

too, local Indians appear to have forgotten the pits and who had made them. A few artifacts—arrowheads, knives, cedar shovels, and fragments of pottery—have been found, suggesting that these miners were the ancestors of present Algonquian and Siouan tribes. Artifacts fashioned in native copper from the Lake Superior shores, including Isle Royale, have been found from the Southeast to the Great Plains, giving evidence of the active trade carried on by these early people.

MODERN MAN

Isolated as Isle Royale appears even today, it has been known and visited since early in American history. French explorers knew Lake Superior shores by the time the Pilgrims landed on New England's rocky coast. The French took possession of the island in 1669 as part of the Canadian territory, naming it Isle Royale in honor of King Louis XIV.

Fur trading lured the French to this area. They found the Grand Portage route, which, leaving Lake Superior, follows the present border-lakes country of northern Minnesota to the broad Northwest. Under the British, Grand Portage became a great fur-trading center, rivaled only by the Hudson Bay entrance to the north country. The beginning of this great carrying place is present-day Grand Portage, Minn. Just 20 miles west of Isle Royale, it is one of the National Monuments administered by the National Park Service.

The American Fur Company operated at Grand Portage after United States occupancy, trading in fish as well as furs. In the early 1800's this company established fisheries on Isle Royale at Washington Harbor, Siskiwit Bay, and Belle Isle. The first American ship built on Lake Superior, the *John Jacob Astor*, was launched in 1835 at Sault Sainte Marie to serve the fisheries and fur trade.

Isle Royale was Indian territory until 1843 when, by treaty with the Chippewas, it was ceded to the United States. Prospectors stampeded to the island and started many mining ventures. Some notable pieces of copper were found. Among them was a mass weighing 5,720 pounds, which was exhibited at the Philadelphia Centennial Exhibition in 1876. Mineral explorations continued until 1899, when the last mine was abandoned. The ruins of these mining ventures are in evidence at several places on Isle Royale. While the copper available had been adequate for the ancient Indians, it was not found in sufficient concentration for modern industrial needs.

Twentieth-century visitors realized Isle Royale's prime value as a wilderness retreat. The movement to preserve it resulted in establishment of Isle Royale National Park on April 3, 1940.

OTHER PUBLICATIONS

For sale at the park are a number of publications of interest. A list is available from the Isle Royale Natural History Association, Isle Royale National Park, Houghton, Mich.

A map of Isle Royale is available from the Geological Survey, U.S. Department of the Interior, Washington, D.C., 20240. There are two editions: The forest-areas-in-green edition and the shaded relief edition. The price is \$1.50 per copy. These are sold in the park during the visitor season at ranger and information stations, but cannot be sold by mail from the park at any time. For the Lake Survey Chart of Isle Royale waters, send \$1 to U.S. Lake Survey, 630 Federal Bldg., Detroit, Mich.

PRESERVATION OF THE PARK

Park regulations are designed to protect the natural beauty of the park and to aid you in enjoying it. The following synopsis is for your guidance.

Fire—the park's greatest peril. Kindle fires only in designated campgrounds and never on roots of trees or near deadwood, moss, dry leaves, or mold. Campfires are not to be left unattended. Before leaving your fire, extinguish it to the last spark. During periods of high fire danger the superintendent may prohibit the kindling of fires.

Keep the park clean. Whenever possible burn garbage in your campfire. Place residue in containers where provided; where there are no collection points, as in the back country, pack out all non-combustibles. Do not dump refuse near docks or in lakes and streams. *Lake Superior is the source of the drinking water supply for the park.*

Trees, flowers, animals, natural features. Destruction, injury, or disturbance of trees, flowers, birds, or other animals is prohibited. However, fallen dead trees may be used for firewood, unless fuel is available from other sources. Removal of artifacts, geological specimens, beachstones, plants, trees, or flowers is prohibited.

Pets are allowed in the park if under physical restraint at all times, but are not permitted aboard commercial boats sailing to Isle Royale.

Registration. All parties traveling in their own boats, or camping, are requested, *upon arrival*, to register at park headquarters on Mott Island, or at any ranger station.

Firearms. Unless adequately sealed, cased, or broken down to prevent their use, firearms are prohibited in the park, except upon written permission from the superintendent.

Boats. U.S. Coast Guard and National Park Service regulations govern use of boats operating in waters of Isle Royale National Park.

Aircraft are prohibited from landing on park waters except at Mott Island, Tobin Harbor, and Washington Harbor.

Customs offices are at Rock Harbor, Mott Island, and Windigo. All boats and planes returning from Canada should check in immediately at one of these stations.

ADMINISTRATION

Isle Royale National Park, comprising more than 800 square miles, is administered by the National Park Service, U.S. Department of the Interior.

The National Park System, of which this park is a unit, is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people.

A superintendent, whose address is Houghton, Mich., is in immediate charge of the park. Mainland headquarters for the park are at Houghton. From May 1 to November 1, headquarters are on Mott Island.

Park rangers, the protective force of the park, are on duty to enforce park regulations, and to help and advise you. Ranger stations are at Mott Island, Windigo, Amygdaloid Island, Malone Bay, and Rock Harbor Lodge. You are also welcome to visit the fire-lookout towers shown on the map.

Park naturalists, who are the interpreters of the park, are at Rock Harbor, Windigo, and Mott Island.

THE DEPARTMENT OF THE INTERIOR—the Nation's principal natural resource agency—bears a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum benefits, and that all resources contribute to the progress and prosperity of the United States . . . now and in the future.



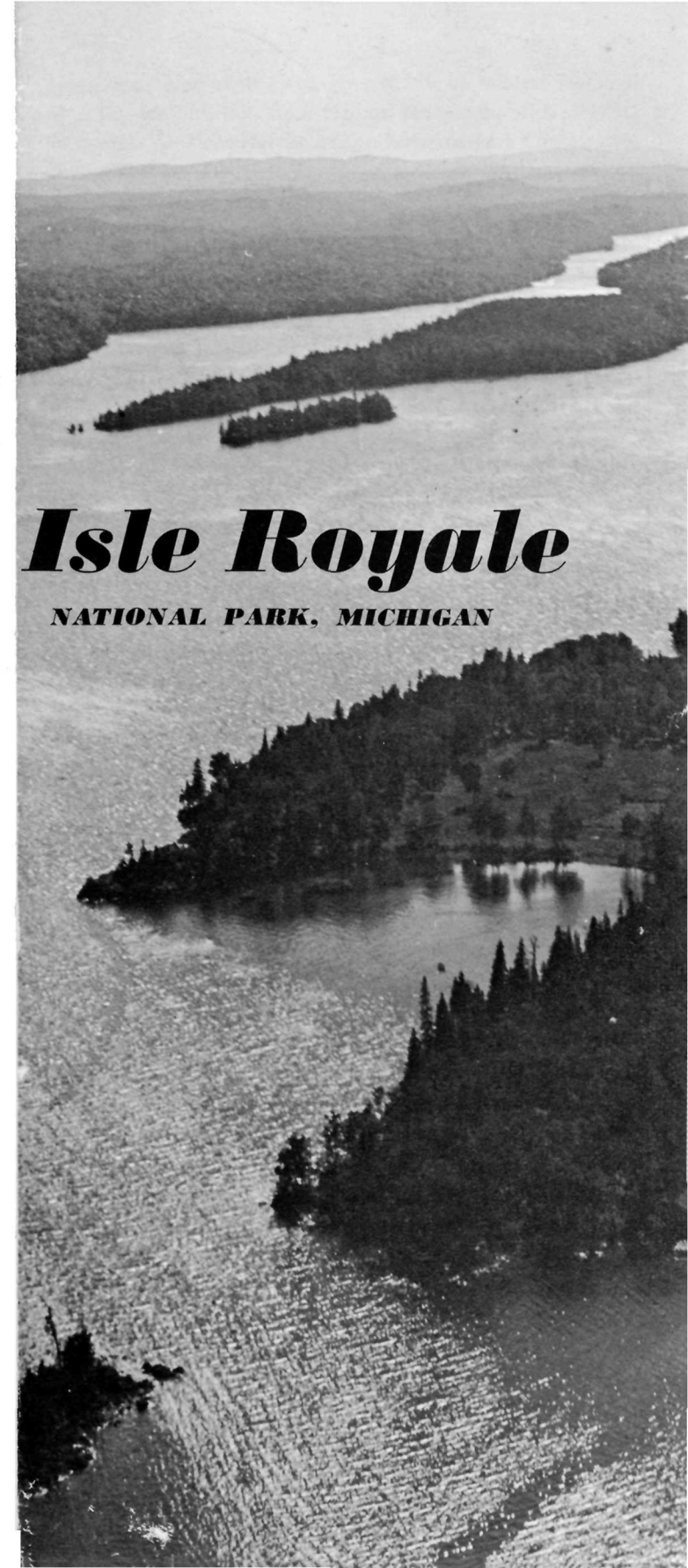
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



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Isle Royale

NATIONAL PARK, MICHIGAN

Enchantment is here: Nature in all her moods of peace and violence, an island of mystery and scientific exploration, the world's largest fresh-water lake, and the site of 4,000 years of human history. Take time to savor all these things; you will be well rewarded.

PROLOGUE

ISLE ROYALE is unique among the National Parks in its wilderness setting, cut off as it is from the mainland by many miles of Lake Superior waters. You can reach it only by boat or seaplane, and upon arrival in the park you will find that there are no roads or wheeled vehicles.

With more than 200 small islands and countless minor rocks surrounding Isle Royale, the park is an archipelago. Shredding the northeastern end of the main island are four fiord-like harbors, longest of which is Rock Harbor. They are bounded by five chains of islands and peninsulas extending into the lake. An island chain at the southwestern end of Isle Royale separates Grace Harbor from Washington Harbor. Most of the harbors are navigable, and usually the water close to shore is deep.

Isle Royale is the largest island in Lake Superior. About 45 miles long and 9 miles across at its widest point, it occupies about 210 square miles. Highest point on the island is Mount Desor, 792 feet above lake level and 1,394 feet above sea level.

Park headquarters is on Mott Island, part of the island chain forming the southeast boundary of Rock Harbor.

GETTING TO THE PARK

Boat service to the park is available from Houghton and Copper Harbor, Mich., and from Grand Portage, Minn. Cars can be left at these points on the mainland.

From late June through Labor Day, the 165-foot *Ranger III*, the National Park Service boat, leaves Houghton each Tuesday, Thursday, and Saturday; it returns from Rock Harbor Lodge each Wednesday, Friday, and Sunday. Weekly trips are available for pre- and post-season campers.

The 65-foot *Isle Royale Queen II*, privately operated by Ward Grosnick, makes a round trip daily except Sunday from Copper Harbor to Rock Harbor Lodge; late June through Labor Day.

The 64-foot *Wenonah*, privately operated by Sivertson Bros. Fisheries, of Duluth, Minn., makes a round trip daily except Sunday from Grand Portage to Windigo Inn; late June through Labor Day.

The 48-foot *Voyageur*, also operated by Sivertson Bros. Fisheries, makes two or three trips weekly, circumnavigating Isle Royale and returning to Grand Portage; May through October. Pre- and post-season transportation is available for campers.

Since transportation schedules and costs vary from year to year, you should request current information in advance of your trip to the park. This information may be obtained each year about May 1 by contacting the Superintendent, Isle Royale National Park, Houghton, Mich., 49931.

Daily rail service is available to Houghton via the Chicago, Milwaukee, and St. Paul Railroad connecting with the Soo Line.

Daily bus service to Houghton is maintained by the Northland Greyhound Lines. Connections are made with related lines providing service to all principal cities. Bus service is also available from Duluth to Grand Portage.

Air service is available from major midwestern cities via North Central Airlines to Houghton-Hancock, and charter air service is available from Houghton to Rock Harbor and Windigo.

WHERE TO STAY

Rock Harbor Lodge and Windigo Inn operate from about June 20 to Labor Day. For information concerning accommodations, rates, and reservations, write to National Park Conces-

Beavers cut this birch, Ma'am.



sions, Inc., Mammoth Cave, Ky., 42259, in winter; National Park Concessions, Inc., Rock Harbor, Houghton, Mich., 49931, in summer for *Rock Harbor Lodge*; National Park Concessions, Inc., Windigo Inn, Isle Royale, via Grand Portage, Minn., 55605, in summer for *Windigo Inn*.

CAMPING AND CAMPGROUNDS

Camping at Isle Royale offers a delightful opportunity for those who truly love the outdoors. No road! No cars! You must hike or go by boat. The solitude of wilderness trails and vistas of wave-swept shores will be long remembered.

There are no regularly operated grocery stores or markets, which means that practically all provisions must be brought along on the initial trip. Limited supplies of foodstuffs may be purchased at Rock Harbor Lodge. But this source of supply is not conveniently located for campers, and to reach it may entail a considerable hike or journey by boat. Thus, a trip must be planned in detail if it is to be a success.

Be sure to bring first-aid materials, for it is a long trip from the park to a doctor's office. Be careful at all times, since even a minor accident can turn a happy outing into a dismal experience. Boil all water—except that from taps—and have food with you that can be kept safely without refrigeration.

A good tent or shelter and adequate bedding are essential. Lightweight equipment is best for packing in. Mosquito netting and insect repellent will add to comfort.

Warm clothing is a must. Stout, comfortable footgear is best for the rough and often wet terrain. Strong, loose-fitting trousers and 8- or 10-inch boots are favored over high boots and breeches. A good windbreaker jacket that will resist snagging, a woolen sweater, and a sweatshirt will provide variety for changing temperatures. A lightweight, fold-away raincoat will be useful in sudden showers.

Choose a camping place that matches your interests. The one at Merritt Lane offers little for hikers, but is good for fishermen. Campsites near Rock Harbor and Windigo are good for fishing and hiking. If cross-country hiking is what you want, any campground will do. The centerspread map shows the location of all campsites and connecting trails. All campsites are equipped with one or more Isle Royale shelters (three sides walled in, screened front with screen door, and a wooden floor). There are usually enough shelters for all campers, but be prepared to use your tent. Each shelter site also contains a grill or fireplace with table and benches, and each campsite has toilet facilities.

Charcoal or wood can be burned in the grills. Charcoal is available from the lodge concessioners and from the mail-and-supply boat out of Grand Portage. If you use wood, be certain to take only fallen dead wood. Cutting live wood is prohibited and cutting standing dead trees is extremely dangerous because vibrations may snap off upper limbs, seriously injuring anyone standing below. If you have gasoline stoves or lanterns, you must purchase the gasoline at one of the lodges at the island because GASOLINE MAY NOT BE CARRIED TO THE PARK ON ANY COMMERCIAL BOATS.

Campsites are on a first-come, first-served basis. Rock Harbor Campground is primarily for overnight use; other campgrounds are subject to a 14-day limit.

After choosing your campsite, you must plan how to get there. The *Ranger III* from Houghton docks at Rock Harbor Lodge; you will then have to get from the lodge to your camp-

site. If your campsite is at Daisy Farm you will need to hike 6 1/2 miles or use a boat.

If you arrive via the *Isle Royale Queen II* from Copper Harbor or the *Voyageur* from Grand Portage, you can often arrange in advance with the boat operator to disembark directly at your campsite. (See under "Services" for a complete listing of transportation facilities within the park.)

It is impossible to predict weather or the prevalence of mosquitoes and flies. Normally, however, fog is common during June and sometimes during early July. Lake storms become more prevalent near September 1. Mosquitoes are most common in moist years in early summer, and black flies and deer flies become common in midsummer of some years. Modern insect repellants take care of these pests. Tent campers will find a mosquito net handy; shelters are screened in. There are no poisonous snakes or poisonous-to-the-touch plants in the park.

CAMPFIRE PERMITS ARE REQUIRED FOR ALL CAMPSITES. They may be obtained, at no charge, at one of the following stations: Mott Island, Rock Harbor Lodge, Amygdaloid Ranger Station, Windigo Ranger Station, or Malone Bay Ranger Station.

SERVICES

Transportation Within the Park

The privately owned *Isle Royale Queen II* from Copper Harbor will take campers to campsites at the northeast end of the park. Arrangements should be made in advance with Ward Grosnick, Copper Harbor, Mich., 49918.

The *Voyageur*, also privately owned, circumnavigates the park (usually clockwise) two or three times weekly from Grand Portage. You can board it at Rock Harbor Lodge and travel to Windigo, or vice versa; or you can arrange to have it pick you up at your lakeside camp for transportation to another point in the park or to Grand Portage. Arrange in advance by writing Sivertson Bros. Fisheries, 366 Lake Ave. S., Duluth, Minn., 55802.

A campers' boat service is offered by Rock Harbor Lodge to Daisy Farm, Moskey Basin, Tobin Harbor, and other more distant points. Rates vary with distance and number of persons. Guided excursions and trolling trips in motor launches are available at Rock Harbor Lodge and Windigo Inn.

Communications

Telegrams may be sent and received at Rock Harbor Lodge or Windigo Inn, via the National Park Service radio system, *if the message is urgent*. Incoming telegrams should be addressed to the terminal point desired, Isle Royale National Park, Houghton, Mich., 49931.

Mail service is provided two or three times weekly from Grand Portage, Minn., to the post office at Rock Harbor Lodge. Address: Rock Harbor Lodge, Isle Royale National Park, Houghton, Mich., 49931.

Medical Services

There are *no* regular medical services in Isle Royale National Park. Therefore, extreme care must be taken to avoid accidents. Those who knowingly have heart difficulty or some similar ailment should, in their own interest, consult their physicians before planning a visit. Often there are physicians among the guests at the lodges, and their services are always sought in emergencies; but their presence at the right place at the time of emergency is only coincidental. A plane or boat can carry injured or ill persons to Houghton where good medical services and a hospital are available . . . *if weather permits*.



Let's stay awhile.

Lakeside Camping Accommodations

Camping Areas	Shelters	Tables	Fireplaces (& grills)	Toilets	Docks
Duncan Narrows	2	2	2	1	1
Duncan Bay	2	2	3	1	1
Belle Isle	6	12	12	2	1
Birch Island	1	2	2	1	1
McCargo Cove	6	8	8	2	1
Todd Harbor	1	1	2	1	1
Lake Desor	1	1	2	1	0
Washington Creek* **	10	12	12	4	0
Beaver Island	3	3	3	1	1
Grace Island	2	2	2	1	1
Camp Siskiwit	2	2	2	1	1
Hatchet Lake	2	1	2	1	0
Malone Bay**	5	5	6	3	1
Chickenbone Lake	1	1	1	1	0
Chippewa Harbor	4	4	4	2	1
Moskey Basin	6	8	8	3	1
Daisy Farm* **	18	20	20	5	2
Caribou Island	2	3	4	2	1
Rock Harbor 3-Mile	2	2	2	1	1
Tookers Island	2	2	2	1	1
Tobin-Rock Harbor* **	9	11	11	4	0
Merritt Lane	1	1	2	1	1

*these campgrounds have treated, running water.

**these campgrounds have a community shelter.



Lunch time in a secluded cove.

Lodge Stores

There is a camper supply store at Rock Harbor. Limited quantities of staple foods, films, pictures, post cards, candies, tobacco, and curios are available at Windigo Inn. Those who will need large amounts of provisions or special supplies should bring them to the park.

Churches

Roman Catholic and Protestant services are held each Sunday at Rock Harbor Lodge.

A famous resident in typical pose.



TELLING THE PARK STORY

The park provides many programs and activities whose purpose is to help you get the most from your visit.

Programs are given at Rock Harbor Lodge every night except Sunday, with a different discussion topic each night. These talks introduce you to Isle Royale's geology, flora, fauna, and climate. Illustrated talks are also conducted nightly at Windigo. Campers as well as lodge guests are invited.

Campfire talks are given two evenings per week at the Daisy Farm Campground. See the campground bulletin board for schedules.

Visitors traveling to the park on the *Ranger III* from Houghton, Mich., can attend the slide talk, "Introducing Isle Royale National Park," presented at about 2 p.m. each voyage.

Naturalist-guided trips lasting about an hour start from Windigo Ranger Station to coincide with the schedule of the *Wenonah* from Grand Portage; half day conducted walks are also offered.

Similar naturalist-guided trips are offered daily at Rock Harbor Lodge to coincide with the schedule of the *Isle Royale Queen II* from Copper Harbor, Mich. Half day naturalist-guided trips also start from Rock Harbor Lodge; schedules are posted at the dock information building.

There are self-guiding nature trails at Windigo, Rock Harbor (2), and Daisy Farm Campground. Interpretive signs are found at Rock Harbor and Windigo.

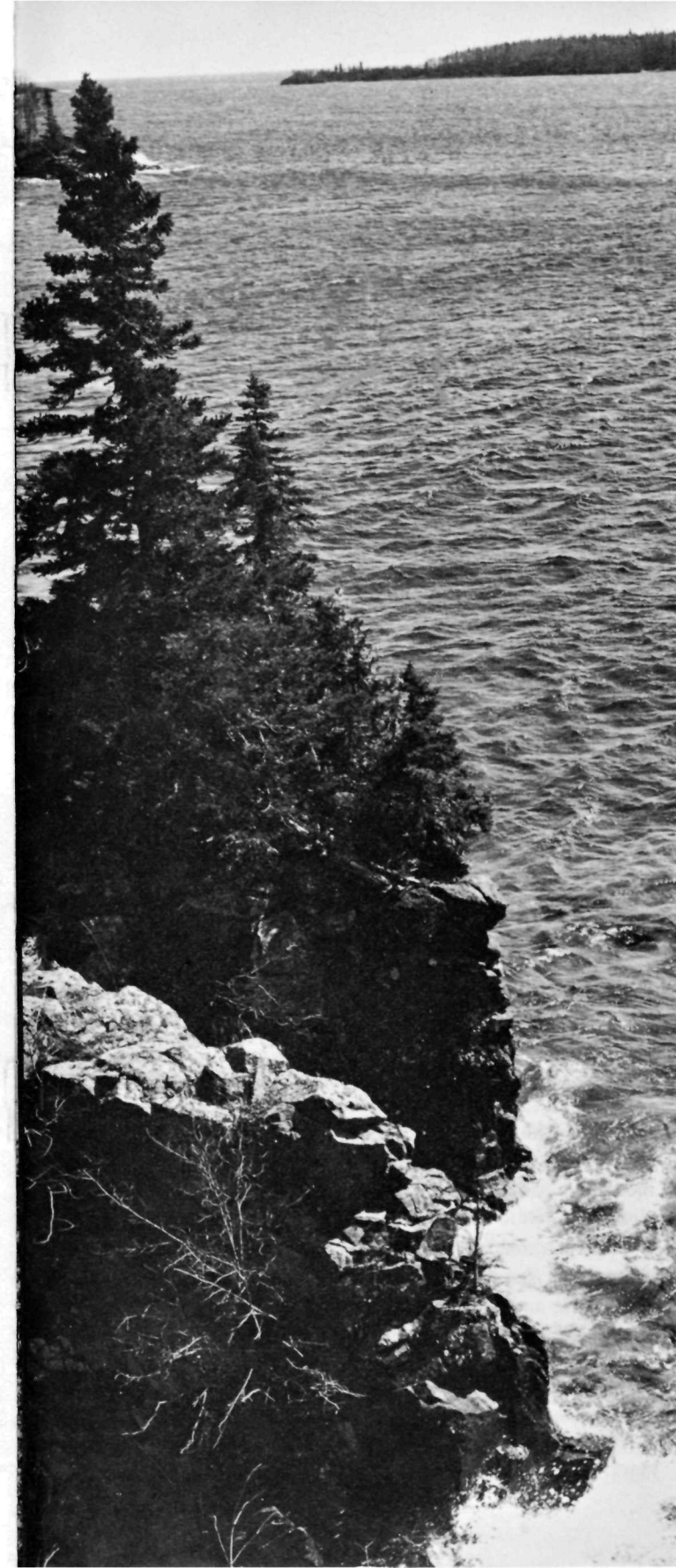
ISLE ROYALE ADVENTURES

Boating

Aside from hiking, boats are the only form of transportation at Isle Royale. Here is an excellent way to see the park.

Motor launch trips can be arranged at Windigo Inn or Rock Harbor Lodge in connection with trail trips, picnic parties, or sightseeing cruises.

Small boats (20 feet or less) may be brought with you on the *Ranger III*, the *Isle Royale Queen II*, and *Wenonah*, and the *Voyageur* if space is available, and if you make advance arrangements. Please note that U.S. Coast Guard regulations prohibit the carrying of gasoline aboard commercial boats in any kind of container, including the boat engine.



BOAT RULES AND SUGGESTIONS

1. Know as much as possible about your outboard engine: How to change a shear pin or spark plug, for example, and how long you can expect to run on a gallon of gasoline. Do you have extra shear pins and plugs? And the proper tools to work with?
 2. There must be a pair of oars in each boat whether or not an outboard motor is used (oars furnished with rented boats).
 3. There must be one life preserver for EACH person in the boat (furnished with rented boats).
 4. Outboard motors are prohibited on all inland lakes and streams in the park.
 5. No boats of the type generally called "houseboats" are permitted in park waters.
 6. You should have a compass of some kind and know where in the boat it will work properly (NOT furnished with rented boats). Because of sudden fogs, you should know your location at all times so that you could get to shore by using your compass.
 7. It would pay off in safety and enjoyment to obtain Lake Survey Chart No. 981. This chart shows Isle Royale, the names of all harbors and bays, and which waters are and are not safe for boating. (Order from U.S. Lake Survey, 630 Federal Building, Detroit, Mich. Price: \$1.)
 8. You must use running lights when boating after sundown. Check Coast Guard regulations for the proper lights.
 9. Also see Coast Guard regulations regarding fire extinguishers. The "dry chemical" type is recommended.
 10. All boat owners should acquaint themselves with Public Law 85-911, the Federal Boating Act of 1958.
 11. Dumping garbage, litter, oily waste, or gasoline into park waters is prohibited. *Lake Superior is your water supply.*
 12. In Isle Royale National Park, docks may be found at all lake-side camps, ranger stations, lodges, and commercial fishing sites. Go slow past such areas so that your wake does not damage boats moored at these docks. Also, when tying up at a dock, prevent damage to your boat by leaving slack in the lines so that the boat rides relatively free in the water. If you must moor where there is no dock, pull your boat all the way out of the water or anchor it away from shore; a partially beached boat may be seriously damaged by wave or wake action.
 13. Canoes, except for inland lakes and well-sheltered waters, are not favored because the waters of Lake Superior are not generally suited for canoeing. Portaging between inland lakes and between bays and harbors is limited to two major routes: (1) McCargo Cove to Chickenbone Lake to Lake Livermore to Lake LeSage to Lake Richie, then either to Lakes Intermediate and Siskiwit or to Chippewa Harbor; (2) Duncan Bay to Five Finger Bay to Lane Cove to Herring Bay, then to either Amygdaloid Channel or McCargo Cove. Portaging on the first route is difficult, and there are no regular portaging trails. The second route provides short, easy portages. Be sure to consult a park ranger before attempting any of these trips.
 14. Whenever you go out on a boat or canoe trip, especially if you plan an overnight outing, obtain a campfire permit.
- Above all, you are cautioned against overloading your boat, and are urged to observe all possible safety precautions. And, if you are not an experienced boater, stay in sheltered waters.*



← Land and water in timeless strife.

Boats and outboard motors can be rented at Rock Harbor Lodge and Windigo Inn. Most of the boats are 16-footers and can be used either as rowboats or with outboard motors. To assure yourself of a rental boat during heavy visitation in the park, it is best to reserve one in advance. Fifteen-horsepower motors are the maximum size permitted on rented boats.

The Marina at Rock Harbor Lodge is open from about June 20 until about Labor Day. Dock rental facilities include electrical and fresh-water hookups for boats equipped to use them.

Navigating Across Lake Superior to the Park

Two persons have drowned and two almost drowned using small boats to get to Isle Royale. In general, if your boat is 20 feet or less, bring it to Isle Royale aboard one of the boats listed under "Getting to the Park." If you do navigate across Lake Superior, be sure you have proper equipment and skill to use it. Get all latest marine weather forecasts before you start, and advise the Coast Guard of your plans. Report your arrival to the nearest ranger station.

Swimming

Isle Royale is not considered a good swimming area because: (1) The waters of Lake Superior are cold—ranging from 35° to rarely over 60° during warmest periods; (2) waters of some inland lakes, though warm enough during middle and late summer, contain bothersome (but harmless) leeches; and (3) sand beaches are almost nonexistent. For those who brave these obstacles: Be careful in rocky areas—do not dive in head-first; don't stay too long in the cold water—about 10 to 15 minutes is all the body can stand; and carry salt to remove leeches.

Only the very experienced should attempt skin diving. You MUST obtain a special park permit before doing so.

Hiking

Isle Royale is laced by more than 115 miles of foot trails. Primitive, but well marked, they invite you to inland lakes, historic mine ruins, geological landmarks, campgrounds, and fire-lookout towers.

The Greenstone Ridge Trail, extending 40 miles from Rock Harbor Lodge to Washington Harbor, provides the longest hike through the interior. Side trails enable you to explore many harbors and lakes. Plan several days for this trip, which offers fine lake fishing, opportunities to see varied plant and animal habitats, and broad vistas. Hikers can camp at Lakes Chickenbone, Hatchet, and Desor along this trail. Because the Greenstone Ridge Trail hike is quite an accomplishment, a jacket patch is sold to those who make the trek from Rock Harbor Lodge or Daisy Farm to Windigo, or the reverse trip.

A number of combination trips, by boat one way and trail the other, can be arranged with the lodges or commercial carriers.

In planning hiking or camping trips, you are urged to get precise directions at park headquarters or a ranger station, where you can also get the required campfire permit. All hikers should read the section, "Camping and Campgrounds."

Fishing

Inland lakes and streams are open to fishing under National Park Service regulations; copies are available at park headquarters. No fishing license is required. Michigan fishing regulations apply to the waters of Lake Superior.

More than 30 inland lakes contain game-fish species. Pike and perch are common in most of them, with walleyes included in Chickenbone, Dustin, and Whittlesey. In Siskiwit, whitefish and lake trout are taken also. No boats are available on the inland lakes. Fish may be caught from shore, but inflatable rafts, canoes, or wading boots are recommended.

Isle Royale has about 25 miles of trout-fishing streams. The major ones are Washington and Grace Creeks, and Little and Big Siskiwit Rivers. Brook trout is the main species taken, with some rainbow.

About 50 kinds of fish exist in Isle Royale waters. Some species found in the inland lakes are unique to these waters. Among these are Lake Desor whitefish and cisco, and Sargent Lake cisco. Lake trout are taken in Lake Superior by trolling over reefs and along the shore. Harbors also offer brook and rainbow trout, and northern pike.

Fishing tackle is furnished by the guides on guided trips, or it may be bought at Rock Harbor Lodge or Windigo Inn from the concessioner.

WHAT TO BRING AND WEAR

Nights are cool, and day temperatures rarely rise above 80°, so bring warm clothes. Lake outings require a heavy sweater or coat. Hiking clothes and comfortable walking shoes are appropriate for camping, boating, and fishing. Lodge accommodations are informal, so you will feel at home in casual clothes.

Opportunities for photography are excellent. So take your cue, camera fans. Binoculars are handy for close observation of wildlife and for distant views. Dark glasses are advisable when on the water or along the lake shore.

THE FORMATION OF ISLE ROYALE

The rocks of Isle Royale were formed about 1,200 million years ago. They are principally old lava flows, interbedded

with river-deposited sandstone and conglomerate. Originally horizontal, these rock beds bent downward long ago to form the great basin now occupied by Lake Superior. Isle Royale is on the northwest rim of this basin.

Within the last million years, the continental glaciers of the Ice Age overwhelmed and reshaped the Superior Basin. In doing so, they buried Isle Royale beneath a mile-thick sheet of ice. They ground smooth the surfaces of its rocks and gouged out the basins now occupied by Isle Royale's lakes.

During the melting and retreat of the glaciers, the waters of Lake Superior stood for long periods at higher levels than they do today. This was so because the glacial action had altered the system of outlets that drained the Great Lakes and because the earth's crust, depressed by the enormous weight of the ice sheet, took time to rebound upward. During part of this period, Isle Royale was completely submerged. As each lower outlet for the Great Lakes was opened and as the land surface rebounded, the waters of Lake Superior dropped to new levels. Shoreline gravels, deposited along the cliffs of Isle Royale, record various levels at which the lake waters halted for a time.

The rock beds on the island slope southeast into the lake basin. These layers pass under the lake and appear again on the Michigan shore, where they bear the rich copper deposits of Keweenaw Point. They are known as Keweenawan rocks.

On the island, the edges of the softer rocks have eroded into valleys that extend its full length. Between these valleys, the harder rock beds form long ridges, with Greenstone Ridge dominating. The upper surface of the gentle southeast slope of this ridge is a bed of basalt (a hard, lava-formed rock), and its steep northwest face is the eroded edge of this same bed. The other parallel ridges are similar in form.

FORESTS AND WILDFLOWERS

Isle Royale's location and topography make possible an interesting and varied plantlife. The short summer growing season is typical of the northern clime. For those who love flowers and like to study and identify them in natural habitats, Isle Royale offers several hundred species of wildflowers. They are growing undisturbed . . . save them for others to enjoy.

Among the flowers of Isle Royale, bunchberry dogwood carpets wide areas; in the dense woods are common pipsissewa ("princespine"), twinflower, trillium, and pyrola. The spectacular devilsclub grows on the very northeastern end of Isle Royale, hundreds of miles east of its familiar range in the Pacific Northwest. Saprophytes—plants living on decayed vegetation—are common, including the Indian-pipe ("ghost-flower"). Present everywhere is a wide variety of ferns, lichens, mosses, and fungi. In season the fruits of many plants—blue-

berry, raspberry, strawberry, thimbleberry, sugar plum—are abundant, affording tasty pickings for the hiker and camper.

Coniferous (cone-bearing) and deciduous (leaf-dropping) forests meet on Isle Royale and form an outstanding example of forest transition. The deciduous hardwoods are located in the interior upland section of Isle Royale. Most common are sugar maple and yellow birch; associated trees include red maple, bigtooth aspen, northern red oak, and white pine.

The coniferous evergreens are especially well developed along the shores of the island where Lake Superior produces the cool, moist climate favorable to them. Most common of the conifers are white spruce and balsam fir; and in association are paper birch, quaking aspen, mountain-ash, and jack pine.

WILDLIFE

A 45-mile expanse of water separates Isle Royale from the nearest Michigan shore; Canada is 15 miles away. The island now has only those species of wildlife that have been able to fly, swim, or drift across this water barrier, or cross the ice which occasionally forms a bridge from the Canadian shore.

Beaver, muskrat, mink, and weasel are common, as are red squirrel, snowshoe hare, red fox, wolf, and moose. Some common mammals barred from Isle Royale by the water barrier are deer, bear, porcupine, and skunk.

Moose are commonly seen along streams or on the shores of inland lakes and harbors. They were not on the island before 1900, but when the lake froze across to Canada in 1912, a number of moose may have ventured over the ice. Since then they have flourished on Isle Royale.

The park is a rewarding area for bird observation and study. More than 200 species have been listed, including the bald eagle, osprey, pileated woodpecker, about 25 kinds of warblers, and most common of all—the herring gull.

ANCIENT MAN

Long before Europeans arrived in this country, Isle Royale was visited by prehistoric Indians. They sought copper, occurring in nuggets or large masses along the shores and in the bedrock. Their method of mining is revealed by the great number of ovalshaped hammerstones and pieces of partially burned wood found in pits scattered about the island. Fire may have been used to heat the copper-containing rock, which was then cracked by dashing cold water upon it; finally, hammerstones were used to separate the copper from the fragmented rock.

Radio-carbon age tests by archeologists show that the mining pits date back 3,800 years or more. When European explorers first observed them they were filled with debris. By that time,