so called solid people with long vacations in search of the simple life; third "nice millionaires" in search of a good place for their children to lead the simple life (as lived by the "solid people"); fourth,"naughty millionaires" who wished to associate socially with "nice millionaires" but who built million dollar cottages and million dollar clubs, dressed up for dinner, gave balls and utterly destroyed the simple life; and fifth, trouble." —Cleveland Amory—The Last Resorts, 1952, reference to early 1900s social resorts

The Beginnings of a National Park: "Scenically, its impressive headlands give Mount Desert the distinction of combining sea and mountain… Back of the shore is a mountain and lake wilderness which is typical in a remarkable degree of the range of Appalachian scenery… There are few spots, if any, which can combine the variety and luxuriance of the eastern forests in such small compass. The rocks have their distinction…worn by the ice sheets of the glacial period, eroded by the frosts and rains of the ages, their bases carved by the sea, their surfaces painted by the mosses and lichens of today, they are exhibits of scientific interest as well as beauty. Still another distinction is Mount Desert's wealth of bird life. All the conditions for a bird sanctuary in the east seem to be here fulfilled." —Franklin K. Lane, 1918, Secretary of Interior on why this should be a National Park

Carriage Roads and John D. Rockefeller, Jr.: "He built and maintained a carriage road system (motors prohibited) that gives one who travels over it, or one of the loops that make up the system—a great experience—an experience that presents to the traveler all that Acadia Park has to offer—its woods, its lakes, the grand views, the intimate views, the ocean, the mountains, etc."

"He knows intimately the physical geography and the beauties of Mount Desert Island, its hills, its shoreline, its streams, its woods, where the fine views are—where autumn colors are best, etc. Few people know the lay of the land and its interesting details as well as he."

"The carriage roads in Acadia National Park will one day get the recognition they deserve—through use by the public, if not by carriages, by saddle horse, bicycle or by foot. They will be much used and not by the automobile." —Thomas Vint, 4/26/55, Chief, Division of Design and Construction, NPS, to Horace Albright, Director

Carriage Roads of Acadia National Park

Forty-five miles of rustic carriage roads weave around the mountains and through the valleys of Acadia National Park, the gift of philanthropist John D. Rockefeller, Jr., and family. Rockefeller, a skilled horseman, desired to travel on motor-free byways via horse and carriage into the heart of Mount Desert Island. His construction efforts from 1913 to 1940 resulted in roads with sweeping vistas and close-up views of the landscape. His love of road building ensured a state-of-the-art system. Rockefeller's love of road building grew naturally from his

father's. John D. Rockefeller, Sr., the founder of Standard Oil, had built and landscaped carriage roads on his Ohio and New York estates. The junior Rockefeller learned many techniques from his father which he applied to building his Mount Desert Island carriage roads.

State of the Art Roads

The carriage roads are broken stone roads, a type commonly built at the turn of the century. Acadia's roads are the best example of broken stone roads left in America today. They are true roads, approximately sixteen feet wide, constructed with methods which required much hand labor. The roads were engineered to contend with Maine's wet weather. Three layers of rock, stone culverts, wide ditches, and a substantial six to eight inch crown ensured good drainage. Rather than flattening hillsides to accommodate the roads, breast walls and retaining walls were built to preserve the line of hillsides and save many trees. Rockefeller, naturally gifted with the eye of a landscape architect, aligned the roads to follow contours of the land and to take advantage of scenic views. He graded the roads so they were not too steep or too sharply curved for horse drawn carriages. Road crews quarried island granite for road material and bridge facing. Roadsides were landscaped with native vegetation such as blueberries and sweet fern. The use of native materials helped blend the roads into the natural landscape.

An Integrated System

Rockefeller participated in the construction process. He walked areas staked out for road alignment and observed work in progress. He knew the laborers by name and used experts to design the bridges and engineer the roads. Throughout it all, he paid rapt attention to the minutest details, from the placement of coping stones, to the cost of a running foot of road.

Following are some elements that unify the carriage road system:
Coping stones: Large blocks of granite bordering the roads serve as guardrails. Cut roughly and spaced irregularly, the coping stones create a rustic appearance. These coping stones have been affectionately called Rockefeller's teeth.

Signposts: Cedar signposts were installed at intersections to direct carriage drivers. The posts were stained with Cabots shingle stain #248.The lettering was painted first with one coat of flat yellow paint, then with another coat of enamel yellow. Today, numbers are attached to the signposts which match maps and guidebooks, and help carriage road users find their way.

Roadside Grooming and Landscaping: Rockefeller employed a crew of foresters to remove debris from the roads and roadsides. Nationally known landscape architect, Beatrix Farrand, consulted on planting designs to frame vistas and bridges, and to heal scars left behind by carriage road construction. The Fire of '47 destroyed much of her work.

Gate Lodges: Two gate lodges, one at Jordan Pond and the other near Northeast Harbor, ornament the roads and serve as whimsical welcomes to the system. A third gate lodge was planned at Eagle Lake, but never built. During carriage road construction, engineer Paul Simpson and his family lived at the Jordan Pond Gate Lodge.

Bridges: Rockefeller financed 16 Acadia's 17 of stone-faced bridges, each unique in design, to span streams, waterfalls, roads, and cliff sides. The bridges are steel-reinforced concrete, but the use of native stone for the facing gives them a natural appearance. Over time, the stone cutters

grew very skilled and Rockefeller often requested them not to cut the facing too well lest the rustic look be lost!

The result of Rockefeller's vision and attention to detail is an integrated system of carriage roads that blends harmoniously with the landscape.

Carriage Road Rehabilitation

Rockefeller donated the roads to Acadia, but also funded a 100-man work crew to maintain them. Upon his death in 1960, the maintenance was completely turned over to the National Park Service. Due to budget constraints resulting in limited maintenance, the carriage roads deteriorated from their original state. In the early 1990s, a historic resource survey of the carriage roads offered numerous recommendations to rehabilitate the roads. In 1989, a historic resource study on the carriage roads was completed for the National Park Service. That study documented the sequence of the roads' development and construction and made recommendations for their rehabilitation and maintenance.

Between 1992 and 1995, the roads were extensively rehabilitated. Woody vegetation was removed from roads, shoulders, and ditches and drainage systems were reestablished to arrest erosion. The crown and subgrade layers were restored and new surface materials applied to replace thousands of cubic yards washed away over the years. Coping stones were reset or replaced, and some of the historic vistas that once greeted horseback riders, carriage drivers, and walkers have been reopened. Rehabilitation was funded through a special program of federal construction funds with matching private funds. This funding will ensure that the roads will continue to be maintained in the future, close to their original condition. Today's carriage roads have a hard packed fine clay surface, open views, and their original 16 foot width. Coping stones were reset, and culverts and ditches are cleaned of debris yearly to arrest erosion of the roads. This ongoing care assures that this unique cultural resource, not found in any other national park, will continue to provide enjoyment for future generations. Each spring, as the winter snow melts, the carriage roads become soft. Using the roads this time will result in damage. To protect this historic resource as needed, the park closes the roads to all uses for up to two week to allow them harden. If you plan to use the roads in the spring, it's advised to check their status before you come.

A Spirit of Philanthropy

John D. Rockefeller, Jr., was one among several men and women who in some way contributed to the formation of Acadia National Park. Today, people still help preserve the park by donating time to work on trails and carriage roads, or to contribute financially to carriage road rehabilitation. Take Pride in Acadia Day is held the first Saturday in November. Hundreds of volunteers, with rakes in hand, help maintain the carriage roads by removing leaves from the drainage ditches to prepare the roads for winter. Ask at the visitor center to learn how to join in these efforts. Such spirit allows the park to better meet its mission of protecting and preserving its cultural and natural resources for present and future generations.

Carriage Road Bridges

Seventeen carriage road bridges occur at various points where there is either a ravine or motor route to be crossed. Each bridge is a beautifully executed work, entirely constructed from hand-

hewn local granite. They each have artfully conceived and individual design features that blend harmoniously with their surroundings and that, in many cases, take advantage of natural waterfalls, site contours and great heights to enhance the drama of the landscape. Frequently small viewer's platforms were designed into the bridges so that both the view and the handiwork of the bridge may be admired. Unless otherwise noted, most bridges have a substructure of stone and mortar, are faced with quarry-faced random laid granite ashlar, and a two lane gravel deck.

Definitions

Ashlar: rectangular blocks (in this case—granite) with no set dimensions
Voussoirs: stones creating the decorative arch of the bridge
Coping Stones: creating the top rail
Abutments: side walls or pillars of bridge built into the landscape
Capstone: top rock on abutments of the bridge deck

Bridges in the Jordan Pond Area

Jordan Pond Bridge: Completed in 1920, this compact 40 foot length bridge has a 20 foot single segment arch span. The bridge marks the meshing of Jordan Pond and Jordan Stream's waters. Its arched gravel deck is flared at either end. Its surface blocks are laid both random and polygonal between the radiating voussoirs of the arch and the orderly coping stones of the gently arched rail. The abutments are square, solid masses surfaced in random ashlar with a flattened pyramidal capstone.

West Branch Bridge: The 170-foot structure has a flared approach as it curves sharply over the ravine formed by Jordan Stream. It has a small 6 foot stone arch span. The stone and mortar substructure is very simply clad in quarry-faced random laid ashlar and lacks even copings on its side railings. It was built in 1931.

Cobblestone Bridge: This bridge spanning Jordan Stream was the first bridge built on the carriage road system in 1917.William Welles Bosworth, an architect who had previously been employed by Frederick Law Olmstead, Sr. designed this bridge. However, it was carriage road engineer, Charles Simpson—not Bosworth—who suggested the use of rounded boulders for the facing. John D. Rockefeller, Jr. agreed that the rounded boulders would lend a more natural appearance to the bridge than cut stone work. The cobblestone bridge is unique. No other bridge on the carriage road system has boulder facing.

Stanley Brook Bridge: The triple-arched Stanley Brook Bridge was built in 1933. The main arch spans the Stanley Brook road which connects Seal Harbor Beach to Jordan Pond. The two smaller arches cross Stanley Brook on one side and the Seaside Path on the other. The long deck carries a carriage road.

Jordan Pond Road Bridge: One of the last bridges built in 1932, this bridge is not easily noticed even when traveling over it. It carries an automobile road from Seal Harbor to Jordan Pond across its deck, a carriage road running beneath it.

Bridges in the Penobscot Mountain and Sargent Mountain Area

Deer Brook Bridge: Completed in 1925, this 140 foot long bridge soars high above its namesake near Jordan Cliffs. The two-rounded arches are tall, narrow 8-foot spans, separated by a delicate pier and outlined by slender radiating voussoirs. The entire stone and mortar substructure is clad in quarry-faced random laid ashlar. Set into the spandrel of the arches is a plain, circular medallion into which has been carved the year "1925."

Chasm Brook Bridge: The Chasm Brook Bridge, completed in 1927, is a rustic and small-scaled bridge with a 20 foot span over Chasm Brook. It is faced with random laid ashlar as are the long, slender, radiating voussoirs, the keystone, and the railing copings. The two-lane, gravel-surfaced deck is handsomely flared and terminates at pairs of rounded abutments which form pedestals for their gently peaked caps.

Bridges in the Parkman Mountain/Upper Hadlock Pond Area

Hemlock Bridge: Built in 1925, this massive Gothic-arched structure crosses Maple Spring Brook. Its 185 foot wall curves back sharply and flares at either end. The Gothic arch span is 30 feet across and

Waterfall Bridge: Another 1925 bridge, the Waterfall Bridge spans Hadlock Brook. It is 125 feet in length and flares gently at the ends. The 20 foot span of its rounded arch is outlined by a firm row of radiating voussoirs. Random laid ashlar cover the substructure and bold blocks of the same material as the railing copings. A pair of semi-circular viewing platforms juts out on either side to take advantage of the view.

Hadlock Bridge: The Hadlock Brook Bridge, completed in 1926, is a small-scaled 40 foot bridge with a 20 foot span segmental arch. The rail of the bridge follows the line of the arch and flares out gently at either end. There are strong abutments with chinked rounded capstones. The stone and masonry substructure is clad in very rough, quarry-faced ashlar, laid random. The radiating voussoirs and rail copings are similar in texture.

Bridges around Eagle Lake/Witch Hole Pond Area

Eagle Lake Bridge: The carriage road passes underneath the Gothic-arched Eagle Lake Bridge which carries State Route 233 above. It was built in 1927 and is 118 feet in length. The refined Gothic arch spans 30 feet. The arch is outlined in radiating voussoirs of the random-laid ashlar. This bridge was the object of a 1974 widening project that expanded the upper deck to accommodate State Route 233 traffic. The project received engineering awards for the division, the separation move made on a system of ball bearings, and the excellent re-seaming with the newly added masonry.

Duck Brook Bridge: The Duck Brook Bridge is a spectacular, three-arch structure over Duck Brook. Completed in 1929, there is a central 30-foot span flanked by smaller 20 foot spans, each of which has rough-dressed uneven radiating voussoirs with prominent keystones.The gravel-surfaced deck is 200 feet in length and flares at either end.The railing has dressed ashlar copings and there are pairs of rectangular openings piercing the railing above the lesser arches and three pairs above the main arch. Above the spandrels of the arches, corbelled and semi-circular balconies extend off from the deck to allow the traveler to enjoy the scenery from excellent vantage points.

Bridges around Bubble Pond Area

Bubble Pond Bridge: Completed in 1928, this is an elliptical-arched structure rustic in detail. The 30-foot span is echoed in the railing arch which slopes outward beyond the opening to a more horizontal place. The deck is a full 200 feet in length and flares gently at the end. The stone and mortar substructure are surfaced in rough-dressed random laid rubblestone.T he uneven and rough-dressed radiating voussoirs form the graceful arch and the keystone block has been carved with the year "1928." The rail copings, too, are rough-dressed and jaggedly set, but still provide a strong horizontal element in this bridge's distinctive profile.

Bridges around Amphitheatre Area

Little Harbor Brook: This small single round arch bridge, built in 1919, crosses over Little Harbor Brook. The bridge is 40 feet long and has a main span twenty feet long and a deck twenty feet wide. It was designed after a bridge in Central Park, New York.

Amphitheatre Bridge: Built in 1928, this bridge is a long, 236 foot structure that traverses the deep Amphitheatre ravine. The deck flares broadly at either end. The 50-foot rounded arch span is constructed of rough-dressed, uneven radiating voussoirs and has a prominent keystone. The surface, in addition to the random-laid ashlar, incorporates large projecting blocks set in several discontinuous vertical rows. The rail copings are of heavy, rectangular blocks of rough-dressed granite with beveled edges and with a gently peaked stone in the center. The rows of ashlar are not completed to their outer edges and this stepped motif, together with the continuous railing coping, creates a series of triangular openings piercing the wall.

Cliffside Bridge: This 232-foot-long structure built in 1932 resembles a medieval battlement curving out over a vast ravine. The 50 foot span segmental arch has a row of slender and tall radiating voussoirs. On either side of the arch are massive bayed abutments, battered at the base, which at the bridge deck become viewer's platforms. The railing of the bridge is crenulated by the upright placement of massive hand-hewn boulders at regular intervals. The viewers' platforms have the same ponderous crenellation, as well as finely dressed stone chutes set in the masonry to drain water from the structure.

Construction of the Park Loop Road

This section provides general information about sections that might be of interest.
The road evolved through the development and rehabilitation of twelve separate road sections between 1921 and 1958 resulting in one of the most scenic roads in the country. Often the last portion of the Park Loop Road to be traveled, the Lower Mountain Road, was the first section completed in 1925. Originally called the Jordan Pond–Eagle Lake Road, it was funded by the federal government and by donations from John D. Rockefeller Jr.. Rockefeller saw the development of motor roads as a way to keep automobiles off the carriage roads, while George Dorr, the park's first superintendent saw motor roads as the direction of the future to provide access into Acadia's heart. The building of the Park Loop Road was not without controversy. Some summer residents felt any network of roads would ruin the wilderness quality of the island's interior. With those dissenting voices in mind, and the perfection standards inherent in Rockefeller's involvement, high road-building standards maintained the landscape's integrity. This first section opened in 1925 and was developed to blend with its natural surroundings, right down to the road's one-time surface of crushed pink granite.

The Ocean Drive section, as part of the on-going construction of park roads in 1930, was reconstructed and extended to Otter Point. The original road from Sand Beach to Otter Cliff was built in 1886. During WWI, a strategically important naval radio station operated from Otter Point to receive signals from the European front. In the 1930s, although still vital to U.S. military efforts, it also represented an obstacle in the proposed continuation of the Park Loop Road through this scenic portion of Mount Desert Island. In 1932, a solution was reached and the United States Navy and Department of the Interior agreed that the park would offer park land on Schoodic Peninsula for the relocation of the naval station. John D. Rockefeller, Jr., still involved in the Park Loop Road development, contributed funds for the re-establishment of the naval station. Historic use of Cadillac Mountain influenced park administrators to construct a quality road that would benefit tourism. The assistant park service director in the 1920s stated,"…so that those who cannot climb may get the opportunity to receive the inspiration and feel the exaltation of spirit that come with an hour spent on the breeze-swept hills with their superb views over sea and island, losing themselves in the distance." He also added that in his opinion, "no road should go to the top of any other mountain in the park." Construction of the summit road would progress slowly. Opposition, lack of funds, varying opinions, and different contractors, not to mention the difficulties of grading, blasting, and building embankments, turned the venture into a ten year project. The first 4300 feet were completed in September of 1923, offering views of Eagle Lake and the Breakneck Ponds. The final grading to the summit was not completed until November 1, 1930.This last leg of construction was problematic due to the poor workmanship by the contractor. Serious landscape degradation due to inattention to appropriate blasting procedures and non-existent clean-up scarred the summit. Park officials, remembering the concerned voices of a decade ago opposing the road, put much effort into repairing the damage where possible. The final road work included widening some sections for viewing pull-outs, and surfacing the road with crushed pink granite similar to the original Jordan Pond–Eagle Lake road (known as Lower Mountain Road today). Despite some of the shortcomings, the end result was lauded as a remarkable piece of engineering, and was officially dedicated on July 23, 1932.The damage incurred by a careless contractor almost a century ago is still a lesson for park managers of today who try to balance the need for visitor services and enjoyment, with their prime mandate of protecting and preserving the park's natural resources.

Acadia's Historic Trails

Mount Desert Island's present day trail system evolved over centuries of human use and settlement of the land. From American Indians who blazed trails on hunting forays, to European settlers who connected villages and harvested forests, their activities provided transportation routes on the island long before the first roads were built.

In the mid-1800s, rusticators came to the island to enjoy its beauty and to escape the bustle of large cities. They followed many of the existing paths and trails up mountains, through the woods, and along the ocean shoreline. Among the rusticators were Hudson River School artists Thomas Cole and Frederic Church. Their renderings of the island attracted city dwellers to experience the Maine coast.

Many of those who traveled to the island were very wealthy. They built 80 and 100 room "cottages" in which to pass their summers. Some cottagers socialized at tennis matches, lawn

parties, and horse shows. Others, like the rusticators before them, were lured by the natural beauty of the island and preferred hiking. By the end of the 1800s, an era of active trail building had begun. Trails lost their utilitarian origins and were transformed into paths that promoted interaction with, and enjoyment of, the natural landscape. In 1891, the first extensive trail plans were drafted. Much of the trail building was sponsored by Village Improvement Societies. An innovative approach to funding construction was the creation of memorial paths. Individuals who financed a trail could name it after the person of their choice. Kurt Diederich's Climb, which ascends Dorr Mountain's east face, is a memorial path. Plaques were often set along the trails in memory of the person who was being honored. Actual trail construction took innovative forms as well. Waldron Bates, chair of the Roads and Paths Committee of the Bar Harbor Village Improvement Association 1900-1909,was the first to incorporate stone stairways and iron rung ladders into trails to traverse cliffs, talus slopes, and other steep areas. An example of his work is Gorham Mountain's Cadillac Cliffs Trail. A plaque at the head of the trail memorializes Bates as Pathmaker.

Others who followed Waldron Bates carried on his legacy of innovation and craftsmanship. Rudolph Brunnow built the Precipice Trail over the formerly impassable cliffs of Champlain Mountain, and George Dorr, one of Acadia's founders and the park's first superintendent, promoted memorial paths. He oversaw the construction of several stairway trails leading from Sieur de Monts to the summit of the mountain which now bears his name.

By 1915, over 200 miles of trails existed on the island. That same year, the state of Maine lifted the island's ban on automobiles. By 1920, the major trail building era had ended, while an interest in building motor roads intensified. The Seal Harbor Village Improvement Society recorded in 1929:"…an inevitable first effect of the oncoming of the automobile was the banishment of the horse and the desertion of foot paths and trails."

The Great Depression, however, brought the New Deal and the Civilian Conservation Corps (CCC) to Acadia National Park. Two camps were established on the island in 1933, one on McFarland Hill (now park headquarters), and the other just south of Long Pond on the west side of the island. A good deal of their work involved trails. East side crews primarily rehabilitated existing trails constructed by Village Improvement Societies. West side crews expanded the trail system on newly acquired tracts along the western mountains. The Perpendicular and Great Pond Trails are examples of work completed by the CCC.

Today, hikers can follow the footsteps of early settlers and American Indians, and outdoors enthusiasts of another era. Acadia's historic trails are still as challenging to present day hikers as to those of generations past, and their scenic values and ties to the landscape evoke the sense of awe experienced long ago.

RESOURCE MANAGEMENT CONCERNS

Air Quality

Acadia National Park is downwind from large urban and industrial areas in states to the south and west and, as a result of long-range transport, periodically experiences high concentrations of air pollutants. Although spectacular vistas are still common in Acadia, pollutants from upwind sources contaminate park air and degrade visibility.

The National Park Service established a comprehensive air resources management program at Acadia, a Class I area under the Clean Air Act, to better assess air pollution impacts and protect air quality related resources. This program, which began in the early 1980s, includes:

- Monitoring to establish a baseline for selected pollutants and assess trends
- Support for air quality and biological effects research
- Regulatory interaction with state and federal agencies.

The four major concern areas are:

Acid deposition: Caused by sulfur and nitrogen compounds in rain, fog, snow, and dry deposition. Lower precipitation pH levels can be a major influence on lake and stream chemistry, can cause nutrient enrichment in estuaries, and can affect sensitive animals and vegetation.

Acadia NP is one of more than 200 sites nationwide that participates in the National Atmospheric Deposition Program (NADP). The NADP, which began in 1978, is a long-term program to determine the chemical composition of atmospheric precipitation (rain and snow), and the spatial and temporal trends of deposition. The ANP site is one of eight NADP sites in Maine. Operation of the ANP site is a cooperative effort between the park and Maine Department of Environmental Protection (MDEP).

The NADP analytical laboratory analyzes samples for pH and a number of other chemical variables including major anions and cations, and determines sulfate and nitrate deposition. Since 1990, there has been a significant reduction in sulfate deposition while nitrate deposition has remained relatively unchanged. Reduced sulfate deposition is largely attributed to reduction in sulfur dioxide emissions required by the Clean Air Act Amendments of 1990.

Research and monitoring at Acadia since the early 1980s has found that most park surface waters (lakes and streams), on average, are non-acidic. However, short-term episodic acidification of many lakes and streams does occur, especially during spring snowmelt and runoff. In addition, alkalinity values at Acadia (which are related to the ability of water to neutralize or buffer acidic inputs) are among the lowest in the region. Recent research indicates alkalinity in some waters has not yet began to increase despite recent reductions in sulfate deposition, a pre-cursor to acid precipitation.

Fog, which is not measured by the NADP, tends to be more acidic than snow or rainfall and may be a major source of acidity to park vegetation. Because wet deposition is only part of total deposition, dry deposition (suspended particles that settle onto plant and soil surfaces) monitoring was initiated in 1998, when Acadia joined the EPA'S Clean Air Status and Trends

Network (CASTNet). Essentially the same set of parameters measured in the NADP program is monitored in the CASTNet program, except the sample is collected through the week-long exposure of a dry filterpack. Preliminary studies suggest dry deposition of some atmospheric constituents may exceed the amount of wet deposition.

Ozone and other gaseous pollutants: Ground level ozone, formed in a chemical reaction between nitrogen oxides, volatile organic compounds (VOCs) and sunlight, affects much of the Maine coast at times in the summer. Ozone can cause breathing problems and may harm certain plants. In 2008, the US Environmental Protection Agency (EPA) established a new National Ambient Air Quality Standard (NAAQS) for ozone of 0.074 ppm averaged over 8 hours. The new standard is exceeded at 0.075 ppm (or 75 parts per billion [ppb]). From May through September, ozone concentrations at Acadia periodically reach 75 ppb or greater, as do most other areas along the Maine coast. Since 1999, ANP has exceeded the 8-hour standard from 0 to 10 days each summer.

Maximum daily ozone levels at Acadia NP most often occur between 6pm and midnight, reflecting the long-range transport by prevailing winds of polluted air masses from urban and industrial areas to the south and west. Most periods of unhealthful ozone at Acadia only last a few hours. Prolonged periods of unhealthful ozone occur when a high-pressure system becomes stationary causing polluted southwesterly winds to stall over the area. The park has developed an Air Quality Advisory Program to notify visitors and employees when ozone and fine particulates reach unhealthful levels.

Ground level ozone has been monitored at Acadia NP since 1982 at McFarland Hill, and since 1995 at Cadillac Mountain. The MDEP has responsibility for routine day-to-day operation of gaseous pollutant monitoring (also including nitrogen oxides, VOCs, sulfur dioxide, and carbon monoxide) at the two Acadia sites. Basic meteorology (wind speed & direction, temperature, relative humidity, solar radiation, and precipitation) conditions are also monitored at both sites. The MDEP officially reports ozone and other gaseous pollutant monitoring data for Acadia and other state monitoring sites to the national EPA database, and on an internet website at: http://www.state.me.us/dep/air/ozone/.

Although Acadia NP periodically experiences maximum ozone concentrations that are among the highest in the eastern US, average daily levels during the ozone season are usually 35–40 ppb, well within the good range on the ozone health index. The same holds true when comparing Acadia to other National Parks, where maximum ozone concentrations at Acadia are among the highest of any park. However, average concentrations and season-long cumulative doses above the 60 ppb concentration level (SUM60) often associated with vegetation injury, are significantly lower than other parks such as Shenandoah, Great Smoky Mountains, and Sequoia.

Mercury deposition: Mercury, a trace metal, originates from natural sources, power plants, incinerators and industry. It can travel long distances and be deposited even in remote areas. Mercury is known to affect human health, amphibians, fish, and other wildlife predators including loons and eagles.

In 1994, Maine issued a statewide fish consumption advisory warning of the high levels of mercury in some species of freshwater fish. To better understand the ecological impacts of mercury contamination on aquatic resources at Acadia NP, a research study was initiated in 1995, with support from MDEP and the USGS Biological Resources Division.

Acadia NP became one of the first NPS units to join the Mercury Deposition Network (MDN), a national program monitoring mercury levels in precipitation. In subsequent years, the park hosted researchers investigating mercury cycling and flux in soils, streams, and throughfall (dry deposition concentrated on forest canopy and later washed to the forest floor). Other investigators studied mercury concentrations in fauna representing various levels of the food chain, from plankton to top carnivores.

Data indicate that the current rate of mercury deposition is about 4 times greater than what scientists think deposition rates were before industrialization. While mercury concentrations in Acadia's streams on Mount Desert Island (MDI) fall within the statewide range, mercury levels in MDI streams are unusually high within the regional context of coastal and Downeast Maine. The vast extent of wetlands within the park provides environments conducive to increased methylation, a process in which naturally occurring bacteria act on mercury to create methylmercury, which accumulates in organisms and magnifies in concentration with each level of the food chain.

Particulates and Visibility: Particulates (solid particles and liquid droplets) come from both human activities (power plants, industry, motor vehicles, fireplaces) and natural causes (forest fires).The result is a haze that obscures long-range views. Views from Cadillac Mountain and other park summits are integral to the visitor experience at Acadia NP. The Clean Air Act established the goal of remedying any existing and preventing future manmade visibility impairment in the nations National Parks. In July 1999, the U.S. EPA issued new regulations to address poor visibility in federally protected parks and wilderness areas (i.e., Class I areas). These regulations set a target date of 2064 for achieving natural visibility conditions in Class I areas.

The primary objectives of visibility monitoring are to: 1) establish baseline data and track trends of fine particulate concentrations, 2) determine the relationship between visibility impairment and various atmospheric particulate constituents, 3) determine sources of particles producing visibility impairment. To achieve these goals, Acadia NP participates in the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, which is comprised of particulate, optical, and scene monitoring activities.

Particulate monitoring involves weekly sampling of fine particulates in the 0- 2.5 (PM2.5), and 0-10 (PM10) micron size ranges, and analyzes for mass volume, elemental compounds (H, Na-Pb), nitrate, sulfate, organic and elemental carbon. PM2.5 is the size range that is most effective in scattering and absorbing light in the wave length perceived by the human eye, thus affecting the color and contrast of the visual scene.

IMPROVE analyses can be used to differentiate between natural and human-caused pollution sources, and when combined with meteorological data and modeling, determine emission

source locations. Sulfate is the largest contributor to visibility impairment at Acadia NP accounting for approximately 62 per cent of aerosol light extinction, followed by organic carbon (18%), nitrate (8%), light absorbing carbon (7%), and coarse particles and fine soil (5%).

Optical measurements of ambient air have been taken at ANP since 1980 using a number of different instruments. Data can be analyzed to determine the extinction coefficient of ambient air (i.e. point at which light cannot be seen due to fog, clouds, smoke, or air pollution); or standard visual range (distance one can see an object through the atmosphere). Since 1993, an integrating nephelometer has been used to measure the light scattering component of extinction. In general, visibility conditions at Acadia NP are best during the fall, and poorest during the summer.

During the period from 1996-2005, there has been a statistically significant improvement in visibility at ANP during the clearest days, and a slight statistical improvement in visibility during the haziest of days, according to the FY2006 GPRA results for air quality trends published in 2007 by the NPS Air Resources Division (ARD).

Long-term camera (scene) monitoring has been used to qualitatively characterize ambient visibility conditions of a specific vista. From 1980 to 1995 a 35mm camera was used to document the view toward Blue Hill, Maine from Cadillac Mountain. The camera took exposures three times daily (at 9am, 12 noon, 3pm) year around.

In 1999 a digital camera was installed at the McFarland Hill monitoring site to record the view across Frenchman Bay. These images are displayed (along with real-time air quality data) on the NPS-ARD webcam site (http://www.nature.nps.gov/air/webcams/) to illustrate the relationship between air pollutant levels and visibility conditions. A second, dual-camera installation was set up at the park's Schoodic Education and Research Center in spring of 2008. These cameras provide a panoramic view of the Mount Desert Island portion of Acadia (including Cadillac Mountain) that is found on the CAMNET website (www.hazecam.net)
2-2011

Environmental Compliance Program

The Environmental Compliance Program at Acadia National Park strives to ensure that all park construction, rehabilitation, and other projects or actions comply with all applicable federal, state, and local environmental laws and regulations. Applicable laws protect wetlands, air quality, water quality, endangered species and the human environment. For all major park activities, the public will have an opportunity to provide comments to the National Park Service in accordance with the National Environmental Policy Act.

Exotic Plants

Caring for Acadia's Native Plant

Exotic plants are non-native species introduced by humans into an area where they did not previously exist. Some may have escaped from gardens. Others have traveled via ship ballast, car and truck tires, and boats. Exotic plants can also be spread in road salt and sand, as well as

in soil used as fill. It is the aspect of human influence that distinguishes exotics from native plants that occur naturally in an area.

The presence of exotics in national parks is not uncommon. In fact, nearly one quarter of the approximately 1,100 plant species found in Acadia are exotics. National parks were set aside to protect and preserve natural, cultural, and scenic resources. Since some exotic species may threaten natural and cultural resources, staff at many national and state parks, including Acadia, work to manage the most threatening exotic species. Some exotic plants, like purple loosestrife, are extremely invasive. A showy, non-native perennial introduced from Europe, purple loosestrife has striking / magenta flower spikes that bloom from mid-July through the end of August. Despite its attractive appearance, it threatens the existence of native plants and wildlife in wetlands by choking out native vegetation such as cattails that provide important wildlife habitat. Without its native European biological controls of insects and diseases, purple loosestrife can invade and change wetlands into monocultures. Many species of mammals, fish, insects, and waterfowl, including mallards, muskrats, and red-winged blackbirds, depend on a variety of aquatic plants that purple loosestrife pushes out. In the summer, ditches along Interstate 95 display spikes of purple—evidence of purple loosestrife on the move. Park resource management staff has been managing purple loosestrife since the mid-1980's and it is a very rare sight on park lands. But outside of the park, populations on private lands threaten wetlands. Managing exotic species in Acadia uses an integrated approach, and includes determining whether a particular exotic species poses a serious threat to native resources and whether control is feasible, identifying and monitoring areas where non-native plants grow, reviewing studies to decide what treatments will be least-toxic yet effective, and monitoring treatment success to see if adjustments in strategy are needed. Purple loosestrife, for example, has been managed by carefully applying low doses of herbicide on individual plants, and educating park neighbors and local nurseries about this invasive ornamental to prevent its use in private gardens and subsequent spread into the park. Using an herbicide in a national park requires adherence to strict policies and regulations. The least toxic and most biodegradable herbicide is selected.

There are currently about two dozen highly invasive non-native plant species in Acadia National Park that are of concern and are currently being, or will be, managed. Garlic mustard is an early spring flower that can replace native spring ephemeral wildflowers and dominate the understory of deciduous forests and woodlands. Japanese barberry has the ability to invade and dominate a wide range of habitats including forest under-stories, wetlands, and fields. Other invasive plants in Acadia include oriental bittersweet, Japanese knotweed and glossy buckthorn. Not all exotic species are harmful. Some, such as domestic apple trees and common lilacs are remnants of human settlements in times past, and can be indicators of historic homestead sites. They are not invasive, nor do they threaten other native plants or wildlife.

Home Sweet Home – Using Native Plants in Park Plantings

Ecological problems created by exotic plants like purple loosestrife also influence policies about landscaping in national parks. Charged with preserving natural ecosystems, National Park Service policies direct park managers to use native rather than nonnative plants for landscaping and revegetation within their boundaries. Using native plants grown from seed or cuttings taken from the park preserves the genetic integrity of native plant communities and assures compatibility with the local environment, increasing the chances for plant survival. Native

plants have adapted over centuries to the area's climate and soils and need virtually little care. The base of the food chain for the area is formed by native plants that provide food for native wildlife. Native plants are obtained from nurseries, grown from seed or cuttings collected after obtaining special permits, or sometimes are salvaged from areas that will be disturbed by maintenance or rehabilitation, such as along roadsides that will be graded or ditched. Both of these programs—exotic plant management and native plant revegetation, are tools managers use to protect natural and cultural resources in the park.

The Future

Studies about Acadia's flora will continue to inform park managers, the scientific community and the public about the park's unique natural resources. Because of the increase in visitation on Acadia's summits in the last fifty years, investigations on the ecology and recreational effects, such as trampling, on these plant communities will continue, as will efforts to restore more natural conditions. Rare plants will be surveyed to monitor and ensure the survival of rare plant populations. And as a warming climate changes environmental conditions, park managers will be faced with difficult management decisions to manage 'natural' landscapes and the plants and animals dependent upon them.

How You Can Help

Take a stand against the invaders! Avoid purchasing from nurseries plants that are known to be invasive, such as purple loosestrife, Japanese barberry, and oriental bittersweet.
Watch your step! While exploring natural areas, stay on designated trails or hard surfaces to avoid crushing tiny plants underfoot and disturbing fragile habitats. Remember, plants grow by the inch and die by the foot.

It all starts at home! Check your own home or garden. Are the plants native to your area? If not, do their seeds spread to other areas? Consider removing non-native plants that are invasive. Garden with natives! Contact local nurseries that sell native plants. Your local cooperative extension service, nature centers and gardening clubs can also assist you with your gardening needs. Please remember, plant species native to Acadia may not be suited to other regions. Use plants native to your area and growing conditions.

Don't move firewood or plants for landscaping! Invasive non-native insects such as Asian longhorned beetle, emerald ash borer, and hemlock woolly adelgid hitchhike great distances on firewood and threaten the very existence of tree species that make our forests special. Buy firewood near where you camp. Wood brought from out of state is prohibited by Maine law. If you are landscaping your home, buy locally-grown insect and disease-free plants from reliable nurseries.

Leave it be! In Acadia National Park, collecting plants, or any other natural or historic objects, degrades the park and threatens species survival. Collecting is prohibited!

Visit www.fws.gov (US Fish and Wildlife Service) for a national plant list of threatened and endangered plant species, and learn the identity of threatened plants in your area.

Fire Management

The fire management program at Acadia National Park performs a full range of wildland fire management operations and services. These include fire prevention, education, preparedness, suppression, prescribed fire, and hazard fuels management, the reduction of wildland/urban interface hazards, monitoring, and research. The program also conducts wildland fire prevention operations and provides fire management assistance to nine other National Park Service units in New England and New York State as well as local fire departments.

Some of the activities carried out by the fire management program include:

- Wildland urban interface education and outreach
- Operation of four wildland fire suppression engines.
- Maintenance of a hundred person fire cache
- Maintenance of a trained cadre of primary and incidental wildland firefighters
- Use of prescribed fire for management of park vistas
- Mechanical removal of hazard fuels in high use areas
- Creation and maintenance of boundary fuel breaks along park boundaries
- Monitoring of prescribed fires and long-term forest conditions
- Research into fire effects and the long-term history of wildland fire in the park

The fire management staff also administers the Rural Fire Assistance Program which provides federal financial assistance to rural fire departments. Mobilization of park and other North Country Area firefighters to out-of-state fires is coordinated and directed by the fire management staff. This mobilization service is also provided to wildland firefighters from other federal agencies in the area, including the Bureau of Indian Affairs and the U.S. Fish and Wildlife Service, and to local Indian tribes.

Structural fire prevention operations include the inspection and maintenance of fire extinguishers, acquisition and maintenance of fire detection and fire suppression systems in park buildings, and coordination with local fire departments that provide structural fire suppression services for park buildings. The fire management staff also provides professional, technical, administrative and logistical support to the fire management programs of the eleven other NPS units in New England area parks.

These programs protect the lives of park staff, visitors and neighbors, provide wildland and structural fire protection to the 48,000+ acres of land and 150+ buildings that make up Acadia National Park, and assist nine other National Park Service units in the protection of their people and resources from fire.

Fire Ecology

Fire ecology studies the role of wildland fire and how it relates to the living and non-living environment. All living components in the environment eventually die and are in a continuous process of being built up or reduced and recycled. This ebb and flow makes life possible by seeking a balance between all components, living and non-living. Fire is studied as a natural process operating as a component of an ecosystem. To understand an ecosystem requires looking beyond the ecosystem's present state.

A full understanding includes an investigation of the ecosystem's origin, the cycles the system progresses through, and possible future stages. Fire is one of many natural events that promote change in an ecosystem. Prior to 1930, most researchers believed all wildland fire was bad. In the years following many began to challenge the negative notions about wildland fire, and this new thinking prevails today. They argued that fire was essential to many plant and animal communities. It is the common belief today that fire is required in some ecosystems to help in the decay of dead plants, breaking down and recycling the nutrients, and in preparing seedbeds for some fire dependent species.

The history of fire in Acadia National Park extends back thousands of years. Park researchers have used several methods to determine when and why fires occurred in both pre-and post-European settlement periods. By analyzing pollen grains captured in the sediment of the lakes within the park, the researchers have determined that the forest composition has changed over time. Prior to 2,000 BP, northern hardwoods and hemlocks predominated. Over time the area climate cooled and red spruce began to increase. As Native Americans used the area, fire occurrence increased allowing other species to appear. Some scholars suggest that Native Americans may have started periodic fires to encourage the growth of paper birch for their own use. After the Europeans settled the area, the evidence shows a much higher incidence of fire. At present much of the area within the park is forested with a spruce/fir forest mixture. Natural fire ignitions (lightning) are, and most likely were, of little importance in accounting for less than 2% of all fires in the park between 1936 and 1991.The moist, humid climate of coastal Maine does not encourage natural ignitions. This lack of fire causes large amounts of dead and down wood (fuels) to accumulate on the forest floor. Fuels can also include foliage or grass. They may be fine, such as twigs or needles, or heavy such as logs, branches, or whole trees. They may also be living such as understory layer of tree regeneration or a layer of shrubs. If the fuel load is light a fire may burn through the forest with a very low intensity, typically consuming only the litter on the very top of the ground. If the fuel load is heavy the fire intensity may become very high. As the forest ages the canopy breaks up allowing younger trees to sprout and grow. This understory layer forms a "ladder" of fuel that may allow an intense fire to ascend in the tops of the trees, creating what we know as a "crown fire." While crown fire causes the greatest concern for impacts to human communities and structures, it is also nature's way of resetting the natural clock to allow less flammable shade intolerant species such as many of the birches and maples to re-colonize an area after a long period of occupation by shade tolerant and highly flammable coniferous species.

There is adequate evidence that periodically, at intervals of a few hundred years, fast moving crown fire has burned portions of Mount Desert Island. Fire has naturally occurred for thousands of years prior to settlement. For many ecosystems fire is a natural catalyst for species diversity and a healthy forest. Without periodic fire, the land can become densely stocked with high levels of fuel accumulation and stagnated growth, which ultimately encourages widespread disease and insect infestations. Fire is and has been a natural part of the ecosystem at Acadia National Park, renewing and recycling the forest at periodic intervals. However, the area of Acadia National Park and the neighboring towns and villages are in such close proximity to the forest themselves that allowing a fire to burn in a natural state is not an option. It has often been said that we really don't prevent forest fires, we just defer them. As accumulating fuels align with draught conditions and an ignition source, fire potential becomes

inevitable. For this reason, the Acadia Fire program strives to promote fire prevention, fire-wise landscaping, and fuels reduction in proximity to structures and other high value property. Indeed as the park moves into the new millennium it faces questions on how the ecology of the park might use the beneficial effects of fire. Prescribed burns are now being conducted in some areas of the park to maintain overlook and scenic vistas.

Geographic Information System (GIS)

A Geographic Information System (GIS) is a computer system (hardware, software, data, and an operator) that can store and analyze geographic data. With GIS, maps are easy to update and can be re-printed as information changes. The power of GIS, though, is its ability to easily and quickly analyze information which would, using paper maps, be tedious and difficult. Using GIS, you can easily calculate the area of wetlands within the park boundary by overlaying the two data layers--wetlands and park boundary. GIS can also be used to model such things as the spread of fire or determine where to site a new trail or radio tower to reduce visual and environmental impact.

The park has been building a Geographic Information System (GIS) since the 1980s when the first data were digitized to help inform the re-write of the park's General Management Plan. Today, maps and analyses are routinely made for reports, presentation, fieldwork, and planning by park staff and researchers. Some examples:

- *Fish Passage:* Researchers interested in fish habitat restoration inventoried and mapped all of the culverts crossing streams in and around the park on Mount Desert Island and classified their possible impacts on the ability of fish to move up- and down-stream. With that information in GIS, they can analyze which culverts, if they were fixed, could restore the greatest amount of fish habitat. They can also create maps to communicate and work with partners to get funding to accomplish this work.
- *Scenic Vista Protection:* GIS was used to analyze the viewshed from significant viewpoints in the park toward the ocean to allow the park to comment on proposed sites for ocean wind power.
- *Nutrient Flow Research:* Researchers collected data on nutrient input and response in the Northeast Creek wetland complex, then used that data in GIS to create a model of nutrient input to the whole wetland system. The model is based on different land use categories and produces maps and calculated data figures as output. It also provides predictions on what nutrient input levels might cause eutrophication in the estuary.
- *Trail Maps:* In the 1990s, the park used global positioning systems to map the existing hiking trails. This information was used by the National Park Service to develop an Acadia National Park's Trails Management Plan and cultural landscape report. The hiking trail data layer is available for download by cartographers and GPS enthusiasts (http://nrinfo.nps.gov).

Integrated Pest Management (IPM)

The IPM Program oversees the park's management of plant and animal pests. Pests are those species that interfere with the purposes of the park such as protecting natural or cultural resources, or visitor safety. For example, carpenter ants threaten the structural integrity of historic park buildings. Raccoons and red foxes can carry rabies and quickly learn to aggressively scavenge food scraps from campers and other visitors. Non-native forest insect

pests such as Asian longhorned beetle and emerald ash borer can change the structure, composition, and functions of forests in Acadia. The National Park Service uses Integrated Pest Management (IPM) to manage these problems. This approach is based on proper identification of a pest and a thorough understanding of the biology of the pest species being managed. IPM minimizes the use of chemical treatments in favor of other actions such as prevention, education, monitoring, setting thresholds for tolerating the effects of pests, and alternative treatments, when appropriate. Chemical treatments are used only as a last resort, and only when shown to be the most effective and least damaging method of treatment.

Lands Program

Acadia National Park is one of the few national parks created mostly of donated lands to the federal government (approximately 80% donated). In addition, Congress authorized the National Park Service to hold conservation easements on private property to preserve and protect scenic, ecological, historic, and cultural resources within the Acadian archipelago. The park's lands program is charged with keeping records of park properties, marking and monitoring park boundaries, monitoring conservation easement lands, and working together with interested landowners to protect their lands. Specific components of the lands program include:

Conservation Easements

As of 2011, The National Park Service at Acadia National Park holds conservation easements on over 200 properties in 18 towns as well as the unorganized territories. All easements but one are on islands. These conservation easements protect over 12,400 acres of land. Ongoing activities include:

- Evaluating properties offered to the National Park Service as potential conservation easements
- Working with landowners interested in establishing conservation easements to devise appropriate strategies to protect their properties
- Monitoring National Park Service conservation easement lands to insure compliance with the terms of their conservation easement
- Resolving violations of conservation easements which the National Park Service is responsible to protect.

Boundary Management

Acadia National Park has approximately 210 miles of boundary, not all of which are marked or surveyed. Ongoing activities include:

- Monitoring development on lands adjacent to the park to ensure that activities on private property do not encroach on or damage park resources
- Clearing, marking, surveying, and maintaining park boundaries

Outer Islands

While the Mount Desert Island portion of Acadia National Park receives most of the publicity and visitors, the park also administers all or part of sixteen other far less visited islands, from Isle au Haut on the eastern edge of Penobscot Bay to St. Croix Island on the St. Croix River bordering New Brunswick, Canada.

Several of these islands are connected to the mainland or larger islands by gravel bars while others are a short boat trip from a launch site. Others are fairly remote. The National Park Service (NPS) completed a preliminary inventory of flora and fauna and recorded observations of human on most of these islands in 1993. Some of them harbor nesting bald eagles or colonial nesting seabirds, while others contain concentrations of plants rare in Maine.

All the park's small islands are considered sensitive to human impact because of their size and unique resources. All of them are also within the Protected Area Management Subzone described in the Acadia National Park General Management Plan (GMP). The GMP states that this subzone merits the highest protection and should be managed for minimal or no human intrusion. The NPS manages these islands to ensure that recreational use does not harm their special resources.

Park Regulations on Islands

Several NPS general regulations are essential for island preservation. Eagle and colonial seabird nesting islands are closed to human use during critical time periods. Because of the variability of wildlife breeding chronology and the availability of new information each year, contact the park for the latest information before planning a visit. Eagle nesting islands may open earlier if nests fail. Fires and backcountry camping are prohibited throughout Acadia National Park, and compliance with these regulations is critical to the health of Acadia's remote islands. One fire could severely impact wildlife, rare plants, and rare habitats. Camping and fires are permitted only at the Duck Harbor Campground on Isle au Haut. Pets must be on a leash at all times, and they are prohibited in the Duck Harbor Campground. Feeding wildlife, collecting rocks such as beach cobbles, and picking wildflowers or other plants are prohibited throughout Acadia National Park.

Island Specific Leave No Trace Practices

- Plan ahead. Learn about local waters. Know your limitations. Ask about landing sites.
- Groups larger than six persons are strongly discouraged.
- Use and impacts from foot traffic should be spread out in these pristine areas. Step on rocks, gravel, bare soil, or other durable surfaces whenever possible. If it is unavoidable, grasses are usually the most durable vegetation for foot traffic. If there are impacted areas like well-established but unofficial paths (e.g. Bar Island, Bar Harbor), concentrate use on them.
- Human waste should be packed out. If this is not possible (and it is if you are prepared), it should be buried 6 inches deep and 200 feet from water sources and human use areas.
- Sea kayakers, canoeists, and other small boaters should observe shorelines carefully for eagles and seals. To avoid flushing perched or nesting eagles or seals hauled out on ledges, keep ¼ mile away and never approach them head on. An intense gaze directed at you, a ruffling of feathers, or the slightest seal shuffle sends the message to "give me space."
- Disturbed seabirds often dive on island visitors from the air, and are very vocal. This behavior indicates you should leave the island regardless of the time of year.
- Please do not construct rock cairns or other objects, and refrain from building "fairy houses," also sometimes called "gnome homes."

The Islands

Baker Island is located 6 km south of eastern side of Mount Desert Island and is almost connected at low tide to Little Cranberry Island. Most of the island is covered with red and white spruce except for the north end which is in fields and has several buildings. Baker Island was settled in the early 1800s by the Gilley family. A few private property owners may be in residence during the summer months. The Baker Island Lighthouse, built in 1828, sits at the center of the island. During the summer season, visitors arrive daily and can enjoy a hike across the island. The NPS runs naturalist-guided tours on Baker Island during the summer. Please respect historic buildings and private property.

Bald Porcupine Island is an undeveloped, easily accessible island located 1km east of Bar Harbor in Frenchman Bay. A breakwater runs between Mount Desert Island and Bald *Porcupine Island:* High, steep cliffs on the south and east sides are used by nesting and perching black guillemots. Bald eagles have nested here in the past and still use the island for perching. The island's name comes from earlier days when the forest was cleared for livestock grazing. The island may be closed due to nesting eagles, but even if it is not, respect the eagles' need for space, and avoid disturbance to guillemots on the cliff.

Bar Island (Bar Harbor) gives the town its name. Extending 1 km north from West Street in town, the bar is exposed and the island accessible by foot for about 1.5 hours either side of low tide. Check a tide chart before your visit. A small system of roads and trails offers a chance to explore this now undeveloped island, where the sole remaining home was removed by the NPS in 2010.

Bar Island (Somes Sound) at the north end of Somes Sound and the entrance to Somes Harbor, is a small, undeveloped island. This Bar Island usually supports nesting bald eagles and is closed from Feb. 15 – August 31.

Heron Island is a remote, undeveloped, treeless island located in Jericho Bay 7 km southwest of Swans Island and 1.6 km southeast of Marshall Island. Historically, great blue herons and black-crowned night herons nested here. Currently, many species of colonial nesting seabirds are in residence during the spring and summer months. Heron Island also supports several species of state or locally rare plants. Heron Island is closed from April 1 – July 31. Tread lightly; step on rocks where possible and use any existing trails.

The Hop is a small, undeveloped island in Frenchman Bay connected to Long Porcupine Island (see below) by a gravel bar at low tide. It is located 4 km northeast of Bar Harbor. It is currently used as a perching site for bald eagles. The island is not usually closed to visitors, but bald eagles usually nest nearby on Long Porcupine Island. Please respect the eagle's need for space.

Isle au Haut is a large island located 35 km southwest of Mount Desert Island on the eastern edge of Penobscot Bay. Six miles long and two miles wide, the National Park Service shares the island with a small year-round and summer community. About ½ of the island is under park ownership thanks to a large donation from a local family in 1943. Isle au Haut is served year-round by a privately owned ferry, which provides closer access to park lands in the

summer. The NPS operates a seasonal campground at Duck Harbor and there are 19 miles of hiking trails. More information about Isle au Haut, see the In-Depth/Isle Au Haut section.

Little Moose Island is located southeast of Schoodic Peninsula and connected to it by a gravel bar. Visitors have about two hours either side of low tide to explore. A primitive network of trails exists and visitors are asked to stay on the trails or the rocky shoreline to protect the fragile habitat.

Long Porcupine Island, located 4 km northeast of Bar Harbor in Frenchman Bay, was acquired by the NPS from the Nature Conservancy in 2004. The southern end of the island has picturesque cliffs. This undeveloped island is usually home to nesting bald eagles and is closed from Feb. 15 – August 31. It is connected to another smaller park island called the Hop (see above) by a gravel bar.

Pond Island is a small forested island located just west of the southern end of Schoodic Peninsula. The gravel bar exposed at low tide is tempting but there is always a water crossing.

Rolling Island, located ½ km east of the Schoodic Peninsula, is a small forested island that is usually home to nesting bald eagles. It is closed from Feb. 15 – August 31. Visitors to Schoodic Peninsula may observe the eagles easily from the Schoodic Loop Road.

Saint Croix Island is located 2.5 hours from Mount Desert Island near Calais, Maine in the tidal portion of St. Croix River. The Saint Croix Island International Historic Site commemorates one of the earliest attempts (1604) at European settlement (the French) on the North Atlantic Coast. The island is managed through Acadia National Park and a mainland site is open seasonally offering a visitor center and ranger programs, but no guided trips to the island. The island is not usually closed to visitors, but bald eagles usually nest nearby. Please respect the eagle's need for space.

Schoodic Island is an undeveloped island located 1 km southeast of the tip of Schoodic Peninsula. The exposed headland of Schoodic Peninsula is noted for its rough waters. The island is usually home to nesting bald eagles and colonial nesting seabirds. Because of this, Schoodic Island is closed from February 15 – August 31.

Sheep Porcupine Island is an undeveloped, forested island located about 1.5 km northeast of Bar Harbor. It has steep, rocky cliffs on its south and east sides. The island usually supports nesting bald eagles and is closed from Feb. 15 – August 31.

The Thrumcap is a small, round, treeless island located ½ km east of Mount Desert Island, and is easily seen below the Champlain Overlook on the Park Loop Road. Seabirds nest on the island, which is closed from April 1 – July 31.

Western Ear is a small forested island located off the southwest end of Isle au Haut. It is connected to Isle au Haut by a gravel bar that offers very limited access at low tide. Avoid getting stranded.

Monitoring Assistance: If you discover campers or fires, or other inappropriate behavior, please notify park staff at (207)288-8791 as soon as possible. Any other unusual observations are also welcome.

Visitor Use

Park Visitation

Acadia National Park is one of the ten most visited national parks. Visitation peaked in 1995 at 2.8 million visits, dropped to 2.0 million visits in 2005, 2006, and 2008, and rebounded to 2.5 million visits in 2010. Estimating use of Acadia is difficult, to say the least, as there are multiple unattended entrances to the park and visitors go in and out of the park multiple times during the day and during their entire visit. Methods for estimating use were recalibrated in 1990. The main element of the system is a traffic counter at Sand Beach and monthly correction factors are used for the number of persons-per-vehicle and the number of other vehicles elsewhere in the park that day that don't visit Sand Beach. Annual visitation numbers can be found at the NPS Public Use Statistics Office website: **www.nature.nps.gov/stats**

Cadillac Mountain

Cadillac Mountain is the epicenter of visitor use in Acadia National Park. The summit receives an estimated 500,000 visitors per year, with more than 6,000 per day sometimes in August. Since 2000, the NPS has conducted a number of social science and recreation ecology research projects to better understand the visitor experience and visitor impacts. All of this will eventually direct the implementation of a more detailed management plan for the summit. Park staff has also constructed exclosures to protect some areas of the summit from trampling, but even after ten years, recovery of vegetation is extremely slow.

Leave No Trace signs have also been installed to educate visitors about proper behavior throughout the summit. Visitors should stay on the trail or step on rock ledge and avoid moving rocks or building rock cairns or other objects. Mountain soils are very thin and subject to severe erosion when vegetative cover is lost or embedded rocks are removed from where they lie.

Visitors should also secure all trash before opening car doors. The summit is very windy, and any loose paper will blow right out.

Carriage Road Management

Biking on the park carriage roads grew enormously in popularity in the 1980s thanks to the advent of the mountain bike. Complaints from visitors and residents about crowding and problem behaviors led the park to apply the Visitor Experience Resource Protection (VERP) Framework, a carrying capacity planning process. Dr. Robert Manning of University of Vermont conducted survey research on carriage road users from 1994-1996 to gather information to support the VERP process and eventual carriage road management decisions. Standards were established for the number of daily visitors to the carriage road system and the occurrence of several problem behaviors. Park staff has monitored use and behaviors since 1997. Monitoring results show that carriage road use is within the daily standard of 3,000 visitors per day. About 1500 – 2000 visitors use the carriage road every day in July and August,

or 50 – 60 thousand per month. Behaviors, however, are a potential problem. Efforts to educate visitors about problem behaviors are expected to increase.

Climbing

Rock climbing increased greatly in popularity at Acadia during 1980s and 1990s. Climbing self-registration box data now indicate that at least 3,500 climbers use Otter Cliffs and 1,200 use the South Wall annually. Otter Cliffs became crowded largely because of its popularity with climbing groups, and soil erosion and vegetation loss there was severe. The installation of fixed protection was increasing at Acadia and of concern to managers, although it was not excessive when compared with other climbing areas in the region. Between 1995 and 1997, Acadia National Park developed a climbing management plan with public input to address these and other issues. The climbing management plan and more rock climbing information can be found elsewhere in this guide and on the park website.

Trails and Summits

The park has monitored visitor use of trails and summits since 1995. On a busy summer day more than 5,000 hikers will strike out onto Acadia trails. The Ocean Path paralleling the Park Loop Road along Ocean Drive is by far the most popular one. The eight most popular trails for more intrepid hikers are the Beehive, Gorham Mountain, Jordan Pond, South Bubble, Great Head, Wonderland, Ship Harbor, and the Precipice Trail when it opens after peregrine falcon nesting ends. The most popular summits, as you might expect, are the Beehive, Gorham Mountain, and South Bubble, but many others are quite popular as well.

Visitor Surveys

In 1998 and again in 2009, the National Park Service conducted studies of visitors to Acadia National Park. Randomly selected individuals were asked questions about their current visit to the park, their opinions on several timely and important issues (the bus system, commercial services, and park fees), overall satisfaction with park facilities and programs, and their understanding about the mission of the National Park Service at Acadia National Park.
In 2009, most visitors were from the northeastern U.S. with Maine and Massachusetts leading the way at 14% each. About 50% were first time visitors and 50% repeat visitors to the park. Seventy-five percent of visitors went to Cadillac Mountain. Jordan Pond, Sand Beach and Thunder Hole were the next most visited sites. Sightseeing and hiking on park trails were by far the most popular activities. Most visitors were quite satisfied with park facilities service and recreation opportunities. More information can be found at the University of Idaho Park Studies Unit website: **www.psu.uidaho.edu**

Leave No Trace

Leave No Trace is a nationwide low impact outdoor ethics program of the four federal land managing agencies. At Acadia, we are including the Leave No Trace principles in our signs, brochures, and other programs. Four ridge runners hired by Friends of Acadia (local park support group) began educating park hikers about Leave No Trace principles and building cairns in 1998. Further information on Leave No Trace is available elsewhere in this guide and at **www.lnt.org**

Water Quality

It may appear that Acadia's lakes, ponds, and streams are largely untouched by human influences, but they are impacted by development within and adjacent to park lands. Increased water withdrawals, sewage disposal, and non-point source pollution are very real concerns. Other impacts to Acadia's water resources may come from oil or hazardous waste spills, landfills, and atmospheric deposition (acid precipitation). In addition, Acadia National Park has limited jurisdiction over many of these water resources within the park boundaries. Seven towns, two counties, four municipal water districts, and numerous state and federal agencies all hold interests in their management.

Considering these complications along with the heavy visitation to Acadia National Park, it is imperative that water resources be monitored closely. Acadia National Park's water monitoring program provides baseline information characterizing physical and biological conditions. Information collected today supplements a data history extending back to 1942, providing a base to help identify future impacts and threats, and to document changes to these water resources.

Water Monitoring Program

Acadia NP freshwater resources include 24 named lakes, 34 named streams, and numerous wetlands within or adjacent to the park boundary. Although park staff began monitoring lakes in the 1980s, data on park streams came largely from several University of Maine and US Geological Survey (USGS) research projects, dating from the early 1980s to the present. The park lacked a structured program for monitoring stream water quality and quantity, although Maine Department of Environmental Protection (MDEP) protocols were adopted in 1997 to obtain baseline information on the abundance and diversity of stream invertebrates, which can be used as water quality indicators.

Acadia is one of 13 National Park Service units in the Northeast Temperate Network (NETN), which in turn, is one of 32 networks comprising the NPS Inventory and Monitoring Program. The NETN has developed a series of protocols to monitor "Vital Signs"- indicators of the health of the ecological systems within the parks and their response to natural and anthropogenic stressors at different ecological scales. Vital signs monitoring at Acadia began in 2006, with the adoption of the NETN Water-Quality Monitoring Protocols in Lakes, Ponds and Streams as the backbone of the parks freshwater monitoring program.

The protocol calls for a total of 37 park lakes and streams to be sampled monthly from May through October, with 11 lakes and 11streams monitored each year on a 2 or 3-year rotation schedule. Park staff measure physical and water chemistry parameters at each site, and gather water samples which are analyzed for nutrients (nitrogen and phosphorus) at the University of Maine's Sawyer Environmental Chemistry Research Laboratory. Stream discharge (flow) is measured at each monthly monitoring visit, and stage height (water level) is recorded weekly at 17 lakes during the open-water season. Several of the water quality monitoring parameters are described below:

Temperature
Temperature influences numerous biological activities in water systems. The solubility of compounds, the density of water, the levels of dissolved oxygen, the distribution and abundance of organisms, and their metabolic rates (not to mention the comfort of swimmers in cold lakes!) are all affected in one way or another by temperature.

Dissolved Oxygen
Oxygen is as necessary for aquatic organisms as it is for terrestrial. Free oxygen in water, known as dissolved oxygen (DO), comes from two primary sources—the atmosphere and photosynthesizing aquatic plants. Dissolved oxygen levels are an indicator of the life support system of a water body and can be influenced by many factors.

Dissolved oxygen concentrations vary on both a seasonal and daily basis. DO can increase as oxygen is produced by algae, vascular plants, and phytoplankton through photosynthesis, and is depleted when oxygen is used by aquatic species and when algae, bacteria, and dead organisms decay. Seasonal temperature changes affect the level of dissolved oxygen as well—cold water holds more oxygen than warm water.
A pronounced drop in dissolved oxygen can occur when mass die-offs of algae totally deplete oxygen supplies due to decomposing bacteria's oxygen use. Sometimes large algal blooms can occur from anthropogenic sources of excess nutrients, such as fertilizer run-off or atmospheric deposition, or leaching landfills. This human-accelerated process of nutrient enrichment is known as cultural eutrophication.

Transparency
Transparency, an important measure of water quality, indicates how far light can penetrate into the water column. It will change throughout the year due to spring and fall changes in algae and other dissolved, suspended material. Some reduction in visibility is normal; too much reduction may serve as a warning flag. For example, algae and zooplankton provide the base for the aquatic food chain, but too many decomposing algae reduce oxygen levels. Large quantities of silt and other suspended sediment could indicate local erosion which can introduce excess soil nutrients, present a problem for gill breathing organisms, and limit photosynthesis in aquatic plants.

Transparency is measured with a Secchi disk, an 8-inch, black and white disk that is lowered into the lake at the end of a measuring tape. The observer watches the disk descend, using a viewing scope, and records the depth at which the disk is no longer visible through the scope. This value is known as the "Secchi depth". Monthly readings are averaged and the annual averages can be compared to determine changes in water quality (higher Secchi depths indicate less biologically productive, clearer water).

Many of Acadia's lakes are extremely transparent. Jordan Pond is one of the clearest lakes in the state of Maine, with a Secchi depth of 21.7 meters (71.2 FEET!) measured in May 1999.

pH
Assessing how acidic or basic (alkaline) a body of water is helps determine the overall quality of the water and habitat suitability for organisms. The pH scale measures acidity/alkalinity on a scale of 0–14. Levels below 7 are on the acidic side; above 7, alkaline. pH 3 is 10 times more

acidic than pH 4 and 100 times more acidic than pH 5. The optimum pH range for most organisms is between 6.5 and 8.2.

The effects of atmospheric deposition which can alter pH levels are a major concern at the park. Acid precipitation (rain, snow, and fog) can influence lake and stream chemistry, and cause nutrient enrichment in estuaries. The majority of the lakes, ponds, and streams of Acadia have near-neutral pH levels that appear to be relatively stable over time. The buffering capacities of park lakes are generally very low, making them potentially vulnerable to episodic acidification considering the average rainfall pH in the region is 5.0.This occurs occasionally in some of the park's headwater streams.

Other Tests

Other tests to determine water quality include measurements of specific conductance (the level of dissolved ions in the water, which can be an indicator of pollutants), nutrients such as nitrogen and phosphorus, and chlorophyll a. From Memorial Day to Labor Day, water samples are collected weekly at Acadia's swim beaches in cooperation with the Maine Healthy Beaches Program to detect the presence of bacteria that can cause swimming-related illness.

IN-DEPTH

Hulls Cove Visitor Center

The visitor center is located off Route 3 in Hulls Cove, approximately eight miles from the Trenton Bridge (leading onto Mount Desert Island) and 2.5 miles northwest of Bar Harbor. The entrance to the visitor center parking lot, the accessible entrance parking lot, and start of the Park Loop Road are clearly marked by a large Acadia National Park sign. The visitor center is open from April 15 through October. Hours are 8 a.m. to 6 p.m. during July and August; 8 a.m. to 4:30 p.m. or 8 a.m. to 5 p.m. other months. Expect to spend one hour at the visitor center with your group.

Significance

The visitor center is an important beginning point for any visit to Acadia National Park and is staffed by knowledgeable park staff. General information on restaurants, hotels, bed and breakfasts, etc., is not available here.

Safety / Regulations

- The visitor center will have the latest information on protecting the natural and cultural resources of the park.
- Smoking, food, beverages, and pets are not allowed in the visitor center. Assistance dogs are always welcome. Please do not leave your pets unattended.
- Health alerts such as poor air quality will be posted at the visitor center.

Parking

In addition to the main parking lot, a smaller, accessible entrance lot also serves as the bus/group drop off area. This lot is well signed and is reached by going straight at the four-way stop when entering the park from Route 3. From the Park Loop Road, turn left at the four-way stop. A short path leads to the lower level where steps and an elevator access the main visitor center.

Facilities

Restrooms are available on both levels of the visitor center. Restrooms are not available after hours. Food, sunscreen, etc. is not sold at the visitor center. The closest location for these items, as well as for gas, is at the Hulls Cove General Store, located 1/3 mile north on Route 3 in Hulls Cove.

Bookstore - A large selection of books and other items are available for sale in the bookstore operated by Eastern National; a nonprofit cooperative partner of the National Park Service. A self-guided tape tour of the Park Loop Road, Cadillac Summit and Somes Sound may be purchased at the bookstore.

Relief Map - A large relief map at the visitor center helps orient park visitors. Park highlights and the surrounding communities are labeled. Use the relief map to familiarize your group with your planned route. Map orientation talks are offered by park rangers. If you would like a ranger talk, please contact the visitor center ahead of time at 288-8832.

Video - The 12-minute Acadia Always captures the essence of Acadia's significance and beauty. It is shown on the hour and half-hour throughout the day. The video is captioned for visitors with hearing difficulties. Translation headsets are available for French and German visitors, as well as a narration for the sight impaired.

Fees

Park passes are available here. Tour bus operators should review the Commercial Fees section of this guide then contact the park fee coordinator in advance of their trip if further information if needed. The number is (207)288-8786.

Information

Park staff assists both visitors in planning their park trip and tour guides in answering any last minute questions. In July and August, lines at information desks are long between the hours of 10 a.m. and 2 p.m.

An Accessibility Guide for the park is included in this guide but is also available at the visitor center desk.

Park Newspaper and Map

The park's newspaper, the Beaver Log can be picked up at information centers (also available online). The park map is designed primarily for orientation to the highlights of Acadia and is not a hiking map and does not show all roads on Mount Desert Island. Maps of Acadia National Park or other informational handouts are not available in quantity. If needed, contact Park Headquarters in advance at (207)288-3338 to ask about bulk cost.

Ranger-led Program Schedule

A separate publication provides listings of ranger-led programs such as hikes, walks, evening programs, boat cruises, and children's programs as well as helpful information about your visit. If you have a large group, please divide into smaller groups when attending programs. A certified sign language interpreter may be available for some interpretive programs with a two week advanced notice. Service is dependent on availability of funds and interpreters. Phone (207)288-8800 (TTY) or (207)288-3338 (voice) for information.

Sieur de Monts Area

Sieur de Monts is located off the Park Loop Road, 5.6 miles from the visitor center. It is also accessed 3 miles outside of Bar Harbor, from Route 3.

Significance

George Dorr, one of the founders of the park and its first superintendent, loved the tranquility of this spot. A small spring used by both American Indians and early settlers captivated Dorr here. He made a small depression in the ground for the spring waters to fill and then built the octagonal shelter over it. His landscaping efforts reflect a different view of nature at the time. Dorr's interest in the French history of this area inspired him to name the spring after the French explorer and nobleman, Pierre Dugua, Sieur de Mons. Dorr's work at Sieur de Monts symbolizes the enthusiasm and the spirit of many early twentieth century summer residents who worked to preserve and protect the natural and historic values of Mount Desert Island. Today, Sieur de Monts serves as a memorial to George Dorr for his work toward the creation of this national park and his direction of it from 1916-1944 as its first superintendent.

Parking

The parking lot fills to capacity during the summer between the hours of 10 a.m. and 3 p.m. There is no parking on the side of the road leading into and exiting from the area. Bus parking is on the right at the beginning of the parking lot. A drop off area is in front of the Nature Center.

Safety

The parking lot is extremely busy especially on July and August afternoons. Please watch for vehicles and pedestrians.

People are sometimes confused when leaving the parking area as to which direction to head. Please be alert for drivers who change their mind quickly.

Time Allotment

If visiting all sites, expect to spend one hour.

- Restrooms: 10 minutes
- Wild Gardens of Acadia: 15 minutes
- Nature Center: 15 minutes
- The Abbe Museum: 20 minutes

Facilities & Area Highlights

Restrooms are available on the left side of the parking lot. Because all other sites of interest are on the right, visitors often do not see them. Be sure to point out the location before exiting the bus.

The Abbe Museum

The museum is open mid-May to mid-October. Admission is $2.00 for adults and .50 for children under 12.The Abbe Museum also operates a second museum in Bar Harbor that focuses on the Wabanaki people and their four tribes—the Penobscot, the Passamaquoddy, the Micmac, and the Maliseet. For information call (207)288-3519. The paved path from the

Nature Center to the museum is fairly steep and not easy for wheelchairs. For wheelchair access, drive to the accessible entrance at the back of the museum.

A contemporary of George B. Dorr, the park's first superintendent, Dr. Robert Abbe, a surgeon from New York was fascinated by the history of the area's native people and their prehistoric ancestors. The purchase of a collection of ancient stone tools sparked Abbe's amateur archeology hobby. His determination to collect the objects and stories of Maine's prehistoric and American Indians resulted in the building of the octagonal museum that today houses one of Maine's best archeological collections.

The Wild Gardens of Acadia

Examples of 12 park habitats from mountain summits to fresh meadows and shoreline to bogs are re-created here with the native plants of Acadia. A living field guide, the plants are labeled and serve as an outstanding educational resource to familiarize one with the area's native vegetation. Self-guided brochures are available for a small fee at the garden entrance near the Sieur de Monts Nature Center. Volunteers are often available to answer questions. The Wild Gardens of Acadia is managed and maintained by a special committee of the Friends of Acadia in conjunction with Acadia National Park. Open dawn–dusk. No dogs, picnics, or smoking allowed. Most portions of the Wild Gardens are accessible, although some paths are narrow.

Acadia National Park Nature Center

The Nature Center is open weekends in May, and daily 9 a.m. to 4 p.m. June to Columbus Day. A small bookstore is available. Admission is free.

The Nature Center offers exhibits on the "science behind the scenery" of the park. Learn more about the important work of park biologists and researchers as they, armed with valuable information, protect park resources. In addition, the Nature Center offers an animal track matching game and taped frog calls.

Walks

For a pleasant walk in the area, the Jesup Path and Hemlock Trail (wide road section) combine to make an easy one mile round trip. Through birch forest, meadow, and towering hemlocks, three different Acadia habitats can be enjoyed.

Sieur de Monts Interpretive Guide explains the significance of sites at Sieur de Monts. For the text, see the Interpretive Guides section.

Trailheads and trailhead connections

Many trails, from easy walks to strenuous hikes up Champlain, Dorr and Cadillac, are accessed from this site. See the Park Activities In-Depth/Hiking section for more information.

Bird Watching

Deciduous woods, open meadows, coniferous forests, ponds, and cliff-side habitats converge in the Sieur de Monts area, creating an ideal location for birding enthusiasts. Check the wildlife watchers notebook in the Nature Center to see what's been spotted or add your own observations. For further information and a bird checklist see the Acadia's Birds section.

Sand Beach

Sand Beach is approximately a half mile from the entrance station. Turn left into the main parking lot. The beach is not visible from the parking lot, but can be seen from the top of the stairs leading to the beach. If venturing down to the beach, use the stair's handrails and watch your footing.

Sand Beach is nestled in Newport Cove, partially enclosed by the arm of Great Head to the east, Old Soaker (rock ledge in cove) to the south, and the cliffs of Ocean Drive to the west. The beach's shallow slope and relatively quiet waters allow for the deposition of fine sediment material diverted into the cove by Great Head and Old Soaker.

Sand Beach's beautiful expanse of sand is more than meets the eye—it is mostly made from small shell fragments. A close look at a handful of sand reveals blues, greens, creams, purples, and pinks. Up to 70 percent of the sand mixture is broken shells from intertidal creatures like mussels, sea urchins, barnacles, and periwinkles. Feldspar and quartz from the local granite bedrock add pink and white hues.

Swimming is a popular activity. Sand Beach's warmest water temperature is between 55 and 60 degrees in August.

The sand dunes behind the beach are another feature. Fenced off to protect their fragile nature, they are considered ecologically significant due to the scarcity of such dunes along the Maine coast. The botanically exceptional stand of American beach grass associated with the dunes is critical for stabilizing the shifting sands.

In the distance behind Sand Beach, the profile of the Beehive looms to the north. Look closely for hikers on the cliffside, easily dwarfed by the mountain wall. Like the Precipice, the Beehive trail has metal rungs embedded in the granite for climbing and small metal bridges to cross chasms.

Jordan Pond Area

Parking

The South parking lot by the Jordan Pond House Restaurant is for restaurant guests. Just north of this turn is the bus only entrance. Two larger lots are in the North parking area. Buses are not accommodated in either lot. The upper lot is connected to the Jordan Pond House via a level wood chip path in the southeastern corner of the lot. The lower lot provides access directly to Jordan Pond via the boat ramp. Parking along the shoulder of the Park Loop Road is illegal. The Jordan Pond Gate Lodge and Acadia Corporation dormitory are private residences with no public parking.

Facilities

Jordan Pond Restaurant and Gift Shop

There are restrooms on the lower level of the gift shop and inside the restaurant. A vault toilet is available in the parking lot by the Jordan Pond boat ramp.

Accessibility

The Jordan Pond House is fully accessible, including the upper deck via an elevator.
The carriage road across from the Jordan Pond Gate Lodge is accessible.
The pond can be reached via an accessible trail from the lower parking lot by the boat ramp.

Safety

- Congestion in this area is the rule in July and August, so use extreme caution while driving.
- Jordan Pond is the water supply for the Seal Harbor community. Wading or any body contact with the water is not permitted.
- Occasionally during the summer, the Jordan Pond House experiences an outbreak of yellow jackets on the lawn where tea and popovers are served. The staff will not seat customers where the bees are of greatest density, but visitors should be aware.
- Jordan Pond is a highly used area, and off-trail use by both hikers and bikers is a concern. Areas where paths have been worn by off-trail users are roped off and re-vegetated with native plants. Please remain on designated trails.

Safety on Carriage Roads

- Walkers should be aware of cyclists, while cyclists should be considerate of others by not racing past walkers.
- Cyclists encountering riders on horseback should slow, allow room, and be prepared to stop.

Time Allotment

At a minimum, expect to spend one hour at Jordan Pond; more if you plan to eat at the restaurant or walk the nature trail.

- Restroom visit: 15 minutes
- Walk to the pond's edge or along a short section of carriage road: 1/2 hour
- Gift shop browsing: 15 minutes
- Tea and popovers, provided you have a reservation: 1 hour
- Jordan Pond Nature Trail: 30 minutes

Jordan Pond Area Highlights

Jordan Pond Gate Lodge

The Jordan Pond Gate Lodge, as well as the Brown Mountain Gate Lodge on State Route 198, was built in 1932. The French Romanesque Revival style of the Gate Lodge has whimsical details such as birdhouses in the garage gable and A's in the shutters for the architect, Grosvenor Atterbury. Timbers are from cypress and the roof is covered with a crudely made French shingle tile in shades of brown, red, and black, similar to terra cotta. The gate lodges were placed at a spot where the motor road and carriage road intersected. A bell hung on the rod through the small archway by the gate so carriage drivers could alert the gatekeeper. Although a gatekeeper never lived in the gate lodges, John D. Rockefeller Jr's engineer, Paul Simpson, lived here with his family in the summer. Today it is a private residence for the National Park Service and not open to the public.

Jordan Pond House

An August afternoon here teems with people on bikes, in cars, and on buses. But imagine the solitude of the same location over 100 years ago where owners of a rustic farm served meals to those who would venture to the remote location. The McIntire family bought the property in 1895 and began the tradition of tea and popovers. In 1946 John D. Rockefeller Jr. purchased the property and donated it to the National Park Service. He also founded the Acadia Corporation, the company that took over management of the Jordan Pond House. In 1979, the original building burned, but the tradition did not end. By 1982, the present-day restaurant was serving the next generation of tea and popover fans.

The restaurant serves lunch and dinner as well as tea and popovers. Seating can be on the lawn, covered porch, or in the restaurant. Reservations are important (276-3316), especially in the afternoon for tea and popovers where waits of up to one and a half hours are not unusual. Visitors bringing their own lunch can eat upstairs on the deck (chairs and tables provided) or on the lawn in front of the restaurant's outdoor seating. The gift shop sells numerous books and guides, clothing, and souvenirs, as well as snacks upstairs.

Jordan Pond

The "classic" Jordan Pond view of the Bubbles can be seen by walking behind the restaurant or down the boat ramp. Jordan Pond's U-shaped valley, trough lake, rounded mountains, and steep cliffs are all evidence of glacial carving. The view of Jordan Pond from the south across an open blueberry field is maintained with periodic controlled burns by park rangers to keep tree growth to a minimum and to rejuvenate the blueberry field. Well-meaning hikers and bikers do more damage than controlled burns when straying off the designated trail, as footsteps and bicycle tire treads create eroded paths. To discourage wandering, trampled areas are re-planted with native plants and signs request visitors to stay on the trail.

Jordan Pond is Acadia's deepest lake at 150 feet and is the second largest at 187 acres. It is also one of Acadia's most pristine lakes, with outstanding mountain scenery to match; Penobscot Mountain to the west, the Bubbles to the north, and Pemetic Mountain to the east. Jordan Cliffs on Penobscot Mountain was the site of a successful reintroduction program in the mid-1980s to return peregrine falcons to Acadia National Park. Peregrine falcons still sometimes nest on the cliffs.

Its glacially-carved landscape exhibits numerous geologic features. Jordan Pond's beauty is not easily forgotten and has created a favorite destination for over a century for multitudes of visitors who have enjoyed canoeing, quiet solitude, or tea and popovers at the Jordan Pond House.

The pond is the water supply for the Seal Harbor community. To maintain its exceptional water quality, wading or any body contact is not permitted. Monitoring for continued water health occurs every summer.

Carriage Roads

Carriage roads intersect the heart of Jordan Pond, winding south past Jordan Stream and rising north above the western shore toward the Bubbles. The generous gift of John D. Rockefeller Jr., they were built from 1913 to 1940 and reflect Rockefeller's love of road building and his well-trained eye for the landscape. Numerous features enhanced this state-of-the-art road system that comprises over 50 miles. Three of the 17 carriage road bridges are in the Jordan Pond area. The roads are easily accessed. It is important to note some of the carriage roads to the south of Jordan Pond are on private property and off-limits to bicyclists (but not horses or walkers). Both bikers and walkers should bring a Carriage Road Users Map or guide book (available at park information centers). Posted numbers at road intersections correspond to maps in carriage road guides. Check carriage road guides for specific closure areas. Carriage road excursions in addition to the one described below can be found in the Park Activities In-Depth/Bicycling section. Routes are also good for walking.

Three stone carriage road bridges, the Jordan Dam Pond Bridge, Cobblestone Bridge, and West Branch Bridge can be sought out. The Jordan Pond Dam Bridge, designed after a New York Central Park bridge, is the easiest to reach from the Jordan Pond House, located at the southern end of the pond. The Cobblestone Bridge, spanning Jordan Stream, is .6 miles to the south of Jordan Pond House. It is the first bridge built and the only one faced with rounded stones rather than cut granite. The West Branch Bridge, half mile to the north, on the carriage road leading westward towards the Amphitheater, has a narrow arch which is designed after another foot bridge in Central Park. For more information, see the Acadia's People/Carriage Road Bridges section.

For additional helpful information about Jordan Pond, see the Acadia's Landscape section.

Cadillac Mountain

From atop Cadillac Mountain, all that is Acadia, from rocky mountain summits, a forest menagerie, and freshwater lakes, to jagged coastline and outer islands, is spread at one's feet. Silence, even in the presence of hundreds of other visitors, makes itself known in hushed tones. Overhead, birds float in thermal currents. The most spectacular flights come in autumn with the annual hawk migration.

Cadillac Mountain is the highest mountain along the eastern seaboard at 1,530 feet. It is named after a self-proclaimed French nobleman, Sieur de la Mothe de Cadillac, who was granted 100,000 acres including Mount Desert Island in 1688. He later founded the city of Detroit. The first European to write about this summit and the others surrounding it was Samuel Champlain, who upon viewing this mountainous landmark from the sea in 1604 wrote: "The island is high and notched in places so that from the sea it gives the appearance of seven or eight mountain ranges. The summits are all bare and rocky. The slopes are covered with pine, fir, and birch. I called it the Isles De Monts Deserts." Champlain's description is still accurate, the summits appearing barren of vegetation. Closer inspection shows the summit to be a mix of bare rock, pockets of alpine plants, and stunted trees. This plant mix is similar to the one found above treeline on much higher mountains, but Cadillac's height of 1530 feet is considered too low to be affected by the ecological conditions that high altitude bring. Instead Cadillac's summit environment, like some other mountains in the park, is the result of a lack of soil from frequent fires, wind, and run-off resulting in erosion, and a climate harsh with winter winds, snow, and ice.

The exposed rock provides an opportunity to read part of the island's geologic story. Peering closely at this granite, one can see flecks of white, pink, and grayish black. This color mosaic is made from the individual minerals of quartz, feldspar, and hornblende. Four hundred and twenty million years ago, the origin of this rock was a molten mineral mix deep beneath the surface of the Earth. This magma plug oozed up through overlying rock, causing it to melt and collapse into the fiery solution.

Once cooled, it solidified into granite. The crystal size of this granite lends a clue to how long it took the magma to cool. If you were unable to find any obvious crystals that would indicate a relatively quick cool down. Crystals of an increasingly larger size would indicate a slower cooling period. Eons of erosive elements eventually exposed the rock, setting the stage for what one day would become Acadia National Park's centerpiece. Criss-crossing the rock are cracks and crevices, giving the granite its blocky appearance. Granite's propensity to fracture at 90 degree angles is a result of internal geologic pressure exerted prior to the exposure of the granite at the surface. Exposure to the elements, especially freezing and thawing, has expanded the joints into large obvious fractures. Exfoliation, the result of released pressure as overlying rock layers eroded lessening the weight on the granite, created horizontal cracks. Erosion over time has weathered these granite wrinkles.

Cadillac Mountain provides an ideal setting for sunsets. Many evenings, the mountain summit is dotted with people watching the sky show. After sunset a procession of lights snake down the mountain road. Not quite as many cars head up in the morning for sunrise. Cadillac Mountain competes with two other geographical locations in Maine—Quoddy Head on Maine's

northeastern edge and Mars Hill, further inland to the north, to claim the first sunrise in the country. Because of seasonal variations, Cadillac Mountain sees the sun first from two weeks after the autumn equinox through the two weeks before the spring equinox. Those combined four weeks before and after the equinoxes give first sunrise honors to Quoddy Head. From the spring equinox to the autumn equinox the first sunrise in the United States is at Mars Hill.
In the late 1800s, some visitors could simply wake atop Cadillac Mountain (then called Green Mountain) to watch the sunrise—from a hotel. The Summit House, built in 1883 housed up to 50 guests and could serve 130 diners. Access came by foot or via the Green Mountain Railway, a cog railroad completed in the same year. Summer guests reached the base of the mountain via a steamer across Eagle Lake, and then boarded the passenger cars that were pushed up by a 10 ton locomotive. After paying $2.50 fare, and a half hour travel time, visitors arrived at the summit—almost 3,000 in the first year. Both of these ventures did not last long, as the Summit House was razed in 1896 (the first one burned in 1884) and bankruptcy claimed the cog railway by 1889.

Today, Cadillac's visitation has grown exponentially, hosting many more visitors than other park summits. It is a well-worn mountain, in need of strong resource protection from those who love the mountain the most. Once on the mountain top, visitors are drawn by the scenery surrounding them, leaving the trail as they take in one view after another. The seemingly tough vegetation underfoot is often ignored, but attention must be paid as these plants may be more vulnerable than suspected. Summer offers recuperation from the harshness of winter on the exposed summit, but with high visitation, serious damage to these plant communities happens by the constant trampling of off-trail use. This leads to a higher rate of erosion removing more soil and thus adding more stress.

Research studies conducted on Cadillac, as well as on Pemetic and Sargent Mountains clearly show the damage done to these pockets of vegetation. Many of Acadia's mountain species at the edge of their geographical range could serve as important indicator species in examining the possibilities of global climate change, or to study their genetic diversity. Remaining on the trail is critical, and if one must go off the trail, one should choose a path over bare exposed rock rather than through plants or gravelly soil.

Three plant communities identified by their dominant species are on the summit: 1) the crevasse community of three-leaf cinquefoil and blueberry, 2) shrub community of sheep laurel, blueberry, and huckleberry, and 3) forest mix dominated by red spruce. Some rare plant species are known to live on Cadillac.

Another management concern, clearly illustrated from the summit of Cadillac, is poor air quality. Despite Acadia's federal listing as a Class I protected area (it is required by law to have the cleanest air in the country) healthful air quality standards sometimes fall short. At times, the view toward Blue Hill from Cadillac Mountain is almost obscured. Particulate matter causes the distant mountain to fade from sight. These episodes often correspond with unsafe measurements of ground level ozone, a possible threat to both park vegetation and human health. Ozone is created by a chemical reaction between sunlight and nitrogen oxides, a by-product of burning fossil fuels. Acadia, although not a major source of these nitrogen oxides, is a recipient of air currents from urban centers like Boston and New York that skirt the down east

coast. During the summer, the ozone levels can be higher than at other times of the year because of the increase in sunlight. The result is a bath of chemicals and particulates along the Maine coast. Acadia issues alerts to let visitors know when the park has reached unhealthful levels of ground-level ozone. Park air quality resource specialists monitor Acadia's air for both acidic and mercury deposition, visibility and fine particulates, UV-B changes to track potential thinning atmospheric ozone, and effects of ground-level ozone levels and their effects on vegetation and human health. This information is part of a nationwide monitoring program.

Isle au Haut

A special use permit is required for use of the camping shelters at Duck Harbor on Isle au Haut. Maximum stay is 5 days from opening through June 15, and from September 15 through closing. From June 16 through September 14 the maximum stay is 3 days. Isle au Haut camping party size is limited to 6 persons per site. Dogs are not allowed in the campground.

Access

Remote and inaccessible to automobile traffic, Isle au Haut is linked to the mainland by a mailboat from Stonington, no auto ferry exists. For current fare and schedule information, write: Isle au Haut Ferry Company, Stonington, ME 04681, or call between 9AM and 5 PM Monday through Friday, or 9AM and 12 noon on Saturday, at (207)367-5193. Important: Year-round, the mailboat runs to the Town Landing. From mid-June through early September, the boat also goes to Duck Harbor. Park rangers encourage visitors to ride to Duck Harbor, which is located in the heart of the park area. The mailboat operates on a first-come, first-served basis. From late June through early September, boat service to Duck Harbor brings you within a quarter mile of the campground. When the boat does not run to Duck Harbor, it will leave you at the Town Landing, and you must backpack five miles to Duck Harbor Campground. Confirm boat schedule and destination with the captain.

Services

A small store and post office, both with limited hours, are located near the Town Landing. There are no private campgrounds.

Hiking

For avid hikers, there are 18 miles of trails that offer opportunities to explore rocky shoreline, wooded uplands, marshes, bogs, and a mile-long freshwater lake. Come prepared for rough and sometimes wet trails. Bring adequate footgear, warm clothing, and raingear. From late June through early September, boat service to Duck Harbor will provide the best starting point for hiking. During the summer, a park ranger will board the mailboat at the town landing to answer your questions about Isle au Haut.

Biking

Park rangers discourage biking on Isle au Haut for the following reasons: Only four miles of road are paved and appropriate for narrow-tired touring bikes. The rest of the road is very rough and suitable only for non-motorized mountain bikes. Mountain bikes cannot be used on hiking trails. The mailboat will only drop off and pick up bikes at the Town Landing.

Camping

Five lean-to shelters at Duck Harbor Campground can be used on an advance reservation basis from May 15 through October 15. (See reservation information below). The shelters have three sides, a roof, and floor, and hold up to six people each. Shelter dimensions are 8 feet tall at the center, 8 feet deep and 12.5 feet wide. A small free-standing tent may only be erected inside the lean-to. Facilities include a fire ring, a picnic table, a pit toilet, and a hand pump for water. The pump is located about 1,600 feet from the shelters, so bring a container to carry water. Dead and down wood may be gathered for campfires. There is no trash disposal. All trash must be carried out. Pets are not permitted in the campground. Check-out time is 11 am.

Reservation Information- Special Use Permit at Duck Harbor Campground
Reservation requests for a Special Use Permit must be received in person at park headquarters or must be postmarked April 1 or later. Requests delivered or postmarked before April 1 will be returned without action. Telephone requests are not accepted. There is a limit of one stay per season, per person or group. Requests should be sent to Acadia National Park, PO Box 177, Bar Harbor, ME 04609, Attention: Isle au Haut Reservations. Call (207)288-3338 to have a form sent to you, or go to the park website at **www.nps.gov/acad/planyourvisit/duckharbor.htm** to download the form. Reservations cannot be made online.

- Before completing the Reservation Request Form, contact the Isle au Haut Ferry Company, Stonington, ME 04681, call (207)367-5193, or go to their website at www.isleauhaut.com for the boat schedule to Isle au Haut. Print name, address, daytime and evening telephone number, and number of people in the space provided on the request form.
- Enter your choice of dates in the block provided. Due to high demand for campsites, you are more likely to receive a reservation confirmation if you apply for alternate dates. Indicate if you will accept less than the number of days requested. "Departure date" indicates the day you actually leave the campground.
- Regardless of how many nights you wish to camp, $25.00 must accompany each Reservation Request Form. One request form reserves one lean-to. If your group includes more than six people, you will need more than one Reservation Request Form. The maximum length of stay is three nights per group, except before June 15 and after September 15, when the maximum stay is extended to five nights. Postal money order, certified check, or personal check payable to the National Park Service is acceptable. Do not send Canadian currency. If we can accommodate your reservation request, your $25.00 Special Use Permit fee becomes non-refundable and we will send a reservation confirmation to you. There is no additional fee for camping. If we are not able to honor your reservation request, we will return your $25.00.
- When you travel to Isle au Haut, bring your Special Use Permit along; you will need to show it to the mailboat captain and the park ranger when you arrive.

Regulations

Accidents: Must be reported to the park rangers if property damage or personal injury is involved.

Hunting: Hunting and trapping are prohibited.

Firearms: Must be unloaded and cased or otherwise packed in such a way as to prevent use.

Fishing: Permitted in accordance with State of Maine law. A state license is required for freshwater fishing.

Audio Devices: The operation of any audio device which unreasonably annoys other park visitors is prohibited. Radios must be completely off between quiet hours, 10pm and 7am.

Firecrackers: The possession or use of fireworks or firecrackers is prohibited.

Disorderly Conduct/Intoxication: It is illegal to be in the park when under the influence of alcohol and/or a controlled substance. The possession of alcoholic beverages by a minor (less than 21 years old) is prohibited.
Public Property: The possession, destruction, removal, or disturbance of park property or natural resources is prohibited.

Fire Danger: Campfires are allowed only in designated campground areas. Never leave fires unattended. During periods of high fire danger, campfires in the campground and smoking on trails may be prohibited.

Pets: Must be on a leash at all times while in the park and are prohibited in the campground.

The Carroll Homestead

There are no numbered posts. The beginning of the trail starts at the bus drop-off, traveling a short distance through the woods. Where the trail enters the homestead, at the old barn site, wander around the homestead by walking around the front of the house and out toward the open ledges, then walk around the back of the house. This guide is provided to give guides an idea of what is available to their groups at this park site. To purchase the actual interpretive guide, check at park information centers.

The Carroll Homestead gives us a glimpse into the past and the rich heritage of coastal Maine. The generations of Carrolls who have lived at the "Mountain House" reflect the industrious lifestyle typical to this region. Interdependence, not isolation, dictated their daily lives.

Welcome to the Carroll Homestead

The Carroll family lived in their "Mountain House" from 1825 to 1917.Their homestead depicts a way of life that was representative of coastal Maine during this time.

1825-1870 John and Rachel: 1 son, 5 daughters

1870-1900 Jacob and Rebecca: 2 sons, 8 daughters

1900-1917 John and Viola: 4 sons, 2 daughters

Coastal homesteads were modest, living conditions were often crowded, and the work abundant. Many families supported themselves through farming, fishing and ship building. Although most people were self-employed, they maintained a close relationship with the community for their social, spiritual, and economic well-being. The Carroll family raised food, fiber, and fuel to support the household, but produced little that was taken to market. Ties to the family and the land were strong and accounted for much of their perseverance.

Timber And Rock Mounds (on trail through woods) Clearing the land of trees and rocks was back-breaking, essential work to provide an area for fields, pastures and a house site. The forest provided an abundance of timber needed for construction, cooking, and heating. The Carrolls often cut trees during the winter when logs were easily hauled on sled over frozen roads and when more help was available. "Winter is upon us and finds the seafaring population at home; the chief occupation at present is getting the year's supply of firewood." (Mount Desert Herald 1884) Rock mounds are abundant throughout the Carroll homestead. Some of the rocks were used for foundations or stone walls like the one that leads to the barn site.

Livestock (at old barn site) The quantity and variety of livestock varied depending on the family's needs. The Carroll family always kept cows. Oxen were used in the early years to clear the land. Sheep were kept for the first 67 years and provided wool for clothing. Chickens and horses were also kept at various times. Hay was harvested in several fields and around the house site and stored in the one-story barn that once stood on the property.

Home And Hearth (in front of house) The kitchen was the largest room in the house and the center of family life. "Most families had their "fire kettle" to bring coals from the neighbor's hearth in case their own fire went out. In many homes, fire on the hearth, carefully covered at night, was kept alive for years and to frequently be obliged to "borrow fire" was held to be a

sign of shiftlessness on the part of the household." (Nellie Thornton: 1933) Surely many a story was told around the warmth of a fireplace or stove on cold winter nights. The number of year-round residents in the Carroll house ranged between three and 12, with an average of six people over the 92 years. The house was enlarged in 1850. Can you locate the 15 foot addition that more than doubled the size of the house?

Off-Farm Employment (by old apple tree) Off-farm work often supplemented the income of coastal farmers, and provided money to purchase items that could not be produced on the farm. Goods or labor were also common forms of payment for services. Masonry was a mainstay of the Carroll family economy. Four of the Carroll men were masons. The men were often gone for a week or more as they worked on fine homes in Northeast Harbor or other parts of the island. John (II) Carroll received many apple tree grafts from people for whom he had done masonry work. A number of apple trees still remain on the property. Teaching was a common occupation for women. Teachers were required to move often so students could be exposed to different ideas. Teachers rarely owned property or homes and often stayed with relatives before moving on to their next assignment. Eight of the Carroll women earned a living as teachers. Mary Ann Carroll, daughter of John (I), taught school until she was almost 70 and often returned to the mountain house between terms.

The Lure Of The Sea (by ledges looking toward ocean) To the south lies Southwest Harbor and the Atlantic Ocean. The harbor was a beehive of activity where vessels unloaded their cargo and left with their holds full of granite, ice, fish, and cobblestones from Mount Desert Island. In spite of the close proximity to the ocean, only one of the Carrolls was drawn to the sea. At the age of 16, Jacob Carroll began his seafaring career which took him across the Atlantic five times and around the world once.

A Garden At The Doorstep (behind house) Small gardens called "kitchen gardens" supplied many families with pole beans, radishes, carrots, lettuce, cucumbers, and herbs. Kitchen gardens were often located a stone's throw from the house. The Carroll family kitchen garden ran the length of the house. The men were responsible for initial plowing and planting, while the women and children attended to weeding and daily care. A blueberry patch was located across from the present day gravel road. The children occasionally earned extra "pin money" by selling some of the vegetables and blueberries to nearby summer cottage residents.

Family Life (behind house) Coastal families were often large. Everyone was expected to contribute to the running of the farm and household. The younger children gathered eggs, or pulled weeds in the garden, while the older children tended to the livestock, chopped firewood or helped with the planting and the harvesting. The Carroll children also had time to enjoy fishing, playing games and exploring "Dog Mountain", (St. Sauveur), located directly behind the house. Although school was not required by law, many children were taught at home or attended school when their help was not needed at home. The Carrolls knew the value of reading and writing and saw to it that their children attended school. The church was a source of both spiritual and social activity, bringing neighbors together to share their joys and sorrows. The Carrolls rowed across the harbor to attend church in Manset until the late 1840s when church services were held within walking distance in Southwest Harbor.

Winds Of Change (northwest corner of property by large oak) By the early 1900s, modern conveniences such as electricity, telephones and indoor plumbing in the towns drew many Maine families off their homesteads. Better paying jobs were also available in town. The

Carroll family moved to Southwest Harbor in 1917, probably because of the convenience of nearby schools and services. By this time John's (II) masonry business was also well established in town. The Carroll Homestead remained in family ownership after their move to Southwest Harbor. The family continued to harvest hay and timber from the property and to gather here for special occasions. In 1925 the family celebrated the 100th anniversary of John and Rachel's first Thanksgiving dinner in the house, complete with goose and plum pudding! From 1934 to 1953 the house was leased to summer residents. In 1982 the Carroll homestead, comprising 40.5 acres, was transferred to Acadia National Park.

Sieur de Monts Interpretive Guide

The following is only the text for the interpretive guide. There are no numbered posts. It is provided to give guides an idea of what is available to their groups.

Welcome to Sieur de Monts Spring

Nature shaped the valley. Glaciers carved it out, leaving Dorr Mountain and Huguenot Head to tower above. A fire swept through here in 1947, forcing the spruce-fir forest to surrender to maples, birches, and aspens. Wetlands at both ends of the valley—the Tarn to the south and Great Meadow to the north-replenish or dry, at the mercy of snowmelt, rain, and beaver dams. People shaped this valley. The human presence can be traced back to American Indians, early European settlers, and those who came to enjoy the natural beauty of Mount Desert Island. Sieur de Monts Spring chronicles not only natural events of the long distant past, but the story of people who strove to preserve it as part of a great national park. Follow the paved path to the wooden bridge.

Explorers, Settlers and Founders

When the French explorer, Sieur de Monts, sailed along these shores in 1604, this spring area lay in the shadows of the unknown, untouched and unseen by Europeans. The spring was probably known to American Indians who visited it, while passing through the gorge between Huguenot Head and Dorr Mountain, on their way to Otter Creek. Sieur de Monts' navigator, Samuel Champlain, charted the coast, including this island, which he named l'Isle des Monts Desert—Island of Barren Mountains. The island, with its prominent headlands and peaks, became an unmistakable landmark for mariners, and part of the prize in the war between the French and British. George B. Dorr, a park founder and its first superintendent (1916-1944), was fascinated by the island's French history. When he acquired the land around this spring, he named it in honor of the man who sought to open the New World to French settlement and establish "New France" in North America. From the bridge, follow the gravel path to the domed spring house.

Sweet Waters of Acadia

The British battled the French for dominance in the New World, and won. By the American Revolutionary War, Maine was still sparsely settled. Islanders subsisted on what they could harvest from sandy, rocky soil and the sea. Land once known only to American Indians was divided into homesteads and its forests harvested. The land around the spring was once farm land. In the early 1900s, two enterprising islanders planned to open a commercial spring water business here. Their scheme failed and George B. Dorr purchased the spring in 1909. Dorr placed the Florentine-style canopy over the spring "with openings upon the sides protected to a man's height and over with plates of purest glass, so that all who wished might look in." He carved Sweet Waters of Acadia on a boulder "in memory of two spring fountains I had once visited…built by the Greeks {sic} and named "The Sweet Waters of Europe and The Sweet Waters of Asia." To the right of the spring and boulder is a wooden post that marks the Dorr Mountain trails. Walk over to it.

Stone Steps To The Summit

Early settlers and visitors recorded following "Indian paths" on many parts of the island. Islanders added to this network as needed. By the late 1800s and early 1900s, visitors and summer residents, like George B. Dorr, great walkers all, desired trails that went beyond mere

utility. Village Improvement Societies oversaw the construction of new trails that blended harmoniously with the landscape and delivered the hiker to beautiful scenery. Often times, trail builders used granite found along trail routes to build unobtrusive but solid trails. Stone stepped trails characterize the pathways to Dorr Mountain's summit. Trails with stairways, builders believed, allowed hikers of every ability to enjoy steep, or otherwise impassible mountainsides. Follow the Emery Path a short way to a second trail sign. It is not very far and involves only a couple of stone steps. If you prefer, remain where you are.

Memorial Paths

This is the East Face Trail, originally called the Emery Path. Sponsors were sought to fund trail construction. Sponsors could name a trail in memory of the person of their choice. Such trails were known as memorial paths. Mrs. John Anson, a summer resident, commissioned this trail in memory of her late husband, John Emery. This mountain was once called Dry Mountain. George B. Dorr changed it to Flying Squadron Mountain in honor of World War I French flyers. It was again renamed following George B. Dorr's death, honoring him for his efforts to create Acadia National Park. It is a fitting tribute to the man who directed much of the trail work on this mountain, and donated the land comprising Sieur de Monts Spring to the National Park Service.

You may follow the Jesup Path to the left. The walk is easy. When you rejoin the paved path, bear right and follow it to The Robert Abbe Museum. If you did not follow the trail to the intersection, follow the paved path up to the museum.

The Robert Abbe Musuem: One Man's Inspiration

Robert Abbe was a New York surgeon who helped pioneer the use of radium. In 1922 he discovered a new pastime as an amateur archeologist. In Bar Harbor, a window display of ancient stone tools drew him inside for a closer look. The tools and their history fired his imagination. The Right Reverend William Lawrence wrote of that moment:"These very stones that he was handling had been in the hands of men who lived and fished along these shores, climbed these mountains, and brought up families before history began. These stones were their tools…" Dr.Abbe's purchase of this collection led to others and laid the foundation for Maine's first archeological museum exhibiting artifacts of pre-historic and historic American Indian cultures. He raised funds to build a museum at Sieur de Monts Spring which he intended to be a small trailside museum. Dr.Abbe wrote: "My aim has been to create a permanent 'one show' historic incident in the path of the 'Madding Crowd' and to make it as perfect as possible." Dr.Abbe never saw the completion of his museum. He died in 1928, five months before it opened. However, his legacy has led to professional archeological research in coastal Maine that continues today, and to exhibits that help us understand those whose footsteps we follow. Enjoy the Abbe Musuem (a small fee is charged) or follow the paved path back down toward the spring. A short trail branches to the right to a stream and small pool of water. Follow the stepping stones down to the water.

A Changing Scene

Sieur de Monts Spring little resembles what American Indians knew prior to European settlement. George B. Dorr described how he landscaped Sieur de Monts Spring in 1909:"Freeing it from a concealing cover of sphagnum moss and fallen leaves…I shaped the sloping ground about it into a shell-like concave basin, deeply draining it…" He piped the flow

of water to this artificial pool, allowing people access to the water. The water does not possess any special mineral properties and is not recommended for drinking. Styles of landscaping and attitudes toward natural areas change through the years. George B. Dorr's design of Sieur de Monts Spring reflected a different era and different ideas about "nature parks." Because of Dorr's contributions to Acadia National Park, Sieur de Monts Spring is preserved as an area of cultural significance within a natural area.

Retrace your steps to the main path. Cross the first bridge on your right, bear left, then right to the Nature Center. To the right, framed by shrubbery, is a monument to George B. Dorr