

ACADIA NATIONAL PARK
RESOURCE MANAGEMENT DIVISION

Visitor Carrying Capacities

ISLE AU HAUT

MARCH 1983

REVISED OCTOBER 1983

VISITOR CARRYING CAPACITIES FOR ISLE AU HAUT

Public Law 97-335 requires the Secretary of the Interior to establish visitor carrying capacities for the Isle au Haut portion of Acadia National Park. It also requires that these visitor carrying capacities be reviewed and revised, if necessary, every five years. This report provides the theoretical framework and a basis for establishing such carrying capacities on Isle au Haut. In addition, several specific means of limiting visitation to Isle au Haut are discussed.

During the preparation of this report, extensive consultations were held between the National Park Service and representatives of the Town of Isle au Haut. Also, the public was invited to comment on the plan.

Need for Establishing Visitor Carrying Capacities

During the past eight summers, the number of visitors to the Isle au Haut Unit of Acadia National Park has increased substantially. This has caused the local residents of the island to become concerned about what adverse effects future increases in park visitation would have upon both the island community and the park. The National Park Service shares this concern and believes the establishment of visitor carrying capacities would help to resolve this issue.

The National Park Service manages Isle au Haut as a remote island (National Park Service, 1977). The principle management objectives for this unit of Acadia National Park are to conserve the natural resources of the island and to provide park visitors with an opportunity to experience a remote island environment. Implicit in these objectives is that visitor use will not exceed reasonable levels, since large numbers of visitors to Isle au Haut would jeopardize the island's present natural and cultural character.

The need, then, is to determine reasonable levels of visitor use or visitor carrying capacities for the Isle au Haut Unit. For the purposes of this report, visitor carrying capacity is defined as the level of use at which: 1) no unacceptable degradation of the natural resources occurs, 2) a high-quality, back-country experience is provided the individual visitors, and 3) the residents of Isle au Haut and Stonington are not unduly affected. Unacceptable degradation of natural resources consists of: a) damage which is significant to plant and animal population survival, b) damage which is irreparable through natural processes, c) damage which interferes with major natural processes, such as nutrient cycling, and d) damage which causes physical degradation, such as large-scale erosion. Unacceptable degradation does not include those characteristics which define a trail, such as destruction of the duff and litter layer along the hiking trails and small scale erosion consistent with low to moderate trail use. A high-quality, back-country experience consists of hiking along remote trails and beaches and around coves within the park area and involves only limited contact

with other hikers, except on walks guided by park staff. Park visitors occasionally wandering into the Town of Isle au Haut and infrequent parking congestion along the waterfront in Stonington are not considered as adversely affecting the residents of Isle au Haut and Stonington, respectively.

Visitation

Visitation to Isle au Haut via the public boat service during the past eight years is presented in Table 1 and is illustrated in Figures 1, 2 and 3. Table 1 includes number of day visitors and camper overnights by month and indicates clearly the substantial increase in visitation to Isle au Haut between 1976 and 1983. This increase is attributable almost entirely to increased day visitation, since annual camper overnights has fluctuated relatively little during the eight year period while annual day visitation has essentially doubled.

Figure 1 shows the total annual visitation, the annual day visitation, and the annual overnight visitation between 1976 and 1983 and substantiates that the increased visitation during this period is attributable to increased day visitation. Figure 2 gives a monthly distribution of day visits for the eight year period. July and August are the months of greatest visitation, with August accounting for approximately 60% of the July and August day visitation for 1976-1983. Distribution of day visitation for the 1983 season on a daily basis is shown in Figure 3. Day visitors have increased from an average of 16 per day during July and 22 per day during August in 1976 to 25 per day during July and 33 per day during August in 1983. The park staff estimate that approximately two-thirds of the campers are repeat visitors and that probably less than 10% of the day visitors are repeat visitors.

Another component of visitation stems from private boat visits. Although accurate figures have been collected only since August 12, 1982, the park staff believe that, at present levels, no significant problem exists, except that noise from boats mooring in embayments can interfere with normal fish movements upon which local fishermen using weirs depend. Private boats can also interfere with the many lobster traps set around the island and thereby disrupt the lobster fishery.

The final source of visitation comes from inhabitants of the Town of Isle au Haut. Most of these visitors are summer residents, their guests, and individuals who rent summer cottages on the island. The exact magnitude of summer rentals is now known, but probably the 50 summer cottages are rented, on the average, at least once each summer, usually for one month. The average summer inhabitant probably makes at least one visit to the park per month, but records of this source of visitation have only been kept since August 12, 1982.

TABLE 1. Isle au Haut Visitor Use 1976-1983

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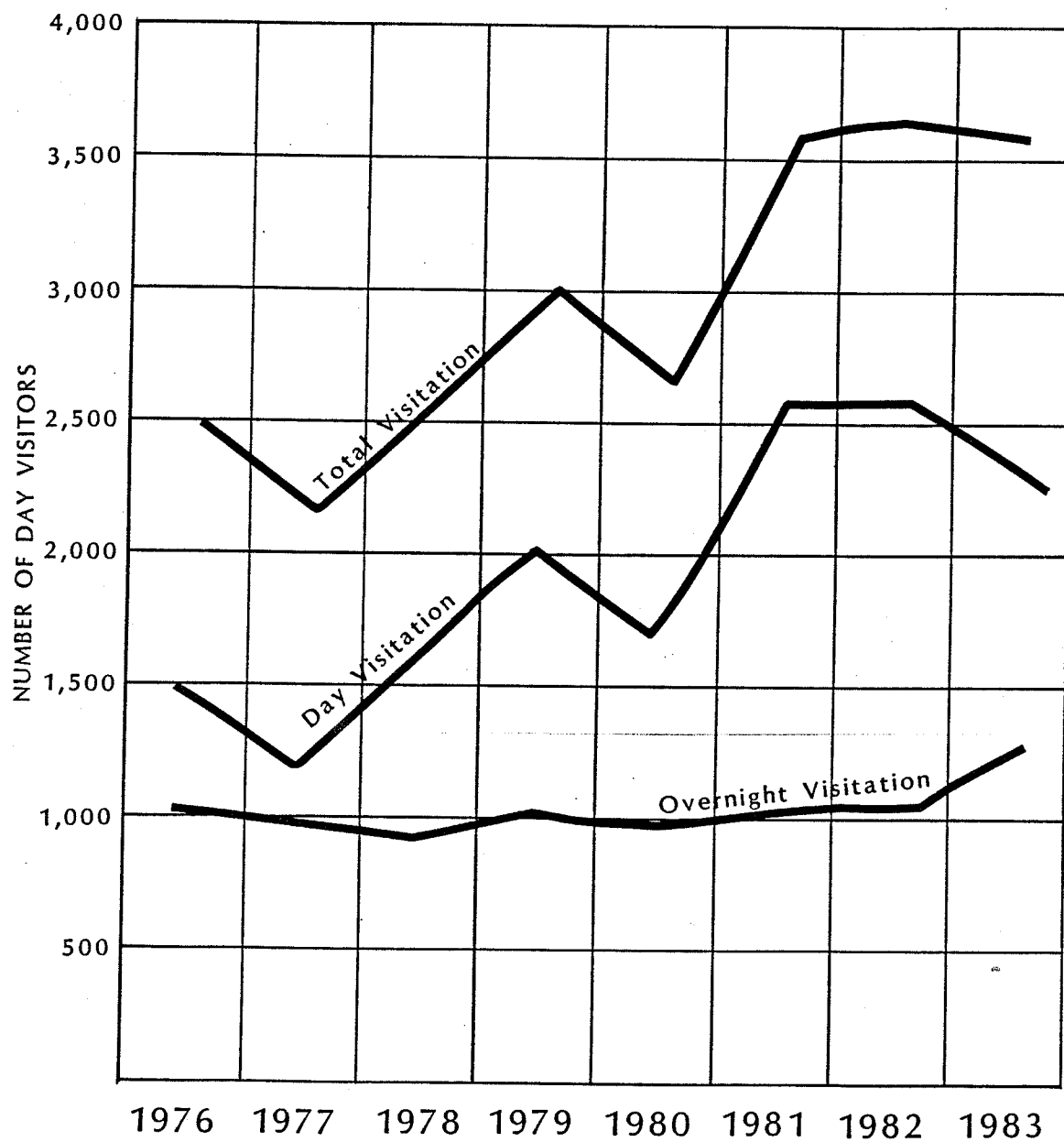


FIGURE 1. Annual Visitation to Isle au Haut, 1976 - 1983

NUMBER OF DAY VISITORS

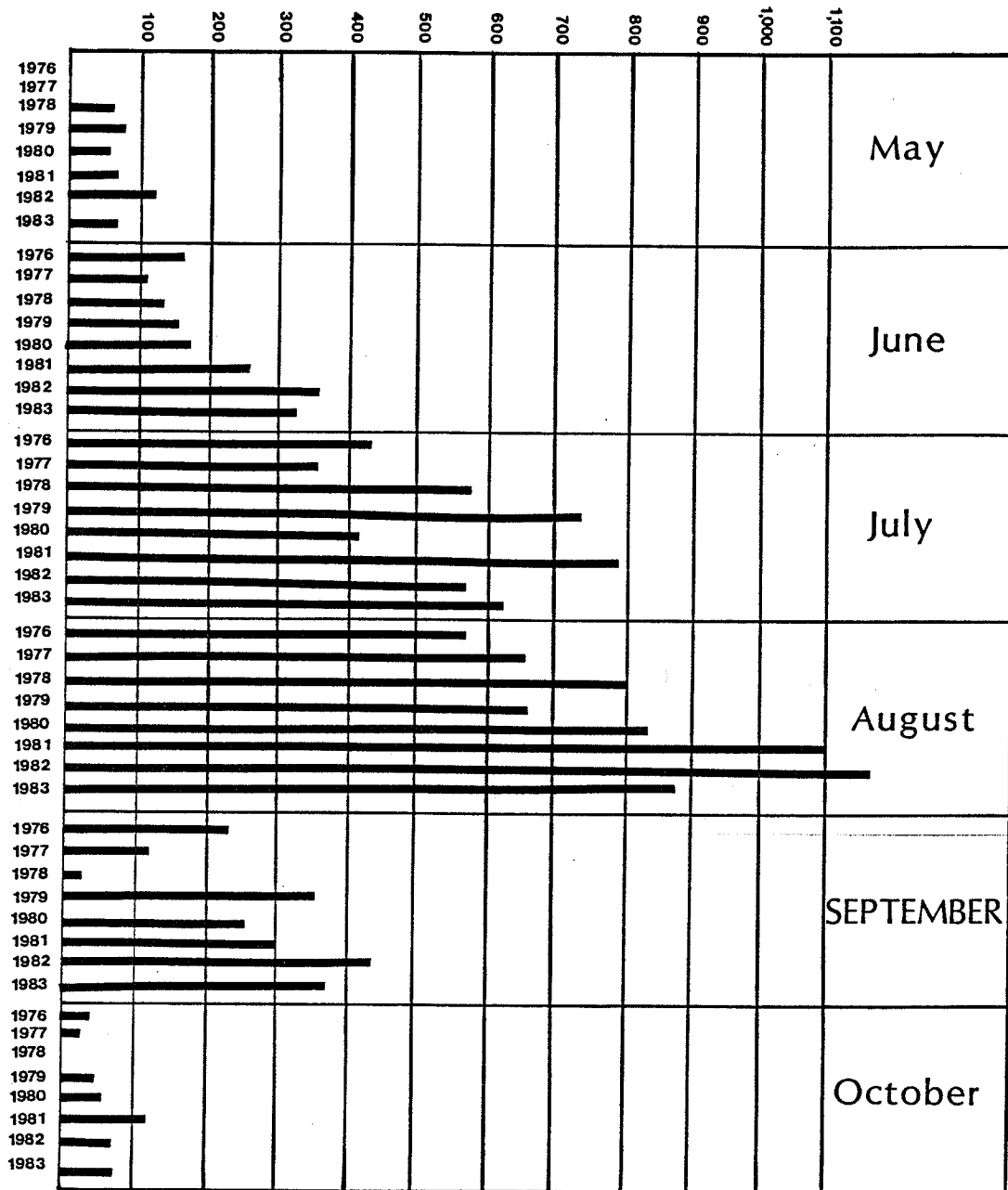


FIGURE 2. Monthly Distribution of Day Visitors to Isle au Haut, 1976 - 1983.

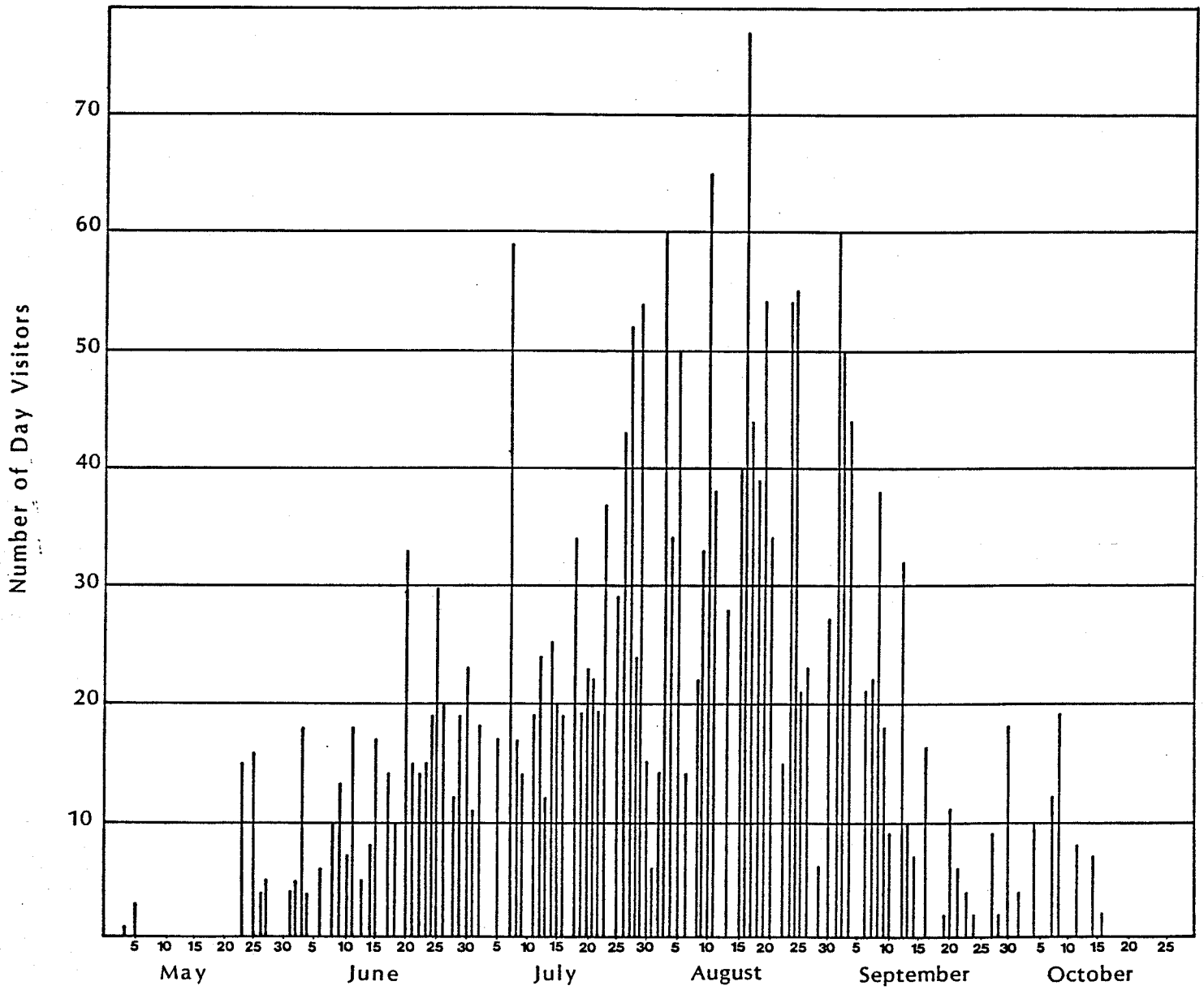


FIGURE 3. Distribution of Day Visitors during the 1983 Visitor Season.

Present Management Activities

As a remote island, the Isle au Haut Unit of Acadia National Park contains only minimal visitor facilities. A floating dock for landing visitors is situated in Duck Harbor on the western shore of the island, and from this location approximately 17 miles of hiking trails and five miles of gravel road within the park provide the visitor access to a single campground, the summit of Duck Mountain, the coves and headlands along the southern shore of the island, and a seasonal ranger station near the Village of Isle au Haut. The campground consists of five adirondack shelters with a capacity of six occupants each, two composting toilets, and a water well equipped with a hand pump. The only other visitor facilities on the island are two chemical fields toilets, with one located near the floating dock landing and the other at the seasonal ranger station, and several wayside bulletin boards. In the Spring of 1983, the campground was relocated from the northern shore of Duck Harbor to the southern shore and the number of shelters was increased from three to five.

The only public transportation to Isle au Haut is a boat service provided by the privately-owned Isle au Haut Company which transports passengers, mail and freight between Stonington, on Deer Isle, and the Village of Isle au Haut. This boat service operates year-round and during the summer months is expanded to the Duck Harbor landing in order to provide park visitors direct access to the park from Stonington. The Isle au Haut Company presently operates two boats, one capable of carrying up to 68 passengers and the other up to 49 passengers. The smaller boat is used exclusively during the late fall, winter, and early spring; while during the rest of the year, the larger boat maintains the regularly scheduled runs and the smaller boat is used for extra, unscheduled runs and as a back-up for the larger boat.

Most of the day visitors to the park arrive at the Duck Harbor landing via the boat service's mid-morning trip out of Stonington and return on the late afternoon trip, thereby giving them approximately 4-1/2 hours to explore Isle au Haut. Some day visitors take the early morning boat to the town dock in the Village of Isle au Haut, but then must spend considerable time to reach the park since the town dock is approximately four miles by trail or by road from Duck Harbor and there is no public transportation on the island. The overnight campers generally arrive at the Duck Harbor landing in order to avoid carrying their camping equipment and supplies the four miles from the town dock.

During the summer season, the park staff attempts to monitor each boat service arrival at both Duck Harbor and the town dock and to explain to each visitor how to reach such locations within the park as the campground, the ranger station, Duck Mountain, and the coves and headlands on the south shore. In addition, a member of the park staff may accompany the visitors on the mid-morning boat from Stonington to Duck Harbor and then lead them on an interpretive hike over Duck Mountain and along the south shore to Western Head.

Overnight visitation is by paid reservation only and is limited to a maximum of six campers per shelter per night. A shelter may be reserved by a single individual or a family or group of individuals up to a total of six individuals. Reservations for the shelters are accepted by the Park Service at the beginning of April and usually by mid-April the summer season is completely reserved. However, because the weather is quite unpredictable, a number of the reservations result in "no shows" and go unused each season. Hence, reservation numbers are not indicative of the number of overnight campers that will visit the park in any given year.

A few park visitors travel to Isle au Haut by private boat and usually arrive either at Duck Harbor or at the town dock. The park staff attempts to contact these visitors as soon as they come ashore in order to explain the park and the various park rules to them firsthand. However, as might be expected, the park staff is simply unable to contact all of these visitors.

Some of the visitors, especially those who stay in the campground, hike the entire trail network within the park. The trails that receive the most foot traffic are those on Duck Mountain and Western Head. The trail between the ranger station and the campground, as well as the trails along the coves east of the trail from Duck Mountain, receive considerably less foot traffic, while the trails in the vicinity of the Great Meadow and Jerusalem Mountain along the northern border of the park receive very little use. All hiking trails within the park are cleared of blow-downs in the spring, and any damage to foot bridges is usually repaired by early summer. However, many of the wet and boggy areas that are crossed by trails have no treadway and are in need of maintenance, as are several badly eroded areas on the steeper slopes along the trails to Western Head.

Determination of Visitor Carrying Capacities

The concept of visitor carrying capacity is a complicated one since it involves both biotic and physical changes and human perceptions and expectations. On a remote island such as Isle au Haut, the biological and physical resources must be preserved while at the same time be accessible to the visitor, and the visitor must be able to experience a sense of the remote island environment. In addition, because of the proximity of the Village of Isle au Haut to the park and the fact that most visitors to the park begin their trip at Stonington, visitor carrying capacity necessarily involves the perceptions of the residents of Isle au Haut and of Stonington. Thus, a visitor carrying capacity for Isle au Haut must balance recreation use against an environment unimpaired by such use.

Several approaches have been used for determining the point at which the visitor carrying capacity would be exceeded and unacceptable impacts would begin to occur (Frissell and Stankey, 1972). The first approach would be to declare that any change from the natural range of variation among the ecosystems of the island would be unacceptable. The second approach would be to limit change sufficiently so that a return to a point within the natural range of variation could be attained by the following visitor season. The third would be to limit change to a point at which a marked departure from a natural rate of change occurs, and the fourth would be to limit change to the point where it becomes obvious and objectionable to the visitor.

Of these four approaches, the second appears most reasonable for Isle au Haut. Limiting visitation to the point at which the ecosystems could return to a condition within their natural range of variation during the next visitor season seems feasible enough, whereas declaring any such change unacceptable is simply impossible where human use is well established. Furthermore, limiting change to the point at which a sudden departure from a natural rate of change occurs ignores adverse incremental changes, while waiting for change to become obvious and objectionable to the visitor involves user perception analysis which is often uncertain and can change as the type of visitor changes.

Present visitor use on Isle au Haut appears to be close to the point at which visitation must be limited if the approach identified above is to be followed. The trails to Western Head show considerable erosion on several of the steeper slopes and numerous mud holes occur in the wet and boggy areas. The trail leading away from the floating dock landing at Duck Harbor also shows sign of erosion, and the immediate environs of the five shelters are devoid of herbaceous vegetation. At present use levels, all of these areas of "heavy wear" show signs of vegetative recovery during late May and early June before the onset of the new visitor season.

Present visitor use also involves only limited contact between small groups of hikers on the trail network and between small groups of hikers and campers near the campground. The only large groups of visitors encountered in the park are the individuals getting off or boarding the boat at the Duck Harbor landing, the daily interpretive hikes over Duck Mountain to Western Head, and an occasional group of campers hiking the trails together. However, any significant increase in visitation would increase the numbers of contacts between hikers beyond the present "limited" category. Visitor parking in Stonington presently produces only minor traffic congestion during the summer months, but again any significant increase in visitation to Isle au Haut would severely strain the existing parking facilities there.

In view of the effects that visitor use has had upon the natural resources of Isle au Haut, as well as its effects upon the Towns

of Isle au Haut and Stonington, the National Park Service set an interim maximum day use level within this unit of Acadia National Park during 1983 at 50 visitors per day via the boat service from Stonington during July and August and at 25 visitors per day during the months of May, June, September, and October. The Park Service believes these interim daily limits will hold visitation at or below the present level of day visitation during the next five years. Under this system, then, annual visitation should not exceed the point at which the ecosystems on the island would be unable to return to a condition within their natural range of variation during the next visitor season, and hence, visitation will not exceed the visitor carrying capacity as defined previously. The Park Service believes that no significant increase will occur in overnight visitation to Isle au Haut within the next five years nor will any significant increase occur in visitation from private boats. Visitation from inhabitants of the Town of Isle au Haut is also unlikely to increase significantly unless the number of summer residents and renters increases in future years.

Visitor Management Program

During 1983, the Park Service attempted to control the number of day visitors travelling to Isle au Haut via the boat service. Visitation to the island was limited to not more than 50 day visitors during July and August and 25 day visitors during the rest of the visitor season. The Isle au Haut Company was asked to monitor the number of individuals boarding the boat in Stonington and to discourage more than the given maximum of day visitors on each particular day as noted above. Also, the Park Service posted a notice regarding the daily visitation limits on the Stonington dock bulletin board and urged groups wishing to visit Isle au Haut to correspond directly with the park in order to arrange for space on the boat.

The results of this attempt to limit daily visitation during 1983 are shown in Figure 3. Day visitors exceeded the 25 person limit five times during September and twice during June, while they exceeded the 50 person limit three times in July and six times in August. The average number of excess day visitors for these 16 days was 12. However, if the three days in September prior to Labor Day are considered to be part of the summer season and a daily limit of 50 persons permitted, the average number of excess day visitors drops to 9 on 14 days.

No additional changes in management activities were instituted in 1983, except that two shelters were added to the campground and individuals requesting camping reservations were required to pay a reservation fee of \$3.00 and an overnight fee of \$4.00 per shelter per night. As the figures in Table 1 indicate, camper overnights did increase more during 1983 than any of the previous six years, but this increase was more than offset by a decrease in day visitors.

During the 1983 visitor season, several transects and photograph points were established along the more heavily used trails, and soil erosion will be monitored at these points for the next five years during periods of both heavy and light use. This will enable the Park Service to make any necessary adjustments in visitor use levels should permanent damage become evident in subsequent years.

During November or December of 1983, the Park Service, in consultation with representatives of the Town of Isle au Haut, will determine whether the natural resources exhibit any unacceptable degradation, whether less than a high-quality experience was provided the individual visitor, and whether the residents of Isle au Haut and Stonington were adversely affected by the level of visitation. If these effects are determined to have occurred, consideration will be given either to reducing the daily limits on the number of day visitors or to establishing an annual limit on visitation below the level of visitation that the daily limits allowed. If no such effects are evident, consideration will be given to increasing the daily limits on the number of day visitors.

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