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A Legal Order for the Oceans: I

AS THE UN CONFERENCE on the Law of the Sea reopens in May in New York, the nations of the world will resume their laborious quest for a legal order for the oceans.

We in the NPCA recall the full endorsement we gave to this project in August 1970 when the President of the United States first advanced the proposal.

The UN General Assembly approved the project and broadened it to include the entire marine environment in December of that year.

The writer has served on the Advisory Committee to the Secretary of State and the U.S. Delegation to the Conference during most of the years since that time.

Our pages have carried many reports and commentaries on the work of the Conference during this period.

The importance of the matter for conservationists should be obvious. At stake is the survival of the oceanic fisheries and ocean mammals; the protection of all of the life of the seas against deadly pollution; the conservation of enormous mineral resources; as well as freedom of scientific research in the oceans. And the establishment of a worldwide democratic legal order for the oceans could lead to a broader planetary system of law.

NOVEL PROCEDURES for the development of international law have emerged at the Conference. Because the world is without a parliament, such development comes for the most part by consensus. Participation in the present Conference has grown to about 150 nations; consensus is difficult.

After the general views of the various governments were expressed at the early meetings, the chairmen of the three main committees and the President of the Conference drafted four sections of a Single Negotiating Text (SNT) as a basis for subsequent discussions.

A general policy was agreed on to seek consensus step by step and avoid voting as far as possible. A rule of silence was adopted, whereby as sections of the SNT were read a failure to object meant provisional assent. A revised SNT (RSNT) was developed by the chairmen and President in the same way later on, and subsequent proceedings have been addressed to the RSNT.

WHILE THE RESULTS in a number of respects are not satisfactory to environmentalists, a remarkable measure of agreement has been achieved on many issues. The main disagreement yet to be resolved is the issue of deep seabed mining.

The issues have been mightily complex: in addition to deep seabed mining and the environmental and scientific problems, they have included the redefinition of the territorial sea, the establishment of economic zones beyond the territorial sea, the continental shelf beyond the economic zone, passage through international straits, freedom of navigation generally, the transfer of technology, the sharing of revenues from mineral exploitation, and machinery for the adoption of rules, the settlement of disputes, and administration. The problems which remain in all these fields cannot be settled by unilateral action.

THE SEABED MINING issue involved the well-known manganese nodules, about the size of potatoes, which lie strewn across some of the deepest ocean floors, several miles down, composed of manganese, nickel, copper, and cobalt. These deposits are considered to be enormous, although the mining costs will be high. Decisive advances are said to have been made toward an effective technology in recent years.

The industrial countries consider the deep sea deposits to be important for their economic and military security. The nonindustrial countries, which hope to industrialize, have feared preemption by the technologically advanced nations. And thus the present deadlock.

The major industrial countries, the United States, the Soviet Union, the United Kingdom, France, West Germany, and Japan, have stood rather solidly together for arrangements which would give their companies or agencies assured access to the ocean minerals where the basic qualifications of the contractor have been met. The so-called Group of 77, actually perhaps 110 nations, mainly nonindustrial, has stood equally firm for giving the proposed Seabed Authority broad discretion over issuance or denial of licenses, permits, or contracts for mining. No further progress can be made until this controversy has been resolved.

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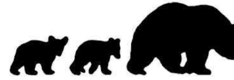

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FRONT COVER Cape Hatteras from Apollo 9, by NASA
BACK COVER Isle Royale, by Richard Frear, NPS

The view of Cape Hatteras (jutting farthest east into the Atlantic Ocean at right) from the Apollo 9 spacecraft illustrates the fragility of the barrier islands off North Carolina. (Cape Lookout, another national seashore, is near the bottom of the picture.) Ironically, because of its connection by bridges with the mainland, Hatteras Island does not provide a true island experience. On the other hand, at Isle Royale in Lake Superior, the only wilderness island park in the National Park System, visitors have no doubt that they are isolated on an island. Fortunately, National Park Service planners seem to be approaching a new preservation orientation in planning management of new national seashore island parks such as Cumberland Island, off Georgia, where the beach is so wild that the endangered Atlantic loggerhead turtle still nests there.

Eugenia Horstman Connally, *Editor*
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weathered american chestnut trunk
jack jeffers photograph

THE NEED FOR A BOAT

Access by boat is the only way to preserve the mysterious charm of an island experience

by GARY SOUCIE

"AN ISLAND," Euell Gibbons wrote in his *Beachcomber's Handbook,* "is a small body of land surrounded by the need for a boat." Neither Noah Webster nor anyone else ever posited a better definition, one that gets more to the heart of the matter of what islands are, how they differ from the rest of the world, what makes them tick. Remove the need for a boat with a bridge, causeway, or plane, and you remove something important from the experience of visiting an island—that vague knowledge somewhere in the recesses of your consciousness that but for the grace of nature and the skill of your skipper you are potentially stranded, marooned, set apart from everything and everyone else in the world that is not on your island. To know that you are truly on an island, just a barometer's drop away from being beyond the compulsion or salvation of act of Congress, presidential fiat, court order, or papal decree is both humbling and exalting. To be alone on an island is to be truly on your own, as alone in the world as it is possible to be these days.

IT IS MORE than just being at the mercy of the weather, this island need for a boat. Three summers ago I spent a week on Isle Royale, our truly roadless national park, and I foolishly made both crossings of Lake Superior by air. Even though the plane, a little Twin Beech float plane run by a concessioner under NPS contract, took off from and landed on the water, flying took something away from the experience. Weather delayed my return flight by several hours and threw all the reservations and schedules awry, even though the passenger boats arrived and departed on schedule. Having to wait on a dock rather than in an airport helped a little to restore the island perspective, but flying diminished the whole experience.

While I was in the park, I camped on Tookers Island, one of several islets surrounding Isle Royale, and I had enough nautical incidents in my rented skiff with fog and heavy chop and running aground on rocks to have an island time of it; but every time I crossed over to the big island to hike the trails or look for moose or buy supplies at Rock Harbor, I couldn't help feeling that I was going to the mainland. Flying to an island, and particularly a wilderness island park, is a mistake I shall never again make.

Driving to an island is even worse than flying, and unfortunately the National Park System is full of bridged islands. At Acadia National Park; at Fire Island, Assateague Island, Cape Hatteras, Cape Canaveral, Gulf Islands, and Padre Island national seashores; and at many of the historic sites and monuments you can drive your car right onto islands. In all these cases the roads and bridges were inherited by the National Park Service along with the islands or forced upon the park islands by political pressures over which the Park Service had little or no control. Still, the Park Service is not entirely blameless.

FOR SEVERAL YEARS and until finally dissuaded by what Thoreau called "the seasonable experience and effectual complaint of the people" (marshaled in large part by the protests of the National Parks and Conservation Association), Congress and the Park Service tried to pave the roadless center section of Assateague Island to connect the existing bridges at either end and give pass-through windshield tourists an easy way to "bag" the seashore for their collections of bumper trophies without ever getting sand on their feet. True, the national seashore's enabling legislation called for the road, but history has shown that errors in the law are better changed than slavishly followed, and the Park Service does not always heed the letter or the spirit of the laws that govern it. After advocating road construction for several years, the Park Service finally realized the damage an island-long road would cause and came out in favor of legislation to delete the sections of the Assateague Seashore Act that had authorized the road. The controversy ended when the 94th Congress voted to approve the deletion.

THE ENABLING legislation for Cape Hatteras, the first of all the national seashores, required that the seashore "be permanently reserved as a primitive wilderness and no development of the proposed project or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing in this area." That was in 1937, yet no part of Cape Hatteras National Seashore is in the National Wilderness Preservation System.

Instead, a highway has been paved the entire length of the seashore, several campgrounds with large asphalt parking lots have been built, Oregon Inlet has been bridged, and the natural coastal processes of the whole seashore have been altered by the construction of artificial dune-dikes and the Army Engineers' maintenance dredging of the inlets. It took the Atlantic Ocean several thousand years to build the barrier islands of Cape Hatteras; it has taken Congress, the Army Corps of Engineers, and the National Park Service only a few decades to undo the island wilderness we inherited.

The first time I visited Cape Hatteras it took two ferry crossings to reach Hatteras Island: one across the Alligator River estuary on the mainland and the other across Oregon Inlet. By the time you got to the island, you knew you were on one for sure. You felt of a piece with the sailors who had been shipwrecked trying to sail around Diamond Shoals, the Graveyard of the Atlantic, and with the brave men who pounded the beaches between the lifeboat stations that the old U.S. Life Saving Service and later the Coast Guard had maintained every six miles along this most treacherous of all our shorelines. You knew you were in the grip of the ocean, a frail visitor in an alien world.

Now those crossings have been bridged, and it isn't quite the same. Old-timers on Hatteras Island attest to the difference automobile access has made. "It has made all the difference in the world," according to Burgess Hooper of the little village of Salvo. "That road and that bridge have turned this island inside out." He recalls what it was like before there was road or bridge, when Hatteras was more truly an island, when contact with the mainland was by the daily mail boats and the freight boat that each week brought groceries to the island from Elizabeth City, North Carolina.

The grocery salesman would drive his car down and cross Oregon Inlet on a Coast Guard flat boat. Burgess Hooper used to cut wood for sixty-five cents a day, so he looked forward to his turn, once or twice a month, to walk up the beach to the inlet to meet the grocery salesman whose car he would drive down the island to Hatteras village, stopping all along the way to take grocery orders for the next freight boat delivery. "Cars had real high-pressure tires in those days, and it took a special technique to drive in the sand." At Hatteras village the salesman would put his car on a ferry to the mainland, and Burgess Hooper would walk back home. Hatteras Island is forty-five miles long, and Burgess Hooper got five dollars for walking and driving it in the deep sand. "That was good money then," he recalls. "Today you couldn't get anybody to walk up the road a mile or two for five dollars."

You can drive the whole island now, and the artificial dunes block your view of the ocean almost the whole way. Still, there is no mis-

CECIL W. STOUGHTON, NATIONAL PARK SERVICE

The bridge across Oregon Inlet connecting Bodie and Hatteras islands contributes to visitors' feeling that Hatteras Island is merely an extension of the mainland.

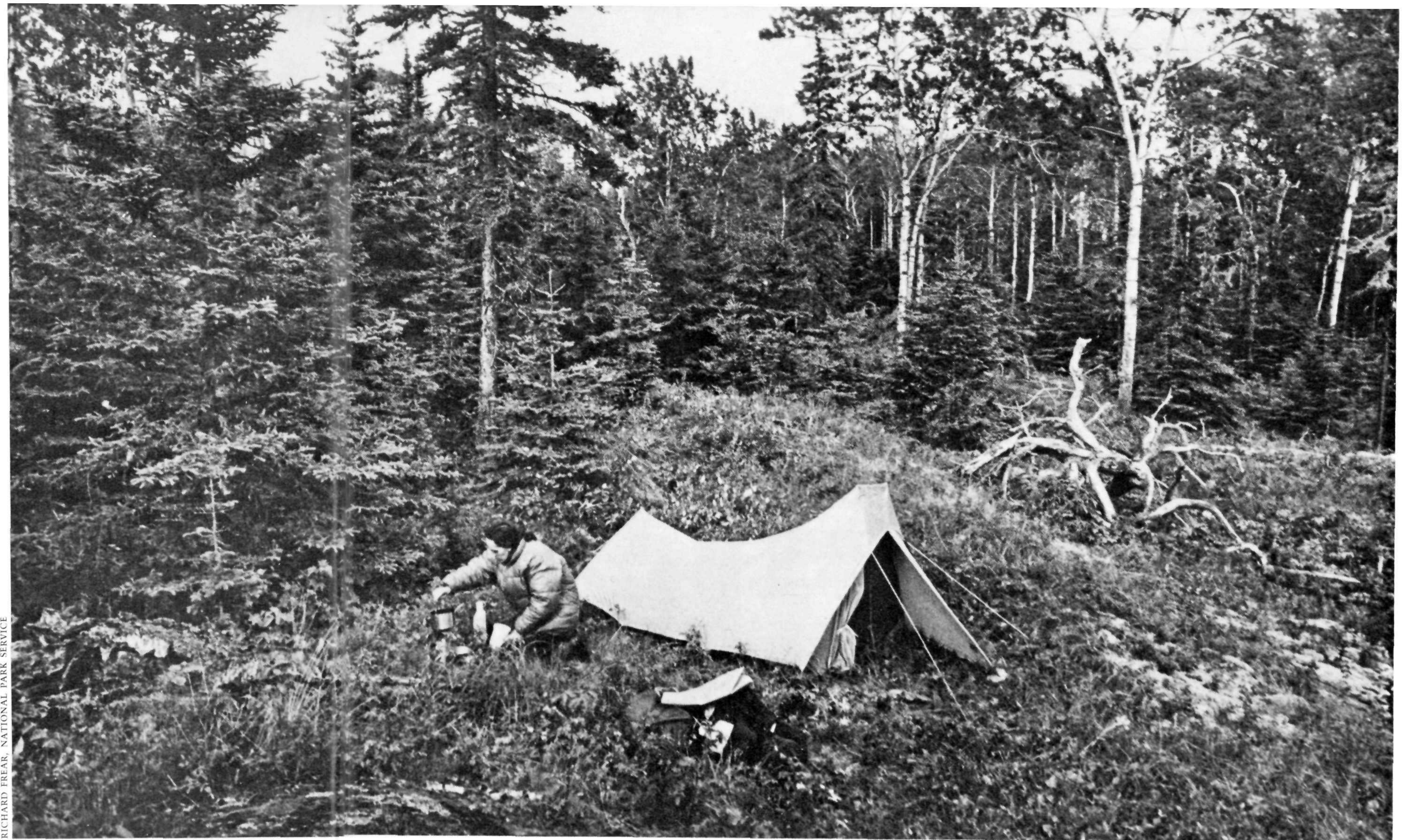
taking that you are on an island, in the domain of the ocean, when you see the remains of the old wooden bridge crossing what was New Inlet just south of Pea Island Refuge headquarters or the place just north of the lighthouse at Cape Point where the dunes have been leveled by storm-driven tides and waves. A single storm in September 1846 cut both inlets that define Hatteras Island, and the sea keeps trying to cut through the island again. One hopes that the Park Service will finally give up fighting the ocean and its natural processes.

AT ACADIA National Park in Maine, Mount Desert Island is separated from the mainland by the narrowest of tidal channels, and that is crossed by a bridge. The island is riddled with roads and private inholdings, and automobile traffic has become such a problem that the Park Service has had to convert the most popular road network (the one that passes Sand Beach and Anemone Cave and Thunder Hole and that overlooks lower Frenchman Bay and the Cranberry Islands) into a one-way loop. In winter the roads that are not plowed are subjected to whining, fuming snowmobiles. You can have a grand littoral experience on Mount Desert by getting out of your car and hiking down the trails to where the surf beats on the rock cliffs and natural seawalls, but it never seems quite like a real island experience. For that you have to make the passenger-ferry crossing to Isle au Haut; on that island there is no mistaking that you are on a bit of land at sea.

GULF ISLANDS National Seashore has two quite different sections. In the Florida section you can drive right onto Santa Rosa Island with its Air Force base, condominiums, trailer campgrounds, and tours of historic Fort Pickens, where the Chiricahua Apache warrior Geronimo was imprisoned when Santa Rosa was an inaccessible island. Ship, Horn, and Petit Bois islands in the Mississippi section are real islands—wild, undeveloped, accessible only by boat. Concession boats will take you to Ship Island for swimming or primitive camping, but you have to make your own way out to Horn and Petit Bois. You can have a real island experience on those three islands, the kind that is fast disappearing from the American experience, the kind the National Park Service should be preserving for the American people. Yet, when Gulf Islands Seashore was coming into the Park System, the Bureau of Outdoor Recreation (presumably with the Park Service's blessing) actually studied the feasibility of bridging those islands together and to the mainland. Fortunately the idea was dropped, but for the wrong reason: The bridges would have interfered with commercial navigation.

ALONG a straight line drawn on a map it is just a couple of miles from the Georgia mainland to Plum Orchard Wharf on Cumberland Island, one of the newest national seashores and the largest and southernmost of the sea islands that buffer the Atlantic Coast from below Cape Lookout in North Carolina to the mouth of the St. Johns River in Florida. Nevertheless, it takes the better part of half an hour to make the crossing from Shellvine Creek landing, so tortuous are the meanderings of the serpentine tidal creeks and rivers that irrigate the expansive salt marshes separating the Georgia barrier islands from the continental main.

A couple of years ago I made my first visit to Cumberland Island, and eager as I was to see this great sea island after so many years of reading and hearing and caring about it, still I relished every minute of the crossing. The day had broken rosy and golden, and the early morning breezes that were fast clearing the blueing sky of the night's cloud cover had already begun to slacken. It was going to be a great day. The rush of air was chilly as we passed great oyster beds that lay exposed like reefs in the low tide, but we could see if not quite yet feel the warmth building in the brightening shafts of morning sun. Just off their roosts, gulls and terns were cruising above the green and golden stalks of *Spartina* cordgrass, and leggy shorebirds and wading birds were poking about for breakfast in the mud flats and creek banks.



RICHARD FREAR, NATIONAL PARK SERVICE

On Isle Royale, our only wilderness island national park, the visitor has a feeling of remoteness and isolation that is the true island experience.

It is a trip anyone can duplicate, now that Cumberland Island has been opened to visitors on a limited basis. Access to the island is provided by a chartered 146-passenger ferry. The Park Service plans to maintain Cumberland's insularity by limiting access to boats and daily visitation initially to just 1,060 people at any one time. This is a welcome change from earlier plans to accommodate as many as 10,000 people a day, which had the Park Service looking at the feasibility of a high-speed monorail across the marshes. Let us hope that this new approach to island management bodes well for the future, that it will not lead to scupper-to-scupper traffic jams of unlimited private boat use.

PERHAPS the National Park Service is beginning to show some sensitivity to what Thoreau called "the undefined and mysterious charm" of islands. Those of us who suffer from the delicious malady islomania—an incurable love of islands that is at once both "chronic" and "acute"—may feel that charm more palpably than the rest; but like Thoreau we are no better able to define it or to unlock its mystery. Still, the undefined and mysterious charm of islands is felt by all of us. Look at the ever-intensifying seller's market in island real estate, the island covetousness of speculators and developers, the growing popularity of island resorts and recreation areas. We all are lured to islands as surely as a moth to a light burning in the dark. Whatever it is that makes islands so special to us, that infuses them with that undefined and mysterious charm, is marvelous and fragile, something nourished by water and a sense of discontinuity and discreteness. A piece of the mainland accessible only by boat can provide a better "island" experience than a geologic island that does *not* require contact with the water surrounding it for access.

We have preserved in the public domain too few of our islands to continue burdening them with bridges and roads and airports. We need to get on with preserving our remaining bits of island heritage, overcoming somehow the fiscal conservatism of the recent administrations, to get on with establishing national park units on the Channel Islands off California and on Kauai, Hawaii, and elsewhere, to dust off the National Island Trust system that was proposed in 1970 but shelved almost without lip service.

An island is a small body of land surrounded by the need for a boat. Preserving that need for a boat is part and parcel of preserving islands, island recreational opportunities, and island experiences. ■

Free-lance conservation writer Gary Soucie has written frequently on islands for this magazine, *Smithsonian, Audubon,* and others. He is presently writing a book about the barrier islands of the Atlantic coast.

CUMBERLAND: The End of a Fairytale

Cumberland Island National Seashore will be kept more primitive than other national seashores

by LARRY KOLB & TANNER GIRARD

CUMBERLAND ISLAND is a place of startling beauty and a wildness that is painfully rare in today's world. On our first night there, we walked the beach. The sudden green phosphorescence of the surf provided the only light; it was just light enough to walk without our flashlight.

Kicking up the fine quartz sand as we went along, we awakened a tiny sandpiper. Surprisingly, it looked up at us but did not fly away. Tanner bent down and picked up the chirping bird in his hands. "I guess it just doesn't know to be afraid of man," he said, replacing it in the sand.

We walked on, refreshed by the incident, marveling at the curving dunes dimly outlined on our left. Stabilized chiefly by beach croton, sea oats, and morning glory, these complex ridges of wind-sculptured sand rise in a few places as high as fifty feet above the sea, protecting the inland area from the threat of storm overwash. The inner dune meadow area provides a suitable nesting habitat for many shorebirds.

We walked to the edge of the water. The wind whipped through our hair, and the surf seemed much louder than it had before. We stood on the edge of America listening to the pulse of life. Is it still man's frontier-born misconception that he must wage war on nature? Must the primeval always be sacrificed? Would Cumberland be saved?

CUMBERLAND has much to be saved. In 1955 the National Park Service made an extensive survey of the Atlantic and Gulf coasts. Its study team's final report describes Cumberland as "one of the two most outstanding undeveloped seashores remaining" along either coast. (The other cited was Cape Cod.) A barrier island in the almost continuous chain extending roughly from Charleston, South Carolina, to Jacksonville, Florida, Cumberland lies a couple of miles east of the mainland and just north of the Georgia–Florida border.

Simplified, the 23,000-acre island is composed of a series of four natural ecosystems. Generally parallel to one another and running in strips from north to south, they are the beach, the dunes, the inland forest, and the salt marsh. Freshwater lakes and ponds, although not extensive, add another important facet to Cumberland's environment.

Sloping gently eastward, the island's white sand beach is as much as a thousand feet wide at low tide. Organisms that live there must survive both periodic saltwater inundation and sustained exposure to a scorching sun. Sands from the windblown beach nourish the dunes. There, too, the sun makes stringent demands on any organism. Only a few species of plants are specialized to withstand the effects of these hot shifting sands. Animals take refuge in the shaded inland forest by day and forage in the dunes at night.

Behind the dunes in many places are tiny freshwater ponds and lakes that serve as both barrier and link between the dunes and the forest. Pocketed behind a massive series of dunes toward the northern end of Cumberland, Lake Whitney is the largest freshwater lake on any of Georgia's barrier islands.

The marginal area between the dunes and the forest contains not only these ponds and lakes, but also a dramatic mixture of the two environments it separates. In some places, pioneering grasses have moved eastward over the dunes. Elsewhere, white sands smother trees of the forest.

Live oaks dominate the forest canopy. Draped in Spanish moss, resurrection ferns, and a multitude of gnarled vines, they effectively keep sunlight from the forest's understory of saw and cabbage palmettos.

West of the dark forest are the island's salt marshes. Twice daily tidal flow pumps nutrients in and out of these vast expanses of smooth cordgrass. As old cordgrass decomposes, it becomes food for the millions of fish and crustaceans that spawn there.

In addition to aquatic animals, the Cumberland ecosystem supports a greater diversity of animals than any of the barrier islands in the South. Twenty-six species of wild mammals are recorded here, including white-tailed deer, otter, mink, raccoon, shrews, bats, and various rodents. One species, the Cumberland Island pocket gopher, is found nowhere else. Unfortunately, it may no longer be found there either. None has been sighted since 1970, and scientists fear it may have become extinct.

Birds, too, are abundant on Cumberland Island. Wading birds feed in the salt marshes and freshwater sloughs and ponds. Large ag-

gregations of sandpipers, plovers, skimmers, and terns mingle near the surf, many nesting in the sand above the high tide line or on offshore bars. Lake Whitney's rare seclusion makes it an important stopover for migrant birds on the Atlantic Flyway.

Alligators and fifteen types of snakes still thrive on the island. Invertebrates also flourish. Ghost crabs patrol the beach, and armies of fiddler crabs occupy mud flats on the island's lee side.

All told, Cumberland's beach, dunes, forest, and salt marsh comprise a resource that becomes more spiritually and ecologically valuable with each mainland acre lost to development. Not many places like this are left anymore.

CUMBERLAND'S rich natural diversity has survived an equally varied human history. About four thousand years ago Timucan Indians became the first human inhabitants of the island. Little trace of the Indians remains on the island. Even less trace was left by the Spanish and British soldiers that dwelled there intermittently after the Indians. The British abandoned two forts on the island, but archeological teams have failed to find them.

A plantation culture followed the Indians and the European soldiers. Wealthy planters began to set up on Cumberland as early as the 1760s. Long staple cotton was their major commercial product, but in the early 1800s they also turned a profit harvesting the island's live oaks. The burgeoning American navy required live oaks for shipbuilding. Cumberland's salt-hardened variety was much preferred over the mainland variety and commanded top prices. Revolutionary War hero Nathaniel Greene was one of Cumberland's early planters. Eli Whitney reportedly perfected the cotton gin at Dungeness, Greene's plantation at the southern end of the island. There, too, Lighthorse Harry Lee, the father of Robert E. Lee, died and was buried until 1913 when the body was moved to Lexington, Virginia.

With the end of the Civil War, Cumberland's plantation economy was wrecked. For sixteen years the island lay quiet. Then, in 1881, a young immigrant from Scotland ushered in a new era in Cumberland's human affairs—and with it the roots of the island's present problem.

Thomas Carnegie, steel baron and Andrew Carnegie's younger brother and business partner, bought Dungeness and presented it to his wife. Before his early death he began a land acquisition program on the island and built a large mansion on the old plantation site. To see it now, razed by poachers in recent years, is to see the joyous

ANNE CAMPBELL

Morning glory is one of the few plants able to survive on the shifting dunes.

reclamation of nature. Vines climb up and down its crumbled walls, and bushes grow on windowsills.

The Carnegies eventually owned almost 90 percent of the island. They built antebellum mansions and constructed recreational facilities for the family's use on old plantation sites. Old fields became skeet ranges, golf links, and deer blinds. Huge maintenance areas and servants' quarters were constructed. Dirt roads were cut to facilitate access to hunting grounds. It was a twentieth century fairytale.

A group of one hundred millionaires established the Jekyll Island Club in the 1880s on Jekyll Island, one island to the north. Centering their lavish cottages around one grandiose clubhouse, Cranes, Rockefellers, Goodyears, Morgans, and Vanderbilts escaped the hoi polloi on this private island. With the Thomas Carnegie family to the south, approximately one-fourth of the world's wealth wintered on these two small adjacent islands.

After her husband's death Lucy Coleman Carnegie remained on the island to continue her husband's buying program and to rear their nine children. Before her death in September 1916, she established a trust to ensure that her 16,000 acres of Cumberland Island would be maintained as a family home until the death of her last surviving child. When her last surviving progeny died, some heirs held their share of the land; others sold. With the likelihood of subdivision and development on the horizon, the National Park Foundation, with a grant from the Andrew Mellon Foundation, eventually purchased about 13,000 acres from various landowners and donated it to the National Park Service. Thus it was that in October 1972 when Congress created the Cumberland Island National Seashore, fully five generations of Carnegies had grown up there.

Today Lucy Ferguson, granddaughter of Thomas and Lucy Carnegie, is the undisputed matriarch of all of Cumberland's Carnegie heirs. She has lived there all her life. There she has reared her four children and helped rear numerous grandchildren. There also, by owning some 1,100 acres of high ground and 500 acres of marsh, she is owner of one of the three major inholdings remaining on the island.

Now in her seventies, Mrs. Ferguson has in recent years moved out of Greyfield, the mansion she grew up in, into another family house a few miles north. She now runs Greyfield as a public inn. On our first visit to the inn, trying to follow directions we had been

EMIL MELLOW

Authors Larry Kolb (left) and Tanner Girard camp among the live oaks and saw palmetto on Cumberland Island National Seashore in Georgia. Overnight camping is permitted on a reservation basis by application to the Superintendent.

given to the inn office, we mistakenly entered a small ground story door that opened into a hallway leading to the main dining room. There, on the plush carpet, stood a white-tailed deer munching a bouquet of cut flowers from a crystal vase. She glanced at us and kept on munching. What an amazing island, we thought; a place where the birds don't fly away and deer roam freely through people's houses!

GIVEN THE MANDATE to manage and preserve Cumberland, the National Park Service has emphasized from the beginning the opinion that it must acquire the entire island before its conservation program becomes effective. Conservation, however, means different things to different people. Lucy Ferguson has always insisted that the Carnegies' principal goal on Cumberland was to maintain the island as a wilderness preserve, even though she has hogs and cattle on the island. But the livestock allows her to make a living off her land, she says; otherwise, she might have been forced to sell to developers long ago. Had it not been for the Carnegie ownership of the island, she says, Cumberland would not be a national seashore today.

Mrs. Ferguson and others on the island are not sure that the Park Service can provide the island with more effective stewardship than it has received in the past. Wary because of Park Service problems at other national seashores, they envison Cumberland Island trampled by thousands of careless visitors daily. So they fight back. Their first effort was to petition at congressional hearings considering establishment of the seashore that their land be excluded from Park Service jurisdiction.

Only one group of landowners—the Little Cumberland Island Home Owners Association—was successful in this petition. The northern tip of Cumberland Island is physically separated from the bulk of Cumberland by Christmas Creek, a brackish tidal flow. These 2,300 acres have been known as Little Cumberland Island since colonial times. The association has negotiated an agreement with the Secretary of the Interior to protect the resources of Little Cumberland while not opening it to the general public. Congress allowed the association this right by virtue of its very strict conservation covenant.

ALTHOUGH CONSERVATIONISTS have had valid grounds for their apprehensions, Congress wrote strong conservation measures into the act that created the Cumberland Island National Seashore. The Park Service, too, realizes its past mistakes at other seashores and is now moving in new directions in planning for management of Cumberland Island.

National Park Service administrative policy classifies national seashores as recreation areas rather than as natural areas. At Cumberland, then, using its standard procedures, the Park Service's major objective would be to provide recreation rather than preservation. However, Congress included a very clear preservation mandate in its legislation for Cumberland Island:

> Except for certain portions of the seashore deemed to be especially adaptable for recreational uses, particularly swimming, boating, fishing, hiking, horseback riding, and other recreational activities of similar nature, which shall be developed for such uses as needed, the seashore shall be permanently preserved in its primitive state, and no development of the project or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing, nor shall any road or causeway connecting Cumberland to the mainland be constructed.

Here is hope for Cumberland. Perhaps most important is the provision that no bridge or causeway be constructed to the island. With the building of a bridge, an island is debased; it becomes a mere extension of the mainland. With no bridge to Cumberland, the Park Service can regulate access to the island. To get there the visitor will have to ride the Park Service ferry.

Also included in the congressional act was the stipulation that the Department of the Interior must conduct a wilderness study and make recommendations as to the suitability of any area within the seashore for wilderness designation. In a recent review of an environmental assessment for a general management plan, the Park Service's favored position is that approximately the northern two-thirds of the island, or about 20,000 acres, be considered for wilderness status. The Park Service states that although much of the proposed wilderness area shows signs of past agricultural practices and other signs of human occupation, the various habitats are recovering rapidly during Cumberland's long growing season.

In that same review the Park Service made recommendations dealing with recreation. Five primitive campgrounds, in which visitor use would be closely regulated; two ferry landing sites; two day-use beaches; three other campgrounds; and a picnic area were proposed. These facilities would be phased in as public interest warranted. At the same time, the Park Service set an initial daily peak one-time-use capacity of 1,060 visitors, stating that if the island could easily sustain such use, the total daily visitation might be expanded to accommodate 200 to 400 people more. Private vehicles would not be permitted on beaches, camping would be on a reservation basis, and jitney excursions to view historical areas and to serve as mobile blinds for wildlife observation would be available on a reservation basis. No horse or bicycle concessions would be provided; and food, drink, and sundry items would be provided only by vending machines. A visitor center at a mainland base would orient visitors and provide information on the natural and historical features of the island.

The Park Service is now making progress in developing a final plan for management of Cumberland Island National Seashore. A draft management plan and an environmental impact statement will be available for public review within the next three months, and wilderness recommendations will be ready for public hearings by late spring or early summer. Members who wish to inform themselves of these plans should write to the superintendent and request copies when they are available.

Superintendent Paul McCrary
Cumberland Island National Seashore
P.O. Box 806
St. Marys, GA 31558

Conservationists are hopeful that the plans for limited access to Cumberland Island National Seashore indicate a new, more protective approach by the Park Service to management of national seashores. ■

Larry Kolb and Tanner Girard wrote this article as a result of a visit to Cumberland Island National Seashore during a thousand-mile canoe trip through Georgia and Florida.

Let's Help The Atlantic Loggerhead

Loss of habitat, predation by man and animal, and shrimp trawlers' nets have all contributed to the decline of Caretta caretta

by DELPHINE HALEY

MOONLIGHT bathes the beach of Georgia's Cumberland Island on a soft summer night. In silvery flashes it dapples the surf, its reflections broken as a hulking form emerges from the waves. Dark and cumbersome, the figure lumbers slowly toward the upland shore, an ancient species of reptile—the loggerhead sea turtle—responding to the instinct of some 90 million years. She will lay her eggs in the cool sand on one of the last undisturbed nesting sites remaining to her species.

Caretta caretta, the loggerhead turtle, is a member of an ancient group that has been cruising the seas for more than 90 million years. This direct link to the Age of Reptiles has remained virtually unchanged since primitive times. Like other sea turtles, it is equipped with flippers for swimming and with a more streamlined carapace than that of its land-based kin. Although there are record weights of 700 to 900 pounds, the loggerhead averages 250 pounds, with a carapace length of about thirty-six inches.

The loggerhead is probably best distinguished by an outsized head that measures as wide as eleven inches. This "larger head" is believed to be the source of the turtle's name. The loggerhead relies on a carnivorous food supply such as crabs and other crustaceans, shellfish, sponges, jellyfish, and fish. In temperate regions, it wanders widely from estuary to continental shelf, sometimes drifting out to midocean to feed.

Male loggerheads never again set flipper to land after they enter the sea as tiny hatchlings. Mature females, however, must renew their terrestrial ties. Every two to four years, between May and August, they are instinctively drawn to the beaches to lay their eggs, a strenuous ordeal that occurs in an element alien to the otherwise free-floating turtle. The female drags herself upland to the base of the dunes above high tide. There the big turtle digs a hole twenty inches deep with scooping movements of her rear flippers and deposits 75 to 150 eggs, one of as many as five clutches she may lay during the summer.

The female loggerhead selects a specific type of beach, one that will best protect her eggs and ensure her safe return to the sea and the safe entry of the young turtles after they hatch. A dark, tree-lined horizon of a wide-sloping beach backed by dunes serves best as a contrast to the lighter reflections of surf and sea toward which she will naturally move once her eggs are deposited in the sand. Some two months later the little hatchlings will make their way to the sand's surface and search in the darkness for the sea's brighter horizon.

ONE NIGHT on the beach at Cumberland Island, we found a loggerhead's deep tracks. In the lights of our jeep we noticed the two furrows she had made with her flippers; no return tracks to the sea were visible. Our guide was Hilburn O. Hillestad, a research associate at the University of Georgia's Institute of Natural Resources. For six years Hillestad has been inspecting the state's beaches during nesting season, tracking and tagging the big turtles, cataloging and computerizing the results.

"Turtle!" said Hillestad. In one swift motion he turned off engine and lights and jumped from the vehicle. We followed him toward the dunes where, in a depression of scooped-out sand, we recognized the ponderous form of the loggerhead. Moonlight shone on her barnacled carapace; sand formed a film over her weathered shell. Tears streamed from her eyes, and she sighed intermittently as she labored. The tears, Hillestad explained, are simply a method of excreting salt, a function that occurs unnoticed when the turtle is in the water. The sighs are a result of hauling some three hundred pounds of muscle, fat, and shell across the sand. Thus turtle taggers frequently turn the animal over on its back not only to keep it from crawling away but to relieve the great weight of its body while a tag is attached to its flipper.

Hillestad reached beneath the loggerhead and brought up an egg. Golf-ball sized, the white leathery sphere glistened in the moonlight. What happens to the hatchlings that reach the sea remains one of nature's great mysteries. It is believed that for the first year or so they shelter and feed in rafts of sargassum seaweed. The only known fact about this period of their life cycle is that they undergo exceedingly rapid growth during their first seven years. Their carapaces increase from half-dollar size to at least three feet in length.

ALTHOUGH the Pacific loggerhead is relatively numerous, the Atlantic species is fast declining. Along the coasts of West Africa and Turkey these turtles have been exploited mercilessly as a food source. This exploitation in addition to destruction of nesting beaches have caused their disappearance from most of their former range in Cuba, on Caribbean shorelines, and on the islands off

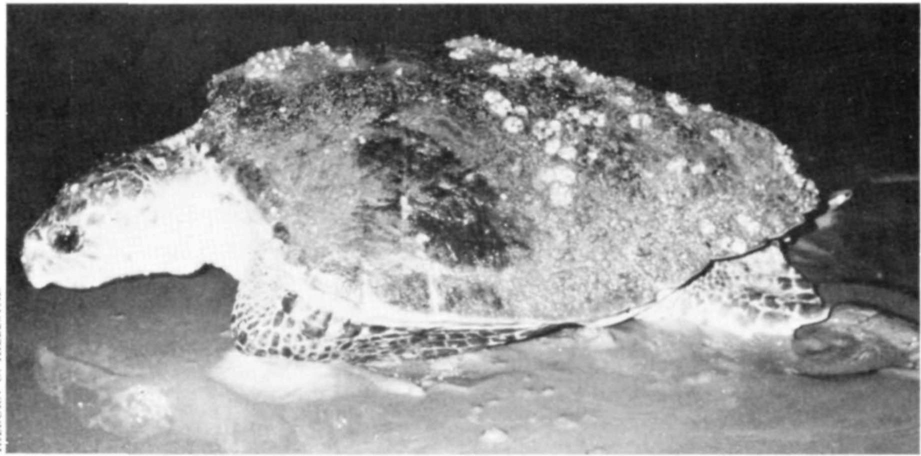
Mississippi and Alabama on the Gulf Coast. They formerly nested as far north as Massachusetts, but suitable shoreline for nesting remains only along some islands and mainland beaches of Virginia, North and South Carolina, Georgia, and Florida.

Yet even in these areas, seaside development, vehicles on beaches that trap hatchlings in their ruts or prevent females from laying eggs because of noise and lights, lights on coastal highways that lure hatchling turtles away from the sea, poaching by humans, and predation by raccoons and wild pigs combine to menace the Atlantic loggerhead. At sea, loggerheads may drown when inadvertently caught in shrimp trawlers' nets.

Under hatchery programs, turtle eggs are placed in a predator-free compound, then hatched, and the young turtles are released into the sea. However, money and manpower shortages have so far prevented the advent of hatchery programs on many beaches where they are needed.

Along North Carolina's outer banks the turtles nest in small numbers on beaches reserved as state or national seashores. No hatchery program exists in this state at present, but a hatching and release program is planned for the summer of 1977 at Cape Hatteras National Seashore and Pea Island National Wildlife Refuge. Park personnel will try to locate every turtle nest soon after laying and transfer the eggs to a protected enclosure. Any nest found more than twenty-four hours after laying will be protected in place until eggs can be safely moved to prevent them from being crushed by beach vehicles. Embryos can be damaged if eggs are moved after they have been in the nest for twenty-four hours or before forty-five days after laying.

In South Carolina, the picture is more promising—and yet more frustrating. North and South islands, part of a 20,000-acre plantation near Georgetown recently donated to the state, have fourteen miles of nesting beach. Three years ago these beaches were well used with three hundred nestings counted on one three-and-a-half-mile stretch. At that time a small hatchery was maintained from which approximately 10,000 baby turtles were released. Today, however, the nesting population goes uncounted, and the hatchery program has been abandoned.


HILBURN O. HILLESTAD

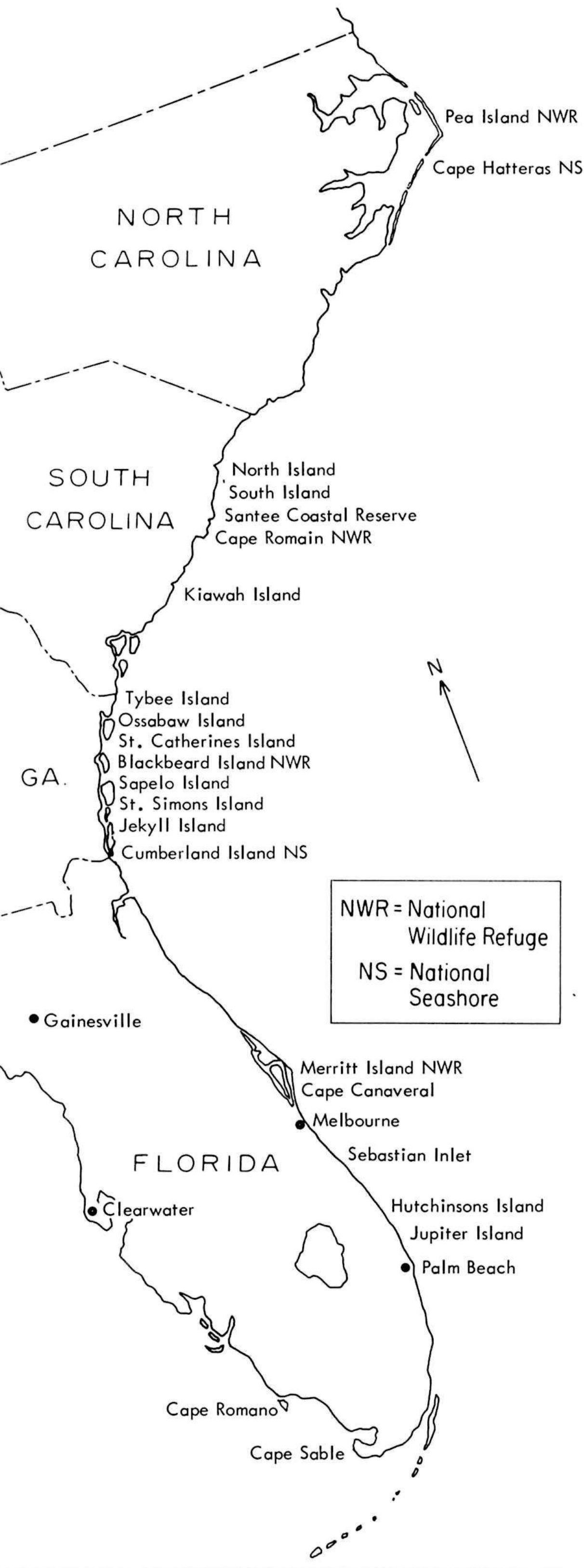
A weary Atlantic loggerhead turtle returns to the sea after laying her eggs.

South of Georgetown lies the Santee River Delta—22,000 acres of rich wetlands recently donated to the state by a private club. The beaches of two islands at the mouth of this reserve are visited by loggerheads each summer, but so far no population figures are available. Several research projects are planned for the future.

Contiguous to the Santee Delta Reserve is the Cape Romain National Wildlife Refuge, whose three-island turtle rookery harbors one of the greatest concentrations of loggerheads in the world. Last year's records show that 3,035 turtles used the twelve miles of nesting beach—a tremendous upsurge from the 600 recorded on these same beaches forty years ago. Biologists hypothesize that the Cape Romain increase occurred as loggerheads abandoned the ever-developing beaches around Georgetown and Charlestown. Whatever their origins, thousands of loggerheads are present each summer. No tagging and no hatchery program has yet been implemented, the attitude of wildlife refuge officials being one of noninterference.

Kiawah Island, fifty miles south of Cape Romain, was sold to the Sheikdom of Kuwait in 1974 (see NPCA magazine, March 1975). This large island was then turned over to contractors for development. According to O. Rhett Talbert, Jr., research associate at the Baruch Institute at the University of South Carolina, loggerhead nesting areas had for some years been abandoned along the developed portions of the beach. This consistent trend reversed itself, however, in 1976, when total nesting on Kiawah was down 80 percent and that which did occur was divided between two opposite portions of the island, one of them a developed section. The Kiawah loggerhead study has been supported since 1974 by the island's owners. During this time 200 nests have been counted yearly on the beaches. A hatchery system was set up by incubating the eggs in styrofoam coolers and storing them in a shed, thus protecting them from predators and allowing them to be transported in case of hurricanes or severe storms. To date, more than 7,500 hatchlings have been released into the sea from Kiawah.

In Georgia, the beach at Savannah can no longer be used by loggerheads—a sea wall has replaced the dunes. Along the Golden Isles, old-time residents of St. Simon's and Jekyll islands say that loggerheads once nested there in great numbers. During the 1950s, however, the beaches were developed. The stabilizing dune systems were destroyed, causing severe erosion and beach loss. Today only fifty to sixty loggerheads nest on the south



end of Jekyll, and they are in great need of state supervision and protection. To this end, hatchery and tagging programs have been initiated.

All is not lost in Georgia, however, thanks to the protective efforts of state and federal agencies, biologists and private citizens. The beaches of Sapelo, St. Catherines, Ossabaw, Wassaw, Wolf, and Tybee islands are used yearly by the turtles and monitored by researchers from the University of Georgia, Savannah Science Museum, and Brunswick Junior College. Blackbeard Island, with its wide sloping contours, is a loggerhead favorite and is protected as a national wildlife refuge.

Little Cumberland and Cumberland islands, with a total of perhaps 1,000 nesting loggerheads, constitute Georgia's foremost turtle rookery. Cumberland, the largest of the Golden Isles with at least 4½ miles of excellent beach, is a national seashore under the National Park System. Just to the north, Little Cumberland Island is a fine example of citizen conservation efforts. Eleven years ago residents built their own hatchery to save the eggs from raccoon and wild pig predation. Formerly 90 percent of the eggs were lost; today the hatchery, funded and staffed by property owners, produces between 8,000 and 10,000 baby turtles a year. When they hatch, the tiny turtles—one and a half inches long—are released on the beach at night with the hope that years later cues from their first crawl into the surf will remind them to return to nest at Little Cumberland. Evaluating the success of this system is difficult, however, for in recent years there has been only a very small increase in untagged or "new" turtles here. A much greater increase in "new" turtles was expected by now because seven to ten years have elapsed since the release of the first hatchlings, indicating either that only a small number of turtles have survived or, it is hoped, that the survivors have chosen other beaches on which to nest.

A number of good nesting beaches and turtle projects are in existence along the Florida coast. Cape Canaveral, well protected from the public, and nearby Merritt Island Wildlife Refuge provide sanctuary. The shoreline from Melbourne to Palm Beach includes Hutchinson Island, where a formerly state-run project estimated that 3,600,000 eggs were laid in 1973, with 43.6 percent lost from predation by raccoons. This project has been conducted by a private consulting firm since 1975 in connection with an environmental impact analysis. Private efforts on Jupiter Island's sixteen-mile beach monitored 4,000 nests yearly and tagged 3,600 loggerheads between 1969 and 1976. At the tip of Florida, the twelve miles of beach at Cape Sable in Everglades National Park has about 700 turtles that were tagged for a time.

Caretta Research (Drawer E, Sanibel Island, FL 33957), a nonprofit corporation funded by grants and membership dues, patrols Florida's west coast. Project leader Charles LeBuff, Sr., supervises a 100-volunteer team that counts and tags turtles, relocates eggs, and releases tagged hatchlings in units from Clearwater south to Cape Romano. Caretta Research tagged more than 500 loggerheads last year—all but 100 at Sebastian Inlet on Florida's east coast, where Caretta worked in cooperation with the state. The team has noted a 30 percent decline in loggerhead nesting within the past five years.

All of these private, state, and federal programs keep records on loggerheads. Georgia and South Carolina forward their information to a data bank coordinator at the University of Georgia. There is great need, according to turtle authority Dr. Archie Carr of the University of Florida at Gainesville, for one centralized data bank to which all loggerhead projects would contribute. "Computer cards are useless," he says, "unless the material is centralized and unless there is more publishing. There is a wealth of information available but it's just not in print." With more information publicized, better determination might be made about population sizes, distribution, and nesting patterns.

HATCHERY PROGRAMS alone are not the complete answer to the survival of the species. A most important step in saving the turtle would be to have it listed immediately under the Endangered Species Act of 1973, which would put the weight of the law behind conservation efforts. Although the loggerhead, along with several other species of sea turtles, is listed under the Convention on International Trade in Endangered Species of Wild Flora and Fauna, to which the United States is a party, this listing prohibits only international import and export of turtles and turtle products. Immediate listing in the United States is imperative in order to stop habitat destruction and the taking of nesting turtles and their eggs, which continue to cause reduction in sea turtle populations.

Listing of the loggerhead has been proposed several times since 1973, but no final action has ever been taken on these proposals. The problem of the loggerhead's survival has become entangled in a web of bureaucratic infighting. The Fish and Wildlife Service (FWS) of the Department of the Interior and the National Marine Fisheries Service (NMFS) in the Department of Commerce have been bickering about jurisdiction of the turtles for more than three years.

A sensible solution would be to give NMFS jurisdiction over the turtles when they are at sea and FWS jurisdiction when they are on land. This would be the most practical solution inasmuch as turtles nest extensively on the beaches of national parks, national seashores, and national wildlife refuges, which are already managed by the Department of the Interior. These lands could then be managed by giving first priority to the habitat needs of the sea turtles. However, a serious hazard to loggerheads at sea is posed by shrimp nets, in which the turtles often are caught and drowned. The NMFS is currently working on net designs that will prevent this.

WHILE men and women wage battles on land for the survival of the loggerhead, the turtle continues in its plodding way to reproduce its kind during the arduous and hazardous journey to the nesting areas and back to the sea. As ancient as is her instinct for survival, however, *Caretta caretta* cannot ensure the survival of her species on her own; man has made that an impossible task. Now man must act to save this unique and valuable sea turtle. ■

Delphine Haley, a free-lance writer, works mostly with natural science subjects and is a field correspondent with Defenders of Wildlife.

HILBURN O. HILLESTAD

Editor's Note

SAVE THE SEA TURTLES

The loggerhead is the predominant sea turtle nesting on the Atlantic coast, but smaller numbers of several other species come ashore to nest in this area, and they have been subjected to the same endangering pressures as the loggerhead. The Atlantic ridley, leatherback, and hawksbill sea turtles have already been listed as "endangered" under the Endangered Species Act of 1973; and the green and Pacific ridley, along with the loggerhead, have been proposed twice for "threatened" status since 1973, but neither proposal has been finalized.

As an initial action in an effort to resolve the sea turtle issue, NPCA has sent questionnaires to the superintendents of national parks and seashores and to managers of national wildlife refuges along the southern Atlantic coast requesting information on populations, regulations, current research, and other factors related to nesting sea turtles. Because the government agencies involved have not yet been able to make a definitive decision on the sea turtle issue, NPCA will bring the matter to the attention of the relevant committees of Congress early in 1977 in an effort to combat the bureaucratic negligence of this urgent problem.

NPCA members can help discourage exploitation of sea turtles by boycotting sea turtle products. Only products from "captive-bred" sea turtles may now be imported into the United States, but most of these turtles are actually reared from eggs taken from the wild. Although only the green sea turtle is heavily exploited commercially, controversy over *its* listing has hindered listing for all three sea turtles.

Turtle products include a variety of types of meat, including steaks and liver; leather products such as handbags, shoes, wallets, and belts; shells used in artifacts or sold as tourist trinkets; and turtle soup, which is made primarily from the sea turtle's flippers and the cartilaginous material among the bones of the belly plate.

Members should also urge the immediate listing of these three turtles as "endangered." Listing the sea turtles "threatened," as proposed by the National Marine Fisheries Service and the Fish and Wildlife Service, will not provide them sufficient protection, because the regulations accompanying the proposal are weak. Under these regulations, shrimpers will simply be instructed to return live turtles to the sea, and turtle farms will be allowed to continue to take eggs from the wild. Much stricter regulations would be required if the turtles were listed as "endangered." Please indicate your support for listing these turtles "endangered" by writing to one or both of the following addresses:

Secretary of the Interior
Department of the Interior
Washington, D.C. 20240

Secretary of Commerce
Department of Commerce
Washington, D.C. 20230

St. John:

A TRIP THROUGH TIME

A special living history program in the Virgin Islands National Park offers a taste of island life during the 1930s

by MARY JANE GOODBAN

IN THE SOUTHERNMOST corner of our national parks a fascinating living history program is being offered at Annaberg on St. John in the Virgin Islands National Park. The purpose of this living history program is to portray life as it was lived on St. John during the subsistence years—the 1930s. The "old people" who survived the depression years provide verbal interpretation of the sugar culture, calling upon their folk history, folkways, and folk medicine.

In carrying out its task of interpreting the park to its visitors, the National Park Service has managed to go beyond the usual information programs to an appreciation of the resourceful people of the island who lived in harmony with their environment.

Adventuring in the park, which covers nearly two-thirds of the 19-square-mile island, sooner or later, we were bound to find Annaberg, one of many Danish sugar factories that were scattered about the island during the eighteenth and nineteenth centuries. As we strolled up the trail through a tropical mist, we found ourselves on a trip through time.

UNTIL THE DANES abolished slavery throughout the Danish West Indies in 1848, they used slave labor to clear the rocky hillsides; plant the sugar, cotton, and tobacco; tend the crops; and work in the sugar and rum factories. In almost every space that was not too steep to stand—and where there was soil—the land was cleared and a crop planted. When cash crops could not be grown in the rocky soil, the forest trees were selectively cut for charcoal. Thus today the vegetation is second and third growth.

Remains of the slave quarters and the slaves' main village now lay down the slope to our left, partly hidden by jungle growth always ready to conceal the past. We could imagine the men at work with their short-handled knives on the slopes above, cutting the sugar cane, stripping the leaves, and loading the bundles of stalks on a mule or cart to be taken to the windmill at Annaberg.

The thirty-eight-foot windmill, an imposing structure atop the hill and built in the early nineteenth century, is one of the park's most photographed landmarks. Its revolving sails turned on a central shaft that rotated the rollers crushing the stalks. If the wind was not blowing, the stalks were crushed in a circular horse mill. We could trace the process through all the steps to the sugar crystals—or to rum when even the drippings from the containers of wet sugar were salvaged, for nothing was wasted. A few feet away was a magnificent frangipani tree in full pale-coral bloom—enjoying its own lovely view of the waters and islands below.

On a small knoll stood a tiny cookhouse buzzing with activity as visitors tried to squeeze in a narrow door. Built early this century, the cookhouse is the center of the living history program. Peeking inside, we could see that the little building had been refurbished, and fresh green pot herbs were hanging from a massive beam over the waist-high cooking hearth.

One of St. John's senior citizens was telling a fascinated audience all about genip, soursop leaves, locust pods, and many other organic substances. She wore a pink cotton dress, and a neat kerchief was fastened about her head—period dress dating back to the thirties. Her eyes sparkled as she talked, remembering the old days. We began to feel that every leaf and root on St. John must have been put to use. Some will make your tea and some will relieve your insect bites; some will shampoo your hair, some will help you sleep, and some will make your jelly; the calabash will supply you with a superb bowl, not only useful but beautiful.

We learned that the brown leathery pods of the West Indies locust tree contain sweet powdery insides that are eaten like a confection, that where the genip tree grows there are no sandflies, and that tea brewed from the black wattle leaf is delicious and is used to relieve coughs.

We also learned that the maran bush is one of the most useful of island plants. Its fuzzy leaves will scour greasy pots. It makes a perfect broom, leaving behind it a sagelike fragrance that repels insects. The children say that chewing the stems relieves toothache. A minister at the turn of the century was said to use oil or gum from the maran bush to help heal cuts. In those early times he ministered to both the physical and spiritual well-being of the people before the first physician arrived on the island in 1955.

Finally we reluctantly stepped

The windmill at the Annaberg sugar factory on St. John provided the power to crush the sugarcane.

CECIL W. STOUGHTON, NATIONAL PARK SERVICE

MARY JANE GOODBAN

A native of St. John in the Virgin Islands demonstrates old-time cuisine in the cookhouse at the Annaberg sugar factory at Virgin Islands National Park.

out of the little cookhouse with the other visitors so the cooking could be done. The coconut bread was partly mixed, and a tempting stew was simmering over charcoal. What did St. Johnians eat in the old days? Some of the same delicious foods can still be found on the island—corned pork and dumplings, kallaloo, goat head soup, stew mutton, creole lobster, conch, johnnycake, yeast breads, and other baked goodies. Some days another senior citizen puts together her now famous cassava bread. She cooks it over a wood fire or charcoal in an open pan, and lucky visitors may have a chance to sample this Virgin Island delicacy.

A few yards down the other side of the hill we found a garden in what used to be the ox pound, a stone enclosure that used to hold mules, horses, and donkeys as well as oxen. As a part of the living history program it is planted with such things as yams, cassava, sweet potatoes, okra, pumpkins, squash, cucumbers, peppers, and pigeon peas—all grown in the 1930s on the island. Participating islanders, generally on the National Park Service staff, cultivate the garden with cane hoes.

VISITORS could easily miss some of the best aspects of this delightful program, for the schedule is loose as befits the pace of life in the caressing Virgin Islands climate. We narrowly missed having an island guide on our walking tour; instead we enjoyed it alone and quietly with a printed brochure available by the trailside.

As we prepared to drift away to other scenes, busloads of St. John school children were arriving. They were lucky to have had a head start on the rest of us. For six years the Environmental Studies Program of the Virgin Islands Department of Education has provided the first and only ongoing program of environmental education in the Caribbean community.

We left the children to eat their lunch outside the cookhouse and strolled on down the other side of the hill past the old sugar factory walls, in various stages of crumbling, although some of the walls have been partly restored. Their colors and textures are as beautiful as a modern painting. The builders used yellow handmade brick, ballast stones, imported Danish red brick, volcanic rock, and brain coral taken offshore. The fresh coral heads could be cut to any shape for corners and arches, and it hardened as it aged. The mortar consisted of sand, water, crude molasses, and lime fired from sea shells and coral.

WHEN the Danish West Indies slaves won their freedom, the sugar industry almost disappeared. The United States bought the Virgin Islands—St. Thomas, St. Croix, and St. John—from Denmark in 1917. Virgin Islands National Park, consisting of more than 5,000 acres, was created in 1956; and 5,560 acres of submerged lands were added in 1962. Swimming, snorkeling, and underwater photography are popular activities. St. John, inhabited by fewer than three thousand people, is a gem with its white coral sand beaches, coral gardens, quiet coves, mountain roads, and walking trails through jungle growth. St. John is also rich in its human history, and the Park Service and its volunteers deserve credit for making part of that history live again. ■

Mary Jane Goodban is a free-lance writer presently employed as Public Information Specialist for the City of Berkeley Planning Department, Berkeley, California.

NPCA at work

GATEWAY

Poor Planning May Prevail

NPCA has opposed proposals for intensive capital development at Gateway National Recreation Area in New York City and New Jersey—involving expenditure of a huge amount of the limited National Park Service (NPS) budget—and for a transportation project that would increase congestion in the beach park. Rather than NPS treating Gateway like Coney Island or Jones Beach, NPCA called for protecting the natural seashore environment that attracts city dwellers while facilitating access for all people within the limits of the area's natural carrying capacity. NPCA emphasized the need for agencies other than the Park Service to develop additional open space within New York City.

This Association commented negatively on the recent "discussion draft" general management plan for this national recreation area to both the NPS and members of the New York and New Jersey congressional delegations. In November Congressman Jonathan Bingham (D-N.Y.) and other local representatives convened an all-day hearing to consider the transportation and development concepts in the draft.

The hearing focused attention on the critical problem of access to Gateway. NPS proposes an investment in equipment for 2,600 busloads of visitors a day to the NRA unit but does not propose to reduce private auto access. NPCA said not only would this plan likely result in chaotic congestion, but it would not provide adequate additional access to the various units of Gateway for low-mobility groups. No cost estimates have been developed for the transportation access system; and neither NPS, the City of New York, nor either of the two affected states expressed interest in funding the transportation access system.

The Park Service draft calls for $282 million in capital development for the park exclusive of transportation access costs. The plan would be an extravagant expenditure, disproportionate for one NPS area and a drain on funds for other Park System units—including underfunded wilderness parks, historical units, and other recreation areas.

In terms of transportation, NPCA instead urged NPS to make arrangements with officials of the existing rail and bus systems to facilitate access to Gateway and to investigate the possibility of passes subsidized by the Department of Health, Education, and Welfare or the Department of Transportation for underprivileged inner-city groups. A free shuttlebus system should be established from entrance points to within the NRA. The Park Service could utilize ferry service between the various units of Gateway and perhaps from take-off points such as Coney Island that can be reached by municipal subway.

NPCA recommended strongly against the highly commercialized "Gateway Villages" that are contemplated in the draft plan, noting at the hearing that the great opportunity offered by Gateway is to make the natural outdoor experience available to city people. NPCA indicated that this draft plan is undoubtedly the worst ever released by the Park Service in terms of compliance with the NPS mandate to provide *outdoor* recreation and protect the natural environment. Instead, the Park Service has produced a plan oriented toward *facility* development and *indoor* recreation that will increase visitation and create a public demand for associated activities.

Considering the limited financial resources of the Park Service, NPCA President A.W. Smith emphasized that "the entire burden for the provision of open space, natural areas, and recreational opportunities for the people in the deteriorating neighborhoods of big cities cannot be and must not be loaded on the National Park System and the National Park Service alone." Rather, there is evidence that people in crowded urban conditions want open space near their homes, and policy for Gateway should be developed in tandem with the programs of the Department of Housing and Urban Development and other agencies.

NPCA indicated that Gateway would not belong in the National Park System if developed as contemplated in the plan, which was prepared not by Park Service planners, but by private consultants who apparently lack a comprehension of what is appropriate in a National Park System unit.

Official state and agency witnesses at the hearing, limiting their remarks primarily to transportation issues, focused on the lack of commitment by the federal government and the lack of funding at the state and local levels to accommodate the number of people anticipated in the NPS plan. Hearing participants representing minority groups, principally black and Spanish-speaking, protested that representatives from their communities have not been adequately consulted in the planning process. Other local citizens' groups endorsed the Park Service's development plans whereas residents in the immediate vicinity of the NRA units complained that the increased visitation and development would seriously jeopardize their communities. At press time NPS planned to release its draft environmental impact statement for Gateway on April 1, 1977. Interested NPCA members can obtain a copy and express their comments to:

Mr. Jack Stark, Regional Director
North Atlantic Region
National Park Service
150 Causeway Street
Boston, Massachusetts 02114

ENDANGERED SPECIES

A Critical Crossroads

"Critical habitat" has been making dramatic and controversial news recently. It has stopped an interstate highway from disturbing sandhill cranes in Mississippi. It might prevent completion of the Tellico Dam, a TVA project in Tennessee that would totally destroy the habitat of a species of tiny fish. And it has sparked vigorous opposition in Montana, Idaho, and Wyoming, the three states in which the U.S. Fish and Wildlife Service (FWS) has proposed to designate critical habitat for the grizzly bear.

Whatever ensues from this latest controversy may ultimately determine the fate of the grizzly in the lower forty-eight states. In fact, it is not feelings against the grizzly that have caused this turmoil, but misconceptions or ignorance about what "critical habitat" designation means.

The term "critical habitat" originated in Section 7 of the Endangered Species Act of 1973. This section, entitled "Interagency Cooperation," applies only to actions of federal agencies, merely instructing them to take "such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of . . . endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected states, to be critical." Simple enough, at first glance.

It was not so simple, however, for FWS and the National Marine Fisheries Service, agencies responsible for implementing Section 7. Not until April 22, 1975, did these agencies publish an interpretation of critical habitat, and not until sometime after May of the same year did they develop guidelines to assist other federal agencies in complying with Section 7.

Keith Schreiner, Endangered Species Program Manager, summarizes the FWS interpretation of Section 7 in the August 1976 "Endangered Species Technical Bulletin," a monthly newsletter published by FWS : "Critical habitat is the area of land, water, and airspace required for the normal needs and survival of a species. . . . The Service has defined these needs as space for growth, movements, and behavior; food and water; sites for breeding and rearing of offspring; cover or shelter; and other biological or physical requirements."

This obviously is a very broad definition meaning different things for different species. Especially in the case of the grizzly bear, habitat elements that provide "normal needs and survival" are extremely difficult to define. At the present time, what we should designate as critical habitat for that species may be more a matter of scientific opinion than of hard scientific fact.

Schreiner goes on to say, "The most important point I can make about critical habitat is that in no way does it place an iron curtain around a particular area; that is, it does not create a wilderness area, inviolable sanctuary, or sealed-off refuge. Furthermore, I would stress that it does not give the FWS or any other government agency an easement on private property nor will it affect the ultimate jurisdiction regarding any public lands."

The habitat of the grizzly bear is seriously threatened by various types of development. Photo courtesy of Stouffer Productions, Aspen, Colorado, producers of At the Crossroads, *a film with beautiful footage of virtually every endangered species of mammal and bird in the nation.*

FWS considers that there may be many kinds of actions that could be carried out within the critical habitat of a species that would not adversely affect the species.

As of mid-December, critical habitat had been listed for only six species and proposed for nine species. However, FWS expects to recommend habitat designations for at least sixty-eight species within the next year.

With so few critical habitat designations in existence for such a short time, it is impossible to know whether in the future critical habitat will really be able to provide protection for our endangered species or will be a mere legislative and administrative formality.

Fortunately, the first major court controversy was resolved recently in favor of critical habitat. In June 1975 FWS made an "emergency determination" of critical habitat for the **Mississippi sandhill crane** when it became evident that construction of a new segment of Interstate 10 posed an imminent threat of habitat destruction. However, plans for construction continued until environmentalists halted the project in court. The Fifth District U.S. Circuit Court of Appeals instructed the Departments of Transportation and Interior to develop a solution that will not endanger this last remaining flock of the Mississippi subspecies of sandhill cranes. On November 29, 1976, the Supreme Court refused to review the case, indirectly upholding the ruling.

The next case may not be resolved so favorably. At the time that FWS designated critical habitat for the **snail darter,** a recently discovered perchlike fish that is known to survive only in the Little Tennessee River, a TVA project on the river south of Knoxville was halfway finished. Citizens took the matter to court and established the application of the Endangered Species Act to the situation and the fact that the dam would result in total destruction of the snail darter's habitat. However, the first court denied an injunction against construction on the basis that the $116 million Tellico Dam was near completion. More recently, a judge has at least prohibited TVA from filling the dam's reservoir until an appeals judge rules on whether congressional appropriations to TVA exempt the dam from the Act. An opinion is expected early this year. Meanwhile, the species is in increasing jeopardy.

Will the Supreme Court's decision on the sandhill crane in any way affect the appeals court decision on the snail darter? Can either of these be considered a test case? Although the sandhill crane decision has established the application of the Endangered Species Act and has clarified certain points, the trend cannot yet be determined. The conflicts seem to have just begun.

Despite recommendations to the contrary by NPCA and other conservation groups, FWS omitted from the final critical habitat designation for the **California condor** a site planned for mining by U.S. Gypsum. Mining activity on this site, which is contiguous with the official critical habitat, would cause air, water, and noise pollution—degrading the critical area and further endangering the last forty to fifty California condors on earth. Moreover, the Forest Service has proposed to construct a "condor viewing area"—a road and parking lot on Mount Pinos in the heart of the condor's critical habitat.

The critical habitat determination for the **grizzly bear,** proposed in the *Federal Register* in November 1976, may prove to be the most controversial determination of all. (See January 1977 issue.) Areas proposed as critical habitat and areas planned for study as possible later additions are shown on the accompanying map. NPCA supports the FWS proposal but believes that the agency should designate an even larger amount of acreage. Although the four proposed parcels comprise more than 13 million acres of land, this is only 2 percent of the grizzly's original range.

At a public hearing on December 17 in Washington, D.C., NPCA urged that study areas adjacent to the areas proposed for immediate designation be included in the final critical habitat determination. This Association also urged immediate designation of additional areas including: (1) the Selway–Bitterroot study area, which should also include all of the Selway–Bitterroot Wilderness and the Idaho Primitive Area; (2) the Sawtooth Wilderness; (3) the rest of Grand Teton National Park; and (4) the Bridger Wilderness proposed study area, which should be connected to the Yellowstone unit. NPCA also suggested that several other areas be studied for their potential as critical habitat. These areas include: (1) the northwestern corner of Montana and northern Idaho, an area that could join the three northernmost parcels already proposed into one large area; (2) the Coeur d'Alene Mountains, which could join the Cabinet Mountain parcel to the Selway-Bitterroot; and (3) the area south of the Idaho Primitive Area, contiguous with the Sawtooth Wilderness.

Moreover, NPCA called for immediate research into the grizzly's tolerance of human activity so that guidelines on allowable levels of different and combined types of activities can be developed. It will be nearly impossible for FWS to review all proposed actions on these 13 million acres on a case-by-case basis, nor will such a procedure ensure the protection of the area. For example, although one logging operation by itself may not adversely affect the grizzly, several operations could have a harmful cumulative effect.

There is still time for NPCA members to influence decisions on the critical habitat determination for this species. The official deadline for public

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comments on the proposed rulemaking is February 9, 1977; but FWS will not make the final determination immediately, and any comments received in the interim will certainly be read. Help this magnificent animal by expressing your support of the proposal and protection of additional areas to:

Director (FWS/LE)
U.S. Fish & Wildlife Service
P.O. Box 19183
Washington, D.C. 20036

THE LESSON OF THE *ARGO MERCHANT* (AND THE *OLYMPIC GAMES . . .*) *The recent oil spills from a number of Liberian tankers emphasize the need for adequate safety and navigational regulations for tankers and foreshadow similar environmental disasters as a result of oil and gas leasing proposed in the stormy Atlantic. In the wake of the appalling spills—especially those from the* Argo Merchant *near Cape Cod National Seashore, Massachusetts (above), and the Georges Bank fisheries and from the* Olympic Games *in the lower Delaware River—NPCA has reiterated its long-standing criticism of the Coast Guard for its regulatory failures. For example, most vessels are not required to feature segregated ballasts. For several years NPCA and other groups have been involved in litigation and other actions aimed at obtaining strong design, construction, and operation standards for all vessels, foreign and domestic, engaged in U.S. coastwise trade.*

EASTERN SEASHORE PARKS

Impending Leasing Off Coast

As plans and proposals to develop outer continental shelf (OCS) oil and gas deposits in the Atlantic, Gulf of Mexico, and off the coasts of Alaska and California proceed, the possibilities for serious and long-lasting effects on a number of coastal national parks and wildlife refuges become increasingly evident. For instance, NPCA recently testified at hearings on a proposed leasing sale in the North Atlantic that might affect five National Park System units and twelve national wildlife refuges.

This sale is just one part of a national OCS program that has been accelerated in the past three years. Under the proposed sale, OCS Lease Sale No. 42, the federal government is considering leasing a vast acreage on the Georges Bank off Cape Cod, Massachusetts, to oil companies for exploration and development. The Bureau of Land Management held the public hearings in Providence, Rhode Island, and Boston, Massachusetts, to consider a draft environmental impact statement (DEIS) on plans to lease 188 tracts representing approximately 1.02 million acres.

A proliferation of relatively small tankers will be needed to carry the oil from this sale to refineries located along the mid-Atlantic coast or possibly on New England shores. The number of tankers will result in an increased likelihood of collisions and oil spills. NPCA testified at the hearing that the DEIS does not take into account the fact that these smaller tankers will not be subject to government requirements for segregated ballast tanks, a design feature that ends the problem of oily ballast discharges.

The tankers will be traveling close to shore. Thus, both oil spills and chronic low-level discharge could have severe effects on biologically productive coastal wetlands and salt marshes and their wildlife as well as on public beaches and recreational areas. NPCA testified that the draft statement failed to give adequate consideration to possible effects of Sale No. 42 on several national wildlife refuges and on Acadia National Park (Maine), Cape Cod National Seashore (Mass.), Fire Island National Seashore (N.Y.), Gateway National Recreation Area (N.Y.), and Assateague Island National Seashore (Md.–Va.). The latter two areas are some of the protected areas that would also be threatened by proposals for new leasing sales in the mid-Atlantic—possibly as close as 15 miles offshore from Assateague.

Ann Platt, an NPCA member who represented this Association at the hearings, voiced concern about the effects of OCS development on the highly productive fishing industry of the Georges Bank. She noted that important food sources might be damaged or destroyed in attempting to develop oil and gas reserves about which little is known.

Furthermore, Platt emphasized that although heavy helicopter traffic would be associated with the OCS operations, the DEIS fails to predict the likely volume of traffic or to consider the effects that helicopter use would have on natural areas near Cape Cod. The DEIS states that helicopter landing pads should be located "as seaward as possible," but attempts already have been made to purchase land for landing sites at Nantucket and on Cape Cod. The BLM has made no provisions for protecting natural areas nearby or for ensuring that helicopters avoid habitat of birds (including endangered species) and other wildlife that are easily disturbed by noise.

CAPE HATTERAS

Thirsty Developers

Behind a seemingly mundane proposal to construct a water line to a village within Cape Hatteras National Seashore, North Carolina, is a serious threat of development of as many as 800 vacation homes within the NPS unit and impairment of the resources of this vulnerable barrier island.

NPCA continues to fight the proposal in a relatively undramatic but nevertheless crucial battle.

More than a year ago, the National Park Service prepared an environmental assessment of the plan to construct a water line from the town of Buxton to the town of Avon, enclaves within the national seashore. This plan would provide additional water to facilitate expansion of Hatteras Colony, a second-home development that has a record of leveling dunes, polluting

groundwater, dredging a marina, and filling wetlands.

The assessment was needed because the Cape Hatteras Water Authority would have to obtain a special use permit from the Park Service before it could construct the line across nearly 3 miles of fragile seashore. NPS concluded that the water line would facilitate development that could indeed have serious adverse effects on the seashore itself. Developers protested the assessment; but NPCA and other conservation organizations, including the Conservation Council of North Carolina, registered strong objections to the water line proposal. As a compromise the Park Service agreed to issue a conditional special use permit, specifying that the village must enact a local land-use plan and provide a sewage treatment plant adequate for the local community. Subsequently this conditional permit was rejected, and developers obtained a legal opinion that no special use permit was necessary. The Farmers' Home Administration, the agency that would grant funds for construction of the water line, has prepared a draft environmental impact statement on the Avon water project.

NPCA recently commented on this draft, concluding that the poorly prepared, woefully inadequate statement failed to assess even the most obvious alternative to the line—development of a sewage treatment plant for the town of Avon sufficiently advanced to prevent pollution of the local aquifer. (The aquifer has a sufficient water supply to fill foreseeable local needs, but it is currently being polluted by septic tank seepage.)

NPCA has decided that the virtual certainty of adverse effects on Cape Hatteras National Seashore from continued development of vacation homes in the Avon area is sufficient justification for this organization to consider challenging the legality and adequacy of the environmental statement as well as the legal opinion that NPS approval of the pipeline is not necessary.

PARK ACTION SEMINAR

Getting it Together

NPCA recently hosted an all-day meeting of conservationists from leading environmental organizations, key congressional staff members, the National Park Service deputy director, and NPS branch chiefs concerning National Park System issues. The seminar focused on a number of complex management problems, the National Park Service budget—both for fiscal year 1978 and over the long term—and proposals for addition of new areas to the Park System.

Park management issues discussed included the need to acquire 35,000 acres of private inholdings in the older areas of the National Park System and the necessity of strengthening the Park Service's hand in concessions' management, including the need for amendments to the Concession Policy Act. The meeting also covered strategies for improving the acceptability of mass transit systems to alleviate congestion, overcrowding, and resource damage within NPS units. (New legislation may be needed to stimulate interest in this worthwhile activity.) Seminar participants examined whether snowmobiles, hang-gliders, and motor-powered river trips are compatible within national parks and discussed at length land use problems on property adjacent to NPS units such

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From the shores of Gitche-gumee . . .

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Getting Involved

Dear NPCA Member:

As our world becomes increasingly technological and society more complex, we are increasingly aware of the responsibility we must assume as individual citizens in order to express our concerns effectively.

Yet sometimes we are left with a frustrating sense of not being able to accomplish things on our own. Although we realize that we must each be responsible for improving the quality of our surroundings, it is only through organizing ourselves effectively that we can make ourselves heard.

We believe that NPCA offers you the opportunity to participate in a meaningful and effective way of improving our environment, not only for ourselves, but for future generations.

There are many ways in which you, as a concerned individual, can give your strength to NPCA.

Because of the new tax laws effective in January 1977, NPCA can now make recommendations to its members on actions to influence legislation affecting our national parks. Through our CONSERVATION DOCKET and NPCA AT WORK we provide for your background information on bills before both the Congress and the Executive Branch of the government and ways you can have direct influence upon them.

What better way have we, as individual citizens, of advocating our needs than to write to those who create the legislation affecting what most interests us? We hope that you will write to your Congressman and let him know how *you* feel about decisions being made at the national level which affect your life. Your voice will be heard and will be supported by an organization dedicated to providing you with the information you need in order to act as effectively as possible.

Many of you have written to tell us of your involvement in your own communities. We are always glad to give whatever advice or help we can and hope that you will continue to call and write us. The better informed we are of your interests and opinions, the more capable we are of developing our

organization to truly represent your concerns.

Yet to represent you effectively, we must continually grow. To make our voice heard, we must be as large a group as possible to make a strong impact. This is why we continue to ask you to help us expand NPCA by telling your friends about us.

You must know people who are as concerned about the quality of our environment as you are, who share your interest in preserving our national parks as unspoiled wilderness free of the problems of modern civilization, who also wish to leave to the future generations of our country the peace and beauty we now find in our national parks.

Help us create an even stronger organization, one which will be effective, meaningful, and durable over the years. Tell your friends about us. You will not only help build a stronger NPCA to represent you—you will also be offering to another concerned individual, who wonders what he or she can do, the opportunity to participate in creating an environment we all want.

When you help us by getting a member, you will receive a beautiful portfolio of nine selected *National Parks & Conservation Magazine* cover photographs by outstanding nature photographers.

Get involved. There's plenty to do, and we always need your support.

Best,
Betty Phillips
Treasurer
Board of Trustees

NPCA at Work—*Continued*

as Redwood National Park in California and Everglades National Park in Florida.

Discussion of the Park Service's budget centered on the question of whether a program such as the one contemplated in President Ford's Land Heritage Act should be revived or whether the customary annual appropriations process would be sufficient if the new Administration gives adequate priority to the needs of parks.

Potential new areas for addition to the National Park System that were discussed at the meeting included the Alaska d-2 lands—which get top priority—and the Chattahoochee River (Ga.); the Santa Monica Mountains (Calif.); the Tallgrass Prairie (Kans.); New River Gorge (W.Va.); the Nantucket Sound Islands (Mass.); Mount Mitchell (N.C.); Santa Margarita Mountains (Calif.); Alexandria Waterfront (Va.); and Potomac River (W.Va., Va., Md.). Existing National Park System units considered for expansion include Sequoia National Park (Calif.), Rocky Mountain National Park (Colo.), Manassas National Battlefield Park (Va.), Death Valley National Monument (Calif.–Nev.), and Channel Islands National Monument (Calif.).

POINT REYES

Naturally

Just 25 miles north of San Francisco lies one of the most wild and unspoiled coastal areas in the United States: Point Reyes. The area's importance is largely due to the haven it provides for hundreds of species of wildlife and the striking ecological diversity preserved in habitats ranging from heavy forest to rocky coast. However, the proximity of Point Reyes to the highly urbanized Bay Area population—for whom it provides unusual educational, recreational, and inspirational opportunities—makes it doubly valuable.

Fortunately, Congress recognized the importance of preserving Point Reyes and in 1962 designated more than 64,000 acres of this area to be included in the National Park System. Although the Park Service tagged Point Reyes with the administrative category of "recreation area," the congressional mandate clearly indicated that the seashore was to be managed to preserve its natural quality. Thus, recreation

has consisted primarily of hiking and backpacking, with relatively little impairment of the natural landscape.

In fact, much of the area qualified as wilderness under the Wilderness Act of 1964, and in October 1976 Congress designated half the national seashore as wilderness or potential wilderness. At the same time Congress reinforced its preservation mandate with an amendment to the original Act that had designated Point Reyes National Seashore. This amendment calls for administration of the seashore to be based upon "maximum protection, restoration, and preservation of the natural environment."

With this perspective, NPCA reviewed the "Natural Resources Management Plan and Environmental Assessment for Point Reyes National Seashore" issued last year. The main objectives of the report are commendable. NPS aims to maintain the present ecological diversity and to perpetuate the quality of an "untouched" California landscape. In commenting to the superintendent of Point Reyes on the report, NPCA emphasized that *maintenance* of the environment does not go far enough; *restoration* of the natural environment must be a primary management objective. The majority of activities planned are consistent with this attitude.

For example, NPS plans to conduct controlled burning in order to preserve the bishop pine forest, a vegetative community that is being overtaken by Douglas fir due to suppression of natural fires. Nonnative plants, particularly nuisance plants, will be removed where practical and feasible. The Park Service will also remove earth dams to allow salmon to return to their original migration patterns. Tule elk, which formerly inhabited this area, will be reintroduced.

However, the report contains plans for some activities that are inconsistent with the stated objectives. The major "unnatural" activity in this seashore area is beef and dairy cattle grazing. The majority of the seashore not designated as wilderness is pasture on which the government leases out grazing rights. Grazing has greatly altered the grassland vegetation, and cattle have usurped habitat that could be used by native animals. Yet the recent

Continued on page 27

The Life of Isle Royale

"There it is!" someone exclaims. Rousing from a half-sleep, we part the curtains and look north across the wide gray waters of Lake Superior. Along the horizon floats a thin, dark strip—indistinct, almost a part of the water. From this point, halfway across the world's greatest lake in the lounge of the gently rolling *Ranger III,* Isle Royale is pure mystery.

We doze occasionally, and each time we awaken that thin line has stretched and widened. Finally we join the growing group on the deck. Like everyone else, we wonder what that remote island is like and what it holds in store for us.

As the vessel approaches Middle Islands Passage, the island begins to reveal itself. We see long outcroppings of gray rock. We see thick forest, pale green with birches and dark with spires of spruce and fir. Across the water drifts the faint pungency of those firs, saying, as nothing else can, "North Woods." Entering Rock Harbor, we see the dark rocks along the shore, taking the lake's pounding below and wearing a band of orange lichens above the waves' reach. Herring gulls wheel against the backdrop of forest, rock, and sky. Ducks patter away at the vessel's approach.

But there are few clues to what is happening on this great forested rock—the unfolding of petals under the trees, the burgeoning of young life, the deadly game between predator and prey. And there is hardly a hint about what it will be like to live on this wild island for the next small part of our lives.

To step onto Isle Royale is to leave behind one's old self and one's old world and to begin a new exploration into the nature of life.

Naturalist Napier Shelton thus describes his arrival at Isle Royale National Park, a remote island complex in Lake Superior, Michigan. Shelton continues the story of his time in this wild park in *The Life of Isle Royale,* a colorful 144-page volume that is the latest in a series of ecological handbooks prepared by the National Park Service.

He focuses on the geological history and remarkable plant and animal life of Isle Royale, which has remained largely undisturbed by man's influence because of its location. For instance, he discusses the interdependence of wolf and moose populations on this island. In describing the wilderness experience, the author emphasizes Isle Royale's limited carrying capacity for people.

The soft-cover volume is illustrated with numerous color photographs, drawings, and a map of the half-million-acre national park. Shelton also has provided extensive charts of the varied species of trees, fishes, birds, and other wildlife found in the park.

The author, a resident of Washington, D.C., holds an M.A. degree in plant ecology from Duke University and a Ph.D. in geography from the University of Michigan. Earlier Shelton works in the series discussed the ecosystems of Saguaro National Monument in Arizona and Shenandoah National Park in Virginia.

The Life of Isle Royale is available for $3.30, under Stock Number 2405-00619, from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Enclose a check or money order to the Superintendent of Documents.

MICHIGAN TOURIST COUNCIL

news notes

ENDANGERED SPECIES
International Treaty Boosted

Thirty-seven nations convened in Berne, Switzerland, in November 1976 for a conference that increased the list of species protected under the Convention on International Trade in Endangered Species of Wild Flora and Fauna. Some procedures adopted at the conference could speed implementation of the important treaty and aid in its enforcement.

The occasion marked the first conference since eighty nations negotiated the treaty in 1973 to ensure survival of species of wildlife and plants most threatened by international trade. Twenty-four of the thirty-three nations that have ratified the treaty (including the United States) were represented at the conference as well as thirteen other nations. The meeting reportedly was unhampered by political differences. However, few of the developing nations—producers of wildlife—were represented.

There are three appendices of the convention under which species may be listed, depending on the degree to which they are endangered by trade. *All* trade in species and their products listed on Appendix I is prohibited. Appendix II requires import and/or export permits for international commercial trade; and Appendix III, under which no species have been listed yet, includes species protected by domestic law in one or more of the countries that adhere to the convention.

The most significant achievement of the November 1976 conference was addition of 108 animal taxa and 14 plant taxa to Appendices I and II. Species added that occur in the United States or its territorial waters are: fin and sei whales, fur seals, the grey wolf, bald eagle, peregrine falcon, osprey, Gila monster, all sea turtles not already listed, and the plant family *Cycadaceae.* Other animals listed include all primates, rhinos, pythons, boas, otters, and cats not already listed; plus the African elephant, African chameleons, iguanas, day geckos, and eagles. Two tree fern families, *Cyatheaceae* and *Dicksoniaceae,* were added to Appendix II. (NPCA recently signed a Natural Resources Defense Council petition that maintains that those species just added to Appendix I of the international treaty should now be listed for protection under the U.S. Endangered Species Act.)

In addition to the new listings, these important procedures and proposals were adopted:

- Biological criteria for adding species to Appendices I and II or deleting species.
- Guidelines for nominating species for Appendix III.
- A recommendation for an inventory of endangered flora and fauna already in museums and herbaria to reduce demand for additional specimens from the wild, and procedures for marking shipments of such flora and preserved animal specimens.
- A position that any nation placing a "reservation" on the listing of any species will be treated as a nonparty in import/export regulations on that species. The Convention itself allowed a nation to place such a reservation. If enough nations exercised this option, it would constitute a loophole, considering that commerce between two nonparties is unregulated. However, a related measure adopted at the recent conference is that parties will require documentation from all nations (including nonparties) similar to that now used for commerce between parties. This will help to eliminate the problem of smuggling of wildlife illegally taken in one country to another country that has no requirement for documentation of legal export from the country of origin.
- A proposal to gradually restrict pet trade in wild animals and to foster captive breeding for this purpose.

Furthermore, the conference resolved to urge the United Nations Environmental Programme (UNEP) to provide an enlarged, permanent Secretariat that would serve as the coordinator of all programs and activities conducted under the treaty. At present UNEP receives less than one-tenth the amount necessary for adequate staff and program funding.

Because the Convention meets only biennially, a small steering committee (United States, Switzerland, Canada, Ecuador, and Ghana) was formed to organize a special meeting within the next year to consider some basic technical problems such as guidelines on shipment of live specimens.

Meanwhile, perhaps the most important task ahead is to secure the ratification and active enforcement of the treaty by more nations.

STOUFFER PRODUCTIONS

The bald eagle was recently listed under the Convention on International Trade in Endangered Species of Wild Flora and Fauna. Under the U.S. Endangered Species Act, it has been proposed as "endangered" in forty-three continental states and as "threatened" in five others.

INTERNATIONAL MAGAZINE
PARKS For Professionals

PARKS, an international magazine published for professionals by the U.S. National Park Service and Parks Canada, just released its fourth issue in January, and already copies are being grabbed up by about 6,000 subscribers in more than 150 countries and dependencies around the world. In fact, you could notice a copy of *PARKS* in some very exotic places. On a recent visit to Mongolia, for instance, an FAO representative offered a copy to an official only to be informed that the official was already in possession of his own copy.

Issued quarterly in English, French, and Spanish editions, *PARKS* is a direct response to Recommendation No. 16 of the Second World Conference on National Parks and earlier calls for international exchange of expertise in planning, management, and operation

of national parks and other protected areas. Thus, the magazine focuses on operational problems and solutions in parks from Galapagos to Amsterdam as well as technical practices such as trail and shelter construction, masterplanning, and training of personnel. It also includes features on the protection of parks around the world and on international park issues such as UNESCO biosphere reserves.

The magazine is a pilot project, one that fills a long-felt need. In the spread of the national park idea, which was originated and given form in this country, to other countries and in its development there, one can see a new ground for international understanding—a common concern for the natural environment. Editor Robert Standish notes that the publication's sponsors believe that in park administration and management, as in natural ecosystems, strength results from diversity.

NPCA at Work—*Continued*

report does not even consider termination of this activity. NPCA has proposed that the NPS study the pastoral zone to determine the feasibility of and methods for returning it to a natural state. This rehabilitation could be done gradually by not renewing the grazing lease-backs as they expire.

Axis and fallow deer, exotic species introduced from Europe, represent the other major unnatural element in the seashore. Overpopulation of deer could result in disease, and overgrazing is degrading the environment. The Park Service proposes to reduce the population, maintaining it at the environment's carrying capacity. NPCA feels these deer should be gradually eliminated from the area, allowing native species such as the tule elk to expand and reoccupy this habitat.

The major failing of the plan is the lack of consideration given to the marine ecosystem and marine mammals in terms of research, establishment of policies, and determination of management actions. NPCA supported the proposals and suggestions set forth by the Marine Mammal Commission in a letter to the Park Service director. These include protection of harbor seals, research into the dynamics of the seashore boundaries of Tomales Bay, and baseline studies for potential sea otter and elephant seal repopulation.

reader comment

Emigrant Trail National Monument

Because of the article ["A Proposal: Emigrant Trail National Historical Monument," this Magazine, November 1976] we have had letters from all over the country offering encouragement and support for the monument proposal—even one from within the ranks of the Nevada BLM informing us that it was read by all and "very well received." We are rationing out our supply of copies with a shrewd and calculating eye as to where they will do us the most good, so if you see anyone walking around with a complimentary copy from us, you'll be pretty safe in assuming that he or she rides pretty high in the saddle out here in these parts. I carry my own copy in plain sight at all times, and it even got me into one of our better restaurants without a tie. Even John Wayne couldn't manage that. Our thanks again for everything.

Thomas Hunt
Committee for the Emigrant-Bicentennial National Monument
Palo Alto, California

Objects to "Bureaucratus Delayus"

Your October 1976 edition of the *National Parks and Conservation Magazine* [p. 29] . . . expresses complaints and criticisms directed at the Hawaii Department of Land and Natural Resources because of our stated position that "if the Secretary of the Interior approved the proposed endangered plants list in the final rulemaking process, without providing the State of Hawaii data substantiating Hawaii's endangered plants list, the Secretary's action will be arbitrary and capricious."

I commend NPCA's position and concern to protect endangered fauna and flora of the nation and Hawaii.

The nonresponsiveness and reluctance of the Smithsonian Institution and the U.S. Fish and Wildlife Service to provide us the information requested have created undue hardship in evaluating the validity of the proposed endangered plants for the State of Hawaii. Furthermore, due to the continued differences of opinion on how the proposed endangered plants list should be established, I made an inspection of their official documents at the Smithsonian Institution [on] their proposed endangered plants list during the week of October 4–8, 1976.

In the course of my inspection, I have found that Smithsonian Institution's supportive data to substantiate the proposed endangered Hawaiian plants are definitely deficient in quality information concerning the normal known range and distribution.

1. Supportive data substantiating endangered plants is wholly inadequate.
2. No existing maps [show] the locations and distribution of the proposed endangered plants.
3. No recent field survey was conducted to determine whether the endangered plants initially reported are still in existence.

I take strong objection to your distorted facts and repeatedly propagated as facts to your readers. I suggest your office check the endangered plants records at the Smithsonian Institution or the U.S. Fish and Wildlife Service.

Also, to your statements to *Bureaucratus delayus,* I say *no;* however, *yes* to follow accepted scientific methods in developing the endangered plants list for the State of Hawaii and the nation. If accepted scientific method is not followed, there will be no credibility to the Smithsonian Institution or the U.S. Fish and Wildlife Serive, or the endangered plants list.

The State Department of Land and Natural Resources, through its Division of Forestry, recently has been working closely with the U.S. Fish and Wildlife Service and the Smithsonian Institution to correct this deficiency. We will be mutually working closely to get the necessary information needed to protect the endangered plants in an orderly manner worthy of the Endangered Species Act.

For your information, lack of knowledge of habitat requirements and management practices for both fauna and flora is severely limited in Hawaii. The need for [long-term] research is evident; nevertheless, there is much more urgent need for quick surveys and inventories for fauna and flora and their critical habitat upon which to base resource and land management programs for the immediate future. I believe fed-

eral funding is vitally needed for Hawaii because of the disproportionate number of the nation's endangered plant species . . . located in Hawaii.

I believe your organization should take [a] positive position to protect endangered fauna and flora of the nation by recommending [that] Congress . . . make the necessary appropriation in order that the states can implement protection and management programs instead of nit-picking without accurate facts. Does your organization really know how much funds are appropriated by Congress to protect the endangered birds? Endangered plants? For the fire protection program? Forest fires can be very devastating and can result in the extinction of the many endangered species and their critical habitats. For the insect and disease protection program? Protection of critical habitats for endangered fauna and flora is not only limited to fire but also [includes] eradication of forest pests such as insects, disease, and weeds. The proportionate share to the states?

Tom Tagawa, State Forester
Hawaii Department of Land
& Natural Resources

Expert on Hawaiian Plants Responds

I am a botanist and ecologist who has been an active student of, and seriously concerned with, Hawaiian flora since 1932. I am now senior botanist at the Smithsonian Institution. I have no part in the Smithsonian Endangered Flora Project except interest and voluntary cooperation. In 1974, because I knew that the largest number of endangered species of plants in the United States are in Hawaii, and that no one else likely to do it had the necessary experience and knowledge, I spent some months of mostly my own time assembling my own knowledge and as much as I could compile from literature on Hawaiian botany, with ample input from as many good botanists in Hawaii as I could enlist. This was compiled into the best list of rare, endangered, and probably extinct Hawaiian taxa that seems possible or likely with present knowledge. The list was published in *Allertonia* by Derral Herbst and me, and was thus made available to the Smithsonian, the Office of Endangered Species, the Hawaiian Division of Forestry, and anyone else interested.

Mr. Tagawa has repeatedly stated, and he at least implies in the accompanying letter, that the State of Hawaii Division of Forestry is interested in protecting Hawaii's endangered species of plants. Pointing out the obvious and well-known deficiency of information as to the detailed distribution of Hawaiian plant species, he even says "The State Department of Land and Natural Resources, through its Division of Forestry, recently has been working closely with the U.S. Fish and Wildlife Service and the Smithsonian Institution to correct this deficiency." I suppose the key word here is "recently." Since the first list of proposed endangered species of plants was published in the *Federal Register* on July 1, 1975, Mr. Tagawa and his associates in Hawaiian forestry have been criticizing and objecting to it and showing remarkably little understanding of the subject. They show especially little familiarity with the way such a list must necessarily be compiled. Until November 3, 1976, the Hawaiian Division of Forestry, to the best of my knowledge, had not contributed one iota of new information on the status of any species of Hawaiian plant. On November 3 Mr. Ralph Daehler, forester on Kauai, not Mr. Tagawa, wrote a very constructive and informative memo adding to our knowledge of *Hibiscadelphus distans,* a species that no one doubts is endangered. This is a good start, and we hope the foresters in Hawaii will continue to make their knowledge available. Such information strengthens our list of endangered species and may help make possible measures to protect and save them from almost certain extinction.

R. J. SHALLENBERGER

Such a goal will not be accomplished by carping and criticizing and trying to discredit the only carefully compiled list of endangered Hawaiian plants that exists.

Mr. Tagawa's demand that we have detailed distributional knowledge of a species *before* it is placed on the endangered list shows that he is very naïve about how long it takes to make even the "quick surveys and inventories" that he recommends. If he had read carefully the introduction to the *Allertonia* list, he would know that it embodies the knowledge of Hawaiian plants gathered by most of the best informed experts on this subject, all of whom contributed their information freely and honestly. This compilation was put together in a few months, on a crash basis, by people who are genuinely concerned about the losses to the world of the botanical riches of the Hawaiian Islands. These are being depleted as the result of the ill-advised activities of the foresters, ranchers, and land developers whose interests Mr. Tagawa champions, as well as by the ravages of large four-footed animals—goats, sheep, deer, feral cattle, and hogs—that were brought to the islands with the best of intentions but with disastrous results.

Mr. Tagawa should know, as well as we do, that these destructive forces are actively at work. They are not likely to call a moratorium to wait for us to prove quantitatively that the species they are destroying are in any danger. He should see without our having to urge him that the only way to save the Hawaiian flora is to put all the probably, or even possibly, endangered and threatened species on the protected list at once. Then as soon as it can be clearly established that a species is not in any danger, it can be removed from the list. This is the only effective approach to this problem, and he knows it, or should.

My suggestion to Mr. Tagawa is that, if he and his department are really interested in protecting the endangered Hawaiian flora, they will do two things, instead of destructively criticizing the attempts of others. These are (1) stop converting the remnants of native Hawaiian forest and scrub vegetation to commercial timber plantations, and (2) devote their resources to an all-out attempt to eliminate feral quadrupeds from the public lands in Hawaii. This would go far toward con-

Continued on page 29

conservation docket

The tax reform bill that was passed at the end of the 94th Congress included a provision that permits nonprofit, tax-exempt organizations such as NPCA to influence legislation within certain limits set by law. What this means to you as a member of NPCA is that we can now inform you in our Magazine and through other means of NPCA's position on future bills and advise you of actions that you can take to help defeat or support the legislation. In addition, NPCA staff members will be able to work actively with Congress to see that legislation important to NPCA and its members is passed and that unacceptable legislation is defeated.

Don't forget that your representatives in the House and the Senate are interested in hearing from their constituents and that your letters will always be read by their staff members. If you can get a large number of people to write supporting or opposing a given position, the message is more likely to get through to the representative. In general, individual letters are more effective than petitions, although the usefulness of petitions should not be underestimated. If you can establish a good working relationship with a member of your representative's staff, you will be more effective.

As a constituent, you will, of course, have most influence with your own congressperson or senator; however, there are other people with whom you should consider being in touch as well. Help give sponsors of legislation that interests you an idea of the kind of support or opposition that exists in the country. The following officials are of key importance on legislation of interest to you: the Speaker of the House (Rep. Thomas P. O'Neill), the majority leaders of the House (Rep. James C. Wright) and the Senate (not chosen at press time); the minority leaders of the House (Rep. John Rhodes) and the Senate (not chosen at press time), and the chairman of the committee or subcommittee to which the legislation has been referred. These names will be listed in a future issue.

When you communicate with the offices of your elected representatives, you should try to be as concise and factual as possible. Long rambling letters or telephone calls are more irritating than beneficial. At the same time, supply enough information to give your representative good reasons to support your point of view.

It is important to make your views known before the crucial votes on issues that interest you. Most of the work on specific provisions of legislation is done in committees, so you should let your opinion be known on such details while a bill is still in committee and before it is voted on. Action on the floor of the House or the Senate is usually on the entire bill. At that stage major amendments are seldom adopted and it is best to advise voting for or against the whole bill.

Keep in mind the variety of ways of communicating with your representatives. In addition to the common method of correspondence by letter, a well-placed phone call to the person in the office who handles the issue of your interest also can be effective. Western Union has three services of which you can take advantage. You can specify that you want to send a Public Opinion Message—especially geared to com-

Reader Comment—*Continued*

vincing the conservationists of the honesty and sincerity of our public officials responsible for our native plant resources.

Meanwhile, we completely agree with Mr. Tagawa that we should try to persuade Congress to make available the necessary funds to do the research needed to improve our knowledge of endangered Hawaiian species. This, only, will make possible their ultimate protection and the preservation of the necessary habitat for their continued existence. We would also suggest that the Hawaiian legislature act at once to set the U.S. Congress a good example. The Governor and his staff, including Mr. Tagawa, might start the ball rolling by recommending this in their next budget proposals. Until they undertake some of these positive actions in this field, they will certainly continue to be tagged by the term "Bureaucratus delayus."

F. R. Fosberg
Senior Botanist
Smithsonian Institution

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The first few months of the 95th Congress will be devoted mostly to "housekeeping" activities. Both the House and the Senate will be attempting to reorganize and update their committees and rules. They will select committee chairmen and subcommittee chairmen as well as their leaders. The first major item of business will be hearings on the Fiscal Year 1978 budget. Many issues of special interest to NPCA members probably will not begin to receive serious attention until at least March. Watch this column for tips on legislative issues in which many NPCA members will have a particular interest and in which you may want to become involved!

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Continued from page 2

ONE SOLUTION which has had rather wide acceptance has turned around the submission of simultaneous proposals for two areas considered to be equal in quality, from which the Authority would choose one for later development or for exploitation by an agency to be known as the Enterprise. The acceptability of this system, for both sides of the controversy, will depend partly on the nature of the general governing agency, to be known as the Assembly, and the executive agency, to be known as the Council. Voting powers and procedures at this point would be crucial.

But it has now become abundantly clear that no structural devices can guarantee complete security to all parties. The problem can be resolved only at a much higher level, perhaps by the heads of state, and on the basis of a broader economic and political accommodation that has thus far been achieved.

IT IS ABSURD, in our judgment, to suppose that the Group of 77 is an unbreakable phalanx, irrevocably and unanimously opposed to the interests of all the industrial countries. The raw materials nations share the interests of the industrial nations in many respects. The so-called land-locked and geographically disadvantaged nations may often also share them. And all the nations of the world have a fundamental interest in the solution of world problems by law, and not by military force.

During the course of the past year, positions on both sides froze and reverted to extremes. Efforts to develop a common position between some of the industrial and some of the raw materials countries, conducted unfortunately in secrecy, broke down, and recriminations resulted. It was ridiculous to suppose that secret diplomacy could succeed in a meeting of 150 nations.

ANOTHER major difficulty has been the doctrines of the U.S. Treasury Department. The view has prevailed in that agency, with strong support recently in the State Department, that no interference could be tolerated with what was referred to as free enterprise. But the private companies involved, mainly American, some of the largest in the world, are but a handful in number. The public and quasipublic agencies of the other industrial countries are likewise huge. These companies and agencies customarily administer price and production levels in their own industries. They can hardly be looked upon as corner-grocery businesses.

And yet the United States has held firmly to its theological conviction that price and production controls in ocean minerals would be intolerable. The Group of 77 has been resolutely committed to the opposite position. And oddly enough, as the more recent texts emerged, the United States proposed production limits based on a growth in the world demand for nickel. And so, the unspeakable has been spoken, and realities can now be faced. The solutions which may possibly lie in commodity agreements for the ocean minerals must now be examined. We are not without bargaining power.

Nor will all the decisions in the Assembly, Council, and Authority be made in the meetings. They will reflect the relative interests and power of the participating nations in a much broader field. It will be in the effectiveness of our diplomacy in these wider areas that our security will lie, not in safety gadgets installed in the Seabed Authority.

THE FAILURE to reach an agreement on minerals will be reflected in the introduction of legislation in the current Congress intended to get our companies out to sea. Industry wants government loans, insurance, and guarantees of investment, perhaps assurances of profits. It seems to consider protection by the Coast Guard and Navy to be essential; these agencies have indicated a preference for an international agreement which would also ensure passage of our commercial and naval fleets through international straits.

Our huge corporations hardly need the proposed assistance. But a licensing system should be established whereby they would be prohibited from mining unless rigorous conservation and environmental regulations are obeyed. There is no great hurry about going to sea; there is great need for the protection of the oceanic ecosystems.

Deep seabed mining is by no means the only issue in the Conference on the Law of the Sea. It has become the sticking point for further negotiations. Once the seeming deadlock on mining has been broken, the other problems may well be resolved with comparative ease. We shall return to those problems in our next issue; of particular importance to environmentalists are the oceanic fisheries, marine mammals, and oceanic pollution.

—Anthony Wayne Smith

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