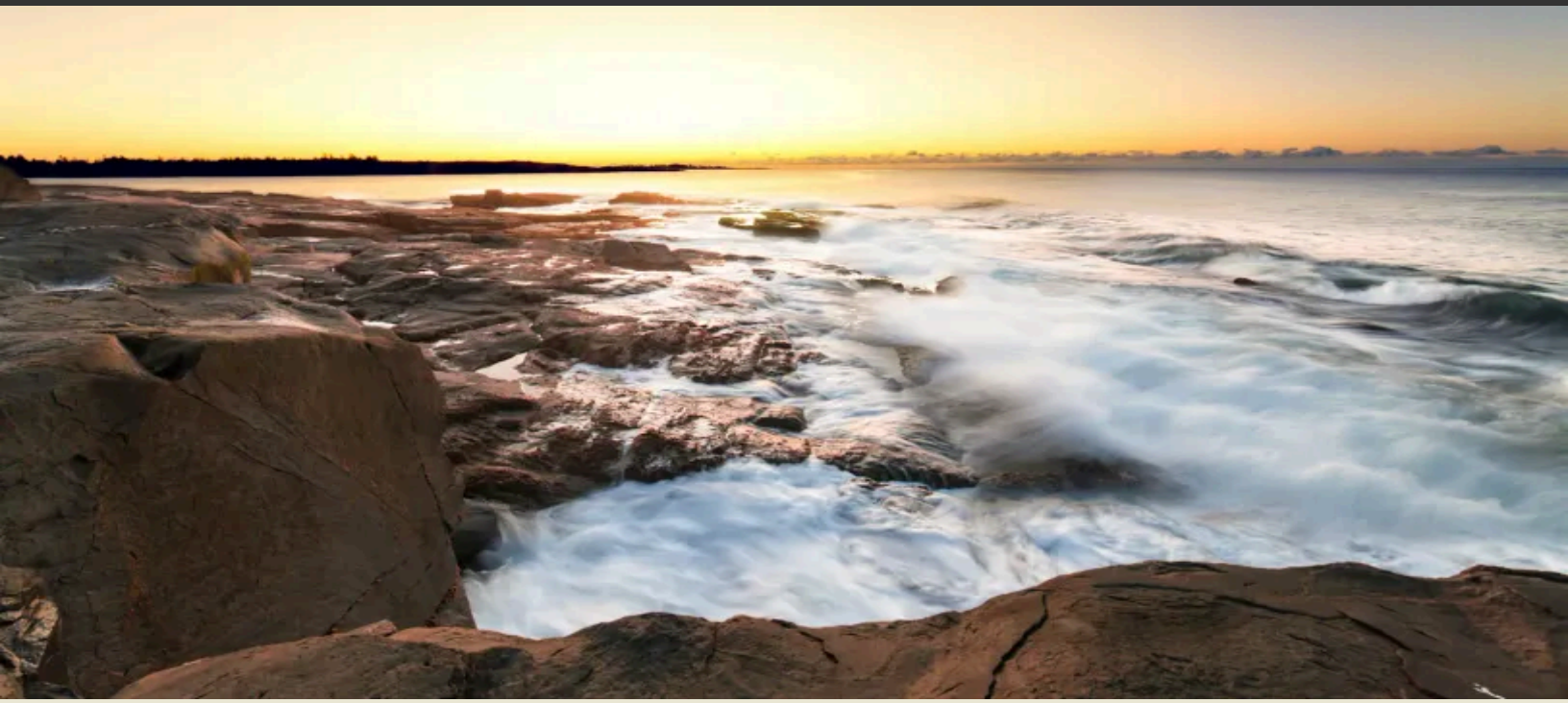
earthwatch expeditions
by Nat Hab

Explore with Purpose



Measuring Climate Change in Acadia National Park

In coastal Maine, survey tide pools and record bird migrations in forests, to help scientists assist park managers in protecting Acadia's ecosystems

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Millions of visitors come to Acadia for its granite peaks, Atlantic vistas and the coastal charm of Bar Harbor. Few gain access to this version of the park. Join researchers at active field sites on the Schoodic Peninsula and in protected habitats rarely experienced by the public. Search spruce forests for lobster shells carried inland by foxes and mink. Examine wildlife camera images to see what moves through the woods after dark. Visit rare plant communities that may help species persist as temperatures rise, and explore rugged shorelines where waves, fog and salt shape life at the edge of the continent. Between fieldwork, watch sunrise from Cadillac Mountain, wander fog-shrouded headlands and cruise Maine's rocky coast in search of puffins and seabirds. Together, these experiences reveal a side of Acadia that exists beyond its famous trails and viewpoints—best known by the scientists studying it.

Research at a Glance

Your Role in Research

The Research Focus

Investigate how climate change is transforming Acadia's connected coastal ecosystems, from the rocky shores of the Gulf of Maine to the spruce forests and mountaintop habitats beyond.

What You'll Do

Search for lobster shells, crab claws and other marine prey carried inland by wildlife, monitor rare northern plants and help document species living in forest and coastal habitats.

Why It Matters

The Gulf of Maine is warming faster than nearly every ocean region on Earth. Your observations help reveal which species are adapting, which are declining and where protection matters most.

Trip Highlights

Venture beyond popular overlooks to secluded shorelines, remote spruce forests and active monitoring areas that reveal the park's less-visited side.

Watch the sun rise over Cadillac Mountain, cruise past puffin nesting islands and explore wave-carved headlands where fog, granite and open ocean epitomize coastal Maine.

Search for lobster shells, crab claws and sea urchin remains carried inland by foxes, mink and crows, revealing connections between ocean creatures and coastal forests.

Measuring Climate Change in Acadia National Park Itinerary

In coastal Maine, survey tide pools and record bird migrations in forests, to help scientists assist park managers in protecting Acadia's ecosystems

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Accommodation Details:

Residence Inn by Marriott Bangor

Rockefeller Hall Accommodations

For detailed descriptions, visit nathab.com/earthwatch-expeditions/acadia-national-park-climate-science-trip/accommodations

Measuring Climate Change in Acadia National Park Accommodations

In coastal Maine, survey tide pools and record bird migrations in forests, to help scientists assist park managers in protecting Acadia's ecosystems

Residence Inn by Marriott Bangor

Conveniently situated for the start of our Maine adventure, the Residence Inn features spacious suites in an ideal downtown location that's just a short drive from the airport.

Rockefeller Hall Accommodations

Meet the Scientists

Ph.D. Hannah Webber

Marine Ecology Director, Schoodic Institute at Acadia National Park

Dr. Hannah Webber is the marine ecology director at Schoodic Institute at Acadia National Park, where she studies how coastal ecosystems respond to environmental change. A Maine native, she earned her Ph.D. in Ecology and Environmental Sciences from the University of Maine, where her research focused on the resilience of intertidal ecosystems following seaweed harvest.

Her work centers on understanding how species interact within dynamic coastal systems and how those relationships shift under pressure from climate change and human use. By studying intertidal habitats, she examines how organisms—from seaweeds to invertebrates—respond to disturbance and what that means for ecosystem function along the coast.

Her research supports sustainable coastal management, helping to balance human use with the protection of ecological systems. By identifying how resilient these ecosystems are to change, her work helps inform how coastal environments can be used without compromising their long-term health.

Through this work, she helps build a deeper understanding of how coastal ecosystems function, providing the knowledge needed to protect these environments in a changing world.

Education

Ph.D. in Ecology and Environmental Sciences, University of Maine
M.S. in Zoology, University of Maine
B.A. in Biological Sciences, Mount Holyoke College

Supporting Scientists

Ph.D. Abraham Miller-Rushing

National Park Service, Acadia National Park

Climate Change Ecology, Acadia

Science & Impact

For more than a century, Acadia National Park has provided scientists with a valuable window into ecological change. Researchers here are investigating how climate change is altering connections between the Gulf of Maine, coastal forests and vulnerable plant communities. Through long-term monitoring, wildlife surveys and habitat assessments, this research is helping scientists understand how ecosystems respond to change and identify habitats that may help protect biodiversity in the future.

Research Focus

Climate change affects more than individual species. It can alter the relationships that connect entire ecosystems, changing how wildlife move across the landscape, where species can survive and how energy and nutrients flow through natural communities. This project has two complementary focus areas. Together, these projects help scientists identify which ecological connections remain strong, which habitats may become increasingly important for conservation and how Acadia's ecosystems are responding to a changing climate:

- One concentrates on the connections between the Gulf of Maine and Acadia's coastal forests, looking at how marine prey—including mussels, crabs, sea urchins and lobsters—are transported inland by wildlife such as red foxes, mink, river otters and corvids. By documenting these movements, researchers can better understand how ocean resources influence forest ecosystems and how those relationships may change in the future.

- The other investigates climate refugia—areas that remain cooler than the surrounding landscape and may help vulnerable species persist as temperatures rise. Researchers monitor rare northern and arctic-alpine plants in permanent plots throughout Acadia to evaluate whether these habitats provide meaningful protection from climate-related change.

Conservation Impact

Acadia's forests, coastlines and mountain habitats are deeply interconnected. This research program is helping scientists understand how those connections are changing and which species and habitats may be most vulnerable—or most resilient—in the future.

Research has already revealed:

- Evidence that marine prey such as mussels, crabs, sea urchins and lobsters are transported far inland by wildlife, linking the Gulf of Maine with Acadia's coastal forests

- Hundreds of wildlife-camera observations that help identify species moving marine resources across the landscape

- New data on rare northern and arctic-alpine plants that may depend on cooler habitats for long-term survival

- Long-term records that help scientists evaluate whether climate refugia can protect vulnerable species as temperatures rise

Research findings are being used to:

- Understand how marine and terrestrial ecosystems remain connected
- Monitor biodiversity across changing coastal habitats
- Identify and evaluate potential climate refugia
- Test predictive models used in conservation planning
- Inform restoration efforts on mountain summits and other sensitive landscapes
- Support biodiversity monitoring before and after habitat restoration projects
- Guide climate adaptation and resource-management decisions throughout Acadia National Park

Together, this work is helping scientists understand how climate change is affecting Acadia from sea to summit and providing information that supports future conservation and management decisions.

Your Role in the Research

As a participant, you become part of an ongoing scientific effort to understand how climate change is influencing Acadia National Park. The observations you collect contribute to long-term monitoring projects that extend far beyond a single field season. Whether documenting marine prey in coastal forests, helping identify wildlife captured on camera or monitoring rare plant populations, your work supports datasets that scientists use to track ecological change over time. In 2024 alone, Earthwatch travelers contributed more than 6,200 hours of research and training, helping scientists collect data that would otherwise be difficult to gather at this scale.

Life in the Field

Research takes place in coastal forests, rocky shorelines, mountain summits and coastal barrens. Approximately half of the mornings focus on Earthwatch research activities, while the remainder begin with recreational excursions that offer opportunities to experience Acadia's landscapes, wildlife and local history. Lunch is often enjoyed outdoors near research sites before an afternoon of continued fieldwork, data collection or presentations from scientists involved in the project. Evenings alternate between meals at Schoodic Institute and visits to local restaurants. After dinner, guests can relax on campus, explore the shoreline or take advantage of the Schoodic Peninsula's exceptional dark skies for stargazing.

Field Conditions

Research takes place across a remarkable range of coastal habitats, from spruce-fir forests and rocky shorelines to windswept mountaintops and coastal barrens. Depending on the day's project, participants may work in permanent forest monitoring plots, explore wave-washed intertidal zones, survey vegetation on exposed summits or visit remote coastal sites along the Schoodic Peninsula. Terrain is often uneven and can include roots, rocks, dense vegetation, wet ground and exposed bedrock. Along the coast, conditions are influenced by tides, wind and weather, while mountain and shoreline environments can feel significantly cooler than inland areas. Summer weather in Maine is highly variable. Participants should be prepared for sunshine, fog, wind, rain and rapidly changing conditions, sometimes all within the same day.

Discovery in the Field

1 Encounter a Remarkable Diversity of Wildlife

Few places pack so much wildlife into such a compact landscape. Scan offshore waters for puffins and seabirds, look for seals along the rocky coast and explore forests traveled by river otters, mink and foxes. Set along a major migratory corridor, Acadia also hosts an impressive variety of songbirds, including 23 species of warblers recorded within the park.

2 Awaken Inside Acadia's Living Laboratory

Stay at Schoodic Institute, Acadia National Park's primary science partner, where daily life includes field briefings, conversations with researchers and access unavailable to ordinary visitors.

3 Add Your Observations to 120 Years of Discovery

Help build on more than a century of ecological records, contributing observations that allow scientists to track how Acadia's forests, wildlife and coastlines are changing over time.

4 Learn About Coastal Maine's Rich History

Look beyond Acadia's scenery to understand the human stories woven into the landscape. Learn about Wabanaki history at the Abbe Museum, gain insight into Maine's fishing heritage during a working lobster boat experience or puffin cruise, and discover the communities that continue to shape life along this remarkable coastline.

5 Balance Research With Adventure

The science is only part of the story. Watch sunrise from Cadillac Mountain, cruise beneath puffin nesting islands, explore the dramatic granite coast of Schoodic Peninsula and spend evenings beneath star-filled skies after days of discovery in the field.

6 Investigate Acadia's Living Shoreline

Explore the rocky intertidal zone, where changing tides reveal a world of seaweeds, invertebrates and wildlife that scientists monitor for signs of environmental change.

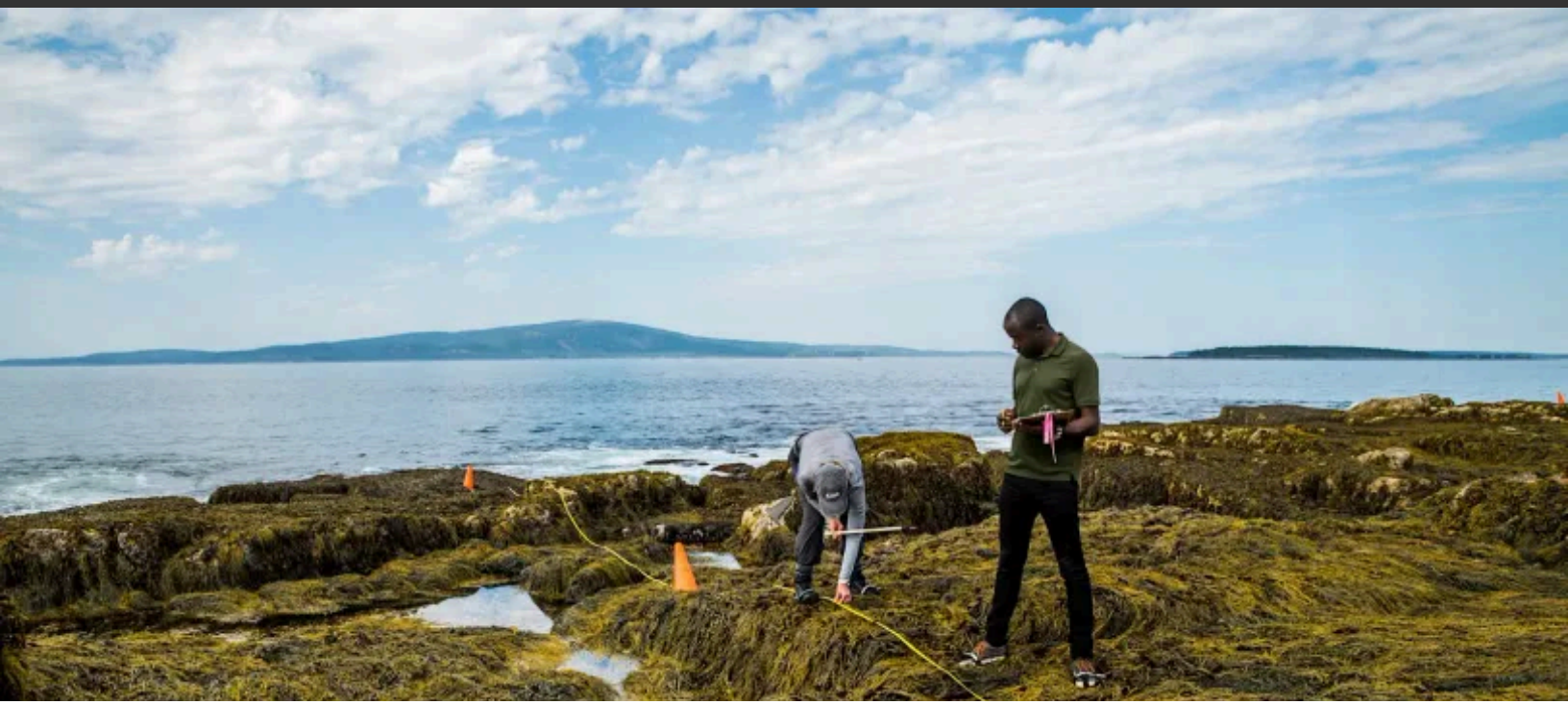
7 Gain Insight From Our Expert Field Guides

Travel with experienced naturalist guides who bring deep knowledge of Maine's natural history, helping you connect your daily fieldwork experiences to the larger picture of climate change impacting the region.

Explore with Purpose

8 **Travel With an Intentionally Small Group**
Because we limit the group size on our expeditions, each participant is ensured closer interaction with scientists and a more active role in daily research activities.

9 **Explore with Purpose**
Learn how scientists and park managers use the research in which you're participating to identify invasive species, monitor biodiversity and make decisions about protecting Acadia's ecosystems for the future.



Dates & Pricing Summary:

Group Size: Limited to Travelers

Measuring Climate Change in Acadia National Park Dates, Pricing & Info

In coastal Maine, survey tide pools and record bird migrations in forests, to help scientists assist park managers in protecting Acadia's ecosystems

Pricing

See https://nathab.com/earthwatch-expeditions/acadia-national-park-climate-science-trip/dates-fees for the latest pricing details.

Included

Trip price includes: Accommodations, services of our professional local Field Guides and additional local guides and lodge staff, all meals from dinner on Day 1 through breakfast on final day, some alcoholic beverages, some gratuities, private transfers throughout the itinerary (including 1 private boat trip), airport transfers on Day 1 and final day, all activities and entrance fees, all taxes, permits and service fees.

Not Included

Travel to and from the start and end point of your trip, some alcoholic beverages, some gratuities, passport and visa fees (if any), optional activities, items of a personal nature (phone calls, laundry, etc.), airline baggage fees, airport and departure taxes (if any), required medical evacuation insurance, optional travel protection insurance.

Important Information About This Trip

Conditions & Environment

- Be comfortable outdoors for extended periods in heat, sun, wind or rain. Research activities will take place rain or shine
- Expect the potential presence of insects and other wild animals during outdoor research and recreational activities.
- Be prepared for limited access to restrooms while in the field

Additional Considerations

- Basic comfort with remote travel conditions and a flexible mindset are important
- Ability to follow safety instructions and communicate clearly with staff is essential
- Guests should be comfortable engaging with different cultures and working closely in a small group setting

Mandatory Insurance

Because this expedition operates in remote field locations, all guests are required to carry medical evacuation insurance with a **minimum of $250,000** in coverage.

We also strongly recommend comprehensive travel insurance to protect against unexpected disruptions such as cancellations, delays or lost baggage. Please contact our office for details on available coverage options.

Getting There & Getting Home

This trip begins and ends in Bangor, Maine. **You must arrive in Bangor by 4:30pm on Day 1** in order to make it to the hotel in time for a 7pm welcome dinner. For guests who come in early, recommended hotels will be included in your pre-departure materials.

You may depart Bangor, Maine any time after 12pm on the final day.

Our Earthwatch Expeditions Travel Desk can best assist with your travel reservations, as our staff is familiar with the specific requirements of this program and can help arrange the most efficient itinerary. Please call us at 800-548-7555. While we offer the best available rates to us on airfare and additional nights accommodations, you may occasionally find special web rates or lower fares online.

Know Before You Go

Whether you're preparing for your upcoming expedition or simply want to learn more about Acadia National Park, these resources offer a deeper look at the wildlife, habitats and research that make this landscape so special. Explore Acadia's coastal ecosystems, learn how climate change is affecting forests and shorelines and discover how scientists are working to protect biodiversity in a changing world.

Why Is Acadia One of the Best Places in the World to Study Climate Change in Coastal Ecosystems?

In Acadia National Park, fog drifts across spruce-covered headlands while Atlantic waves crash against granite shores. Here, along one of the fastest-warming marine regions on Earth, scientists are tracking how climate change is reshaping coastal forests, wildlife populations and the interconnected ecosystems that link ocean and land.

The Gulf of Maine is warming faster than nearly every ocean region on Earth, creating measurable changes throughout Acadia's forests, shorelines and mountain habitats. Researchers are investigating how wildlife moves resources between ecosystems, where climate-sensitive plants may find refuge and which habitats are most likely to support biodiversity in the future.

This combination of dramatic coastal landscapes, long-term ecological monitoring and active conservation research makes Acadia a meaningful place for participants to contribute to science while helping researchers understand how ecosystems respond to a changing climate.

Quick Facts: Measuring Climate Change in Acadia National Park

Location: Acadia National Park, Maine
Research partner: Schoodic Institute at Acadia National Park
Key activity: Ecological monitoring and habitat surveys
Conservation focus: Climate adaptation, ecosystem resilience and biodiversity conservation

What Wildlife Will I See on a Climate Change Expedition in Acadia?

Acadia sits at the meeting point of ocean, forest and mountain ecosystems, creating habitat for a remarkable diversity of wildlife. While the expedition focuses on ecological monitoring and climate research, participants may encounter a variety of species that help tell the story of how Acadia's ecosystems are changing.

- **Atlantic puffins** nesting on offshore islands during July departures

- **Harbor seals** hauled out along rocky coastlines and offshore ledges
- **Gulls, cormorants and other seabirds** that forage in the Gulf of Maine
- **Mussels, crabs, sea urchins and other intertidal species** found in Acadia's rocky shoreline habitats
- **Red foxes, mink and river otters** that move between coastal forests and the shoreline
- **Warblers and other migratory songbirds** that travel through Acadia along the Atlantic Flyway
- **Crows and other corvids** that transport marine prey inland and help connect ocean and forest ecosystems
- **Spruce-fir forest birds** such as chickadees, thrushes and vireos that inhabit Acadia's coastal woodlands

Acadia lies along a major migratory corridor and supports an exceptional diversity of wildlife within a relatively compact landscape. The connections between these species and their habitats are a central focus of the research conducted throughout the expedition.

What Is the Climate Like During This Expedition?

Summer in coastal Maine is generally mild, though conditions can change quickly due to the influence of the Atlantic Ocean. Participants should be prepared for sunshine, fog, wind, rain and rapidly changing weather throughout the week.

Condition	What to Expect
Daytime Temperatures	60–80°F
Nighttime Temperatures	50–65°F
Rainfall	Periodic rain showers possible throughout the season
Fog	Common along the coast
Wind	Frequent near shorelines and exposed summits
Seasonal Notes	Conditions can vary significantly between coastal, forest and mountaintop habitats

Mountain summits and exposed shorelines often feel cooler than inland areas, particularly during windy or foggy conditions.

Frequently Asked Questions

Do I need research experience?

No prior research experience is required. Scientists and field staff provide training and guidance in ecological monitoring, species identification and data collection methods used throughout the expedition.

What type of research will I assist with?

Participants assist scientists studying climate change impacts on Acadia's coastal ecosystems. Activities may include monitoring rare northern and arctic-alpine plants, documenting marine prey transported into forests by wildlife, reviewing wildlife-camera images and collecting habitat data used to identify potential climate refugia.

What is the conservation impact of this research?

This expedition supports long-term research investigating how climate change affects Acadia's interconnected ecosystems. Data collected by participants helps scientists identify climate refugia, monitor biodiversity and better understand how coastal forests, wildlife and marine ecosystems are responding to environmental change.

How physically demanding is the expedition?

Participants should be comfortable walking on uneven terrain that may include forest trails, rocky shorelines, exposed bedrock, roots and dense vegetation. Fieldwork may involve several hours outdoors in variable weather conditions while conducting surveys and monitoring activities.

Can weather affect research activities?

Yes. Weather conditions, tides and research priorities can affect daily schedules and fieldwork plans. Researchers regularly adapt activities to maximize safety and scientific opportunities.

What happens in case of an emergency?

Participant safety is a priority on all expeditions. Field staff follow established safety procedures and maintain communication during field activities. If medical care is required, staff coordinate transportation to the nearest appropriate medical facility.

Do I need travel insurance?

Travel insurance is strongly recommended and should include coverage for trip cancellation, interruption, medical expenses and emergency evacuation. Earthwatch provides travel medical insurance for participants.

What immunizations & travel vaccinations do I need?

Participants should consult a healthcare provider before travel and ensure routine vaccinations are up to date before visiting Maine. Participants should also prepare for extended outdoor activity in coastal environments.

What should I bring?

Participants receive a detailed packing list before departure outlining recommended clothing, field gear and personal supplies. Essential items include sturdy walking shoes, layered clothing, rain gear and gear appropriate for outdoor fieldwork in variable coastal weather.

What Should I Pack for a Climate Change Expedition in Acadia?

Participants should pack for changing coastal conditions, active days outdoors and fieldwork across forests, shorelines and mountain habitats. Layering is important, as temperatures can vary considerably throughout the day.

Recommended items include:

- Comfortable hiking shoes or trail shoes
- Lightweight field clothing

- Long pants
- Fleece or lightweight insulating layer
- Waterproof rain jacket
- Hat and sunglasses
- Sunscreen
- Refillable water bottle
- Small daypack
- Binoculars
- Camera or smartphone
- Insect repellent

Because weather in Acadia can shift quickly, reliable rain gear and layered clothing are among the most important items to bring.

What Will I Experience on Measuring Climate Change in Acadia National Park?

Participants assist scientists studying how climate change affects Acadia's forests, coastlines and wildlife. Fieldwork may include monitoring rare plant communities, documenting wildlife activity, reviewing camera-trap images and searching for evidence of marine prey transported inland by animals such as foxes, mink and river otters.

Beyond the research, participants experience some of Acadia's most memorable landscapes and cultural sites, including Cadillac Mountain, the Schoodic Peninsula, the Gulf of Maine and the Abbe Museum. Wildlife cruises, working waterfront experiences and time spent at Schoodic Institute help connect the science to the broader story of coastal Maine.

What Does Daily Fieldwork Look Like?

Fieldwork takes place across a variety of habitats, including coastal forests, rocky shorelines, mountain summits and long-term monitoring sites. Participants may help document plant communities, measure habitat conditions, identify wildlife captured on camera traps and record observations used in ongoing ecological studies.

Research activities vary from day to day and are shaped by weather, tides and scientific priorities. Some days focus on understanding how wildlife connects ocean and forest ecosystems, while others explore climate refugia that may help vulnerable species persist as temperatures continue to rise. Throughout the expedition, participants work alongside researchers to better understand how climate change is affecting Acadia from sea to summit.

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